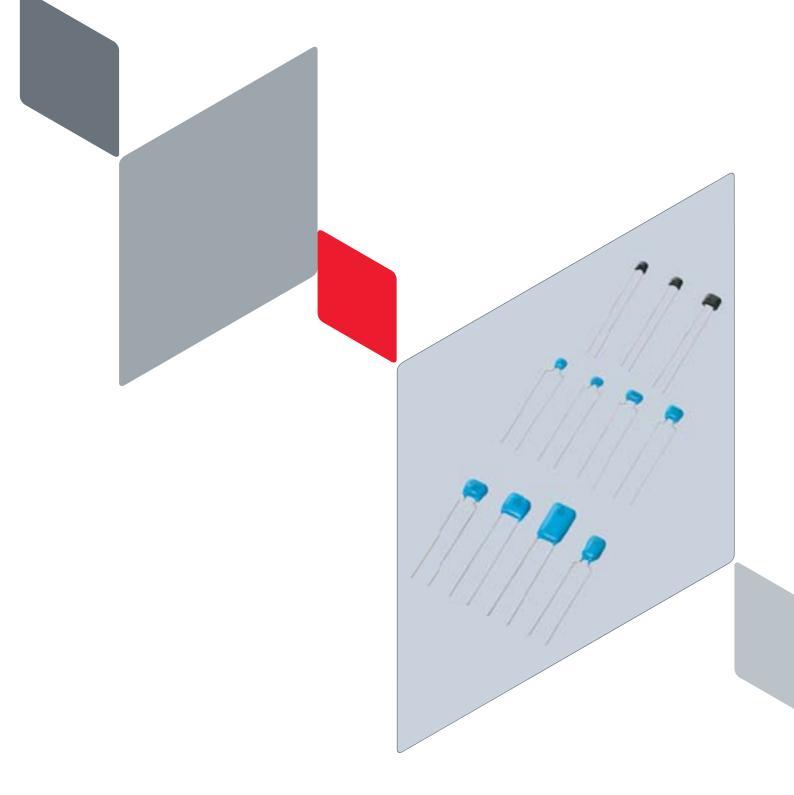


Leaded MLCC



EU RoHS Compliant

- All the products in this catalog comply with EU RoHS.
- EU RoHS is "the European Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment."
- For more details, please refer to our web page, "Murata's Approach for EU RoHS" (https://www.murata.com/en-eu/support/ compliance/rohs).

muRata

1

Contents

Product specifications are as of February 2018.

Par	t Numbering ·····	p2
1	Leaded MLCC for Automotive	
	RCE Series (DC25V-DC1kV)	p4
	Marking	рб
	Temperature Compensating Type, C0G/U2J Characteristics	р6
	High Dielectric Constant Type, X7R/X7S Characteristics	p13
	Specifications and Test Methods	p17
2	150°C Operation Leaded MLCC for Automotive	
	RHE Series (DC25V-DC100V)	p25
	Marking	p26
	Temperature Compensating Type, X8G Characteristics	p27
	High Dielectric Constant Type, X8L Characteristics	p28
	Specifications and Test Methods	p31
3	175°C/200°C Operation Leaded MLCC for Automotive	
	RHS Series (DC100V-DC500V)	p34
	Marking	p35
	Temperature Compensating Type, CCG/UNJ Characteristics	p35
	High Dielectric Constant Type, XAL/XAN Characteristics	p37
	Specifications and Test Methods	р38
4	Leaded MLCC for General Purpose	
	RDE Series (DC25V-DC1kV)	p44
	Marking	p45
	Temperature Compensating Type, COG/U2J Characteristics	p45
	High Dielectric Constant Type, X7R/X7S Characteristics	p52
	• Specifications and Test Methods	p56
5	Leaded MLCC for General Purpose	
	RDE Series Large Capacitance and High Allowable Ripple Current	
	(DC250V-DC630V)	p60
	Marking	p61
	High Dielectric Constant Type, X7T Characteristics	p61
	• Specifications and Test Methods	p63
	aracteristics Reference Data (Typical Example)	p66
	kaging	p67
<u>Л</u> С	Caution ·····	p69
Not	tice ·····	p71

muRata

Please check the MURATA website (https://www.murata.com/) if you cannot find a part number in this catalog.

5

2

4

• Part Numbering

Leaded MLCC

(Part Number)



1 Product ID

2Series

Product ID	Series Code	
RC	E	Leaded MLCC for Automotive
RH	E	150°C Operation Leaded MLCC for Automotive
RH	s	175°C/200°C Operation Leaded MLCC for Automotive
RD	E	Leaded MLCC for General Purpose

Temperature Characteristics

Temperati	ure Characte	ristic		Temperature Cha							
Code	Public STD Code		Reference Temperature	Temperature Range	Capacitance Change or Temperature Coefficient	Operating Temperature Range					
5C	COG	EIA	25°C	25 to 125°C	0±30ppm/°C	-55 to 125°C					
50	COG	EIA	25-0	-55 to 25°C	0+30/-72ppm/°C	-55 10 125-C					
5G	X8G	*1	25°C	25 to 150°C 0±30ppm/°C		-55 to 150°C					
56	790	1	25-0	-55 to 25°C	0+30/-72ppm/°C	-55 10 150-C					
				-55 to 25°C	0+30/-72ppm/°C						
7G	CCG	*1	25°C	25 to 125°C	0±30ppm/°C	-55 to 200°C					
				125 to 200°C	0+72/-30ppm/°C						
				-55 to 25°C	-750+120/-347ppm/°C						
7J	UNJ	*1	25°C	25 to 125°C	-750±120ppm/°C	-55 to 200°C					
				125 to 200°C	-750+347/-120ppm/°C						
7U	U2J I	U2J EIA					F 1A	25°C	25 to 125°C*2	-750±120ppm/°C	
70			25-0	-55 to 25°C	-750+120/-347ppm/°C	-55 to 125°C					
C7	X7S	EIA	25°C	-55 to 125°C	±22%	-55 to 125°C					
D7	X7T	EIA	25°C	-55 to 125°C	+22%, -33%	-55 to 125°C					
L1	XAL	*1	25°C	-55 to 175°C	+15%, -40%	-55 to 175°C					
L8	X8L	*1	25°C	-55 to 150°C	+15%, -40%	-55 to 150°C					
N1	XAN	*1	25°C	-55 to 175°C	+15%, -60%	-55 to 175°C					
R7	R7 X7R EIA		25°C	-55 to 125°C	±15%	-55 to 125°C					

*1 Murata Temperature Characteristic Code.

*2 Rated Voltage 100Vdc max: 25 to 85°C

4 Rated Voltage

Code	Rated Voltage
1E	DC25V
1H	DC50V
2A	DC100V
2D	DC200V
2E	DC250V
2W	DC450V
2H	DC500V
2J	DC630V
ЗА	DC1kV

GCapacitance

Expressed by three figures. The unit is pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros that follow the two numbers. If there is a decimal point, it is expressed by the capital letter "**R**." In this case, all figures are significant digits.

6Capacitance Tolerance

Code	Capacitance Tolerance					
С	±0.25pF					
D	±0.5pF					
J	±5%					
к	±10%					
М	±20%					

Continued on the following page. earrow

Continued from the preceding page. \searrow

Dimensions (LxW)

Code		Dimensions (LxW)				
	RCE Series	3.6×3.5mm max.				
	RHE Series	3.0×3.511111 111dX.				
0	RHS Series	3.8×3.5mm max.				
	RDE Series	4.0×3.5mm max. or 5.0×3.5mm max. (Depends on Part Number List)				
	RCE Series					
	RHE Series	4.0×3.5mm max.				
1	RHS Series					
	RDE Series	4.5×3.5mm max. or 5.0×3.5mm max. (Depends on Part Number List				
2		5.5×4.0mm max.				
3		5.5×5.0mm max.				
4		7.5×5.5mm max.				
5	7.5×7.5mm max. (DC630V, DC1kV : 7.5×8.0mm max.)					
U	7.5×12.5mm max. (DC630V, DC1kV : 7.5×13.0mm max.)					
W		5.5×7.5mm max.				

8 Lead Style

Code	Lead Style	Lead Spacing			
A2	Straight Long	2.5mm			
B1	Straight Long	5.0mm			
DB/DG	Straight Taping	2.5mm			
E1	Straight Taping	5.0mm			
K1	Inside Crimp	5.0mm			
M1/M2	Inside Crimp Taping	5.0mm			
P1	Outside Crimp	2.5mm			
S1	Outside Crimp Taping	2.5mm			

Individual Specification Code
Expressed by three figures

Packaging

Code	Packaging						
А	Ammo Pack						
В	Bulk						

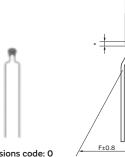
Leaded MLCC for Automotive

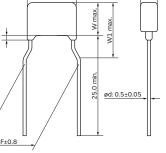
RCE Series (DC25V-DC1kV)

Features

1

- 1. Small size and large capacitance
- 2. Low ESR and ESL suitable for high frequency
- 3. Meet AEC-Q200, ISO7637-2 (surge test) requirement
- 4. Meet LF (Lead Free) and HF (Halogen Free)
- 5. Flow soldering and welding are available. (Re-flow soldering is not available.)
- 6. If copper wire is necessary at welding process, copper wire is available based on request.





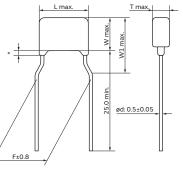
Coating extension does not exceed the end of the lead bend. Lead Wire: Solder Coated CP Wire

L max

T max.

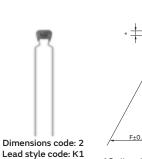
(in mm)

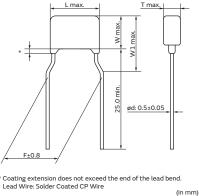
Dimensions code: 0 Lead style code: K1



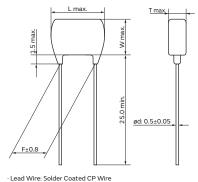


Coating extension does not exceed the end of the lead bend. Lead Wire: Solder Coated CP Wire (in mm)

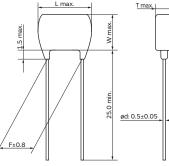




Dimensions code: 0 Lead style code: A2



(in mm)

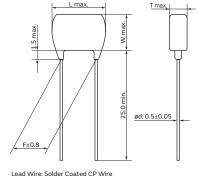


Dimensions code: 1 Lead style code: A2

· Lead Wire: Solder Coated CP Wire

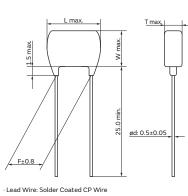
(in mm)

Dimensions code: 2 Lead style code: A2



(in mm)

Dimensions code: 3 Lead style code: A2



(in mm)



C49E.pdf May 10,2018

T max

ød: 0.5±0.05

W max.

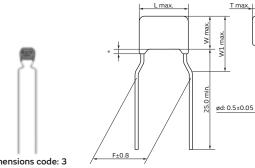
лі.

25.01

max.

W1

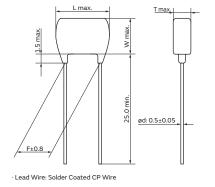
Continued from the preceding page. $oldsymbol{arphi}$



Dimensions code: 3 Lead style code: K1

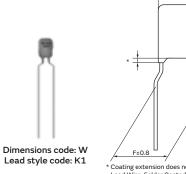
* Coating extension does not exceed the end of the lead bend. • Lead Wire: Solder Coated CP Wire (in mm)

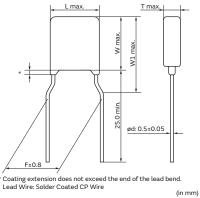




Dimensions code: 5 Lead style code: B1







Dimensions code: 4 Lead style code: K1

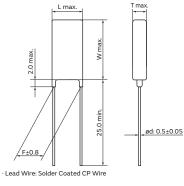
* Coating extension does not exceed the end of the lead bend.
• Lead Wire: Solder Coated CP Wire
(in mm)

L max.

+

F±0.8





(in mm)

Dimensions

Dimensions and		Dimensions (mm)								
Lead Style Code	L	W	W1	Т	F	d				
0A2/0DB	3.6	3.5	-		2.5	0.5				
0K1/0M1	3.6	3.5	6.0		5.0	0.5				
1A2/1DB	4.0	3.5	-		2.5	0.5				
1K1/1M1	4.0	3.5	5.0		5.0	0.5				
2A2/2DB	5.5	4.0	-		2.5	0.5				
2K1/2M1	5.5	4.0	6.0	See the individual	5.0	0.5				
3A2/3DB	5.5	5.0	-	product specification	2.5	0.5				
3K1/3M1	5.5	5.0	7.5		5.0	0.5				
4K1/4M1	7.5	5.5	8.0		5.0	0.5				
5B1/5E1	7.5	7.5*	-		5.0	0.5				
UB1/UE1	7.7	12.5*	-		5.0	0.5				
WK1/WM1	5.5	5 7.5 10.0			5.0	0.5				

*DC630V, DC1kV: W+0.5mm



1	
23	

Marking										
Rated Voltage	DC25V		DC50V			DC100V		DC250V	DC630V	DC1kV
Dimensions Temp. Code Char.	X7R	COG	X7S	X7R	COG	X7S	X7R	X7R, U2J, COG		G
0			-			-		-	-	-
1	(224K)	A 102J	(105к)	(224K)	A 102J	-	(224K)	U 102J (U2J) (U2A) (U2R) (X7R)	-	_
								(U2J)	(U2J)	(U2J)
2	(M _{K2C})	(C ⁵⁶³) J5A	(MK5C)	(C ¹⁰⁵ K5C		_		(C ⁴⁷³ K4C (X7R)	(Mr7C) (X7R)	(CH_KAC) (X7R)
								(C0G)	(C0G)	(COG)
3, 4, W			(CH106 K5C)	(M335 K5C)	-	(M225 K1C)	-	(M473 J4U (U2J)	(M103 J7U (U2J)	(1)1472 JAU (U2J)
								(¥224 K4C (X7R)	() (X7R)	(M333 KAC (X7R)
- U								-	(U2J)	(U2J)
5, U	_	_	_	_	_	_	_	(M 474 K4C (X7R)	(M 474 M7C (X7R)	(M 104 KAC (X7R)
Temperature Characteristics			G char.: A, X7 se refer to th			: U)				
Nominal Capacitance	-			-		figures				
Capacitance Tolerance	Marked w	Under 100pF: Actual value 100pF and over: Marked with 3 figures Marked with code A part is omitted (Please refer to the marking example.)								
Rated Voltage		,	25V: 2, DC50 se refer to th			/: 4, DC630V	: 7, DC1kV: A	A)		
Manufacturer's Identification	Marked w A part is o		se refer to th	e marking ex	ample.)					

Temperature Compensating Type, COG/U2J Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C1H1R0C0 H03	COG (EIA)	50Vdc	1.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H1R0C0 H03	COG (EIA)	50Vdc	1.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H2R0C0 H03	COG (EIA)	50Vdc	2.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H2R0C0 H03	COG (EIA)	50Vdc	2.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H3R0C0 H03	COG (EIA)	50Vdc	3.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H3R0C0 H03	COG (EIA)	50Vdc	3.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H4R0C0 H03	COG (EIA)	50Vdc	4.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H4R0C0 H03	COG (EIA)	50Vdc	4.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H5R0C0 H03	COG (EIA)	50Vdc	5.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H5R0C0 H03	COG (EIA)	50Vdc	5.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1



Continued from the preceding pa	age. 🖌	1						
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C1H6R0D0 H03	COG (EIA)	50Vdc	6.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H6R0D0 H03	COG (EIA)	50Vdc	6.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H7R0D0 H03	COG (EIA)	50Vdc	7.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H7R0D0 H03	COG (EIA)	50Vdc	7.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H8R0D0 H03	COG (EIA)	50Vdc	8.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H8R0D0	COG (EIA)	50Vdc	8.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H9R0D0 H03	COG (EIA)	50Vdc	9.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H9R0D0 H03	COG (EIA)	50Vdc	9.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H100J0	COG (EIA)	50Vdc	10pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H100J0	COG (EIA)	50Vdc	10pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H120J0	COG (EIA)	50Vdc	12pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H120J0	COG (EIA)	50Vdc	12pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H150J0	COG (EIA)	50Vdc	15pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H150J0	COG (EIA)	50Vdc	15pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H180J0	COG (EIA)	50Vdc	18pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H180J0 H03	COG (EIA)	50Vdc	18pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H220J0 H03	COG (EIA)	50Vdc	22pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H220J0 H03	COG (EIA)	50Vdc	22pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H270J0 H03	COG (EIA)	50Vdc	27pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H270J0 H03	COG (EIA)	50Vdc	27pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H330J0 H03	COG (EIA)	50Vdc	33pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H330J0	COG (EIA)	50Vdc	33pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H390J0	COG (EIA)	50Vdc	39pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H390J0 H03	COG (EIA)	50Vdc	39pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H470J0 H03	COG (EIA)	50Vdc	47pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H470J0 H03	COG (EIA)	50Vdc	47pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H560J0 H03	COG (EIA)	50Vdc	56pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H560J0 H03	COG (EIA)	50Vdc	56pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H680J0 H03	COG (EIA)	50Vdc	68pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H680J0 H03	COG (EIA)	50Vdc	68pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H101J0	COG (EIA)	50Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H101J0	COG (EIA)	50Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H121J0 H03	COG (EIA)	50Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H121J0 H03	COG (EIA)	50Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H151J0	COG (EIA)	50Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H151J0	COG (EIA)	50Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H181J0 H03	COG (EIA)	50Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H181J0	COG (EIA)	50Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H221J0	COG (EIA)	50Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H221J0	COG (EIA)	50Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H271J0	COG (EIA)	50Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H271J0	COG (EIA)	50Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H331J0	COG (EIA)	50Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H331J0	COG (EIA)	50Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H391J0 H03	COG (EIA)	50Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H391J0 H03	COG (EIA)	50Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
	COG (EIA)	50Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	50Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
	COG (EIA)	50Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	50Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
	COG (EIA)	50Vdc	680pF±5%	3.6×3.5	2.5	2.5 E.O	A2	DB M1
	COG (EIA)	50Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1 DB
	COG (EIA)	50Vdc 50Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB M1
RCE5C1H821J0 H03 RCE5C1H102J0 H03	COG (EIA)	50Vdc 50Vdc	820pF±5%	3.6×3.5 3.6×3.5	2.5 2.5	2.5	K1 A2	DB
	COG (EIA)	SUVAC	1000pF±5%	3.5×0.5	2.5	2.5	AZ	

1

Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🖌							
Part Number	Temp.	Rated	Capacitance	Dimensions LxW	Dimension T	Lead Space F	Lead Style Code	Lead Style Code
	Char.	Voltage		(mm)	(mm)	(mm)	Bulk	Taping
RCE5C1H102J0 H03	COG (EIA)	50Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H122J0 H03	COG (EIA)	50Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H122J0 H03	COG (EIA)	50Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H152J0 H03	COG (EIA)	50Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H152J0 H03	COG (EIA)	50Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H182J0 H03	COG (EIA)	50Vdc	1800pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H182J0 H03	COG (EIA)	50Vdc	1800pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H222J0 H03	COG (EIA)	50Vdc	2200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H222J0 H03	COG (EIA)	50Vdc	2200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H272J0 H03	COG (EIA)	50Vdc	2700pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H272J0 H03	COG (EIA)	50Vdc	2700pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H332J0 H03	COG (EIA)	50Vdc	3300pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H332J0 H03	COG (EIA)	50Vdc	3300pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H392J0 H03	COG (EIA)	50Vdc	3900pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C1H392J0 H03	COG (EIA)	50Vdc	3900pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C1H472J1 H03	COG (EIA)	50Vdc	4700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H472J1 H03	COG (EIA)	50Vdc	4700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H562J1 H03	COG (EIA)	50Vdc	5600pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H562J1 H03	COG (EIA)	50Vdc	5600pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H682J1 H03	COG (EIA)	50Vdc	6800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H682J1 H03	COG (EIA)	50Vdc	6800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H822J1 H03	COG (EIA)	50Vdc	8200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H822J1 H03	COG (EIA)	50Vdc	8200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H103J1	COG (EIA)	50Vdc	10000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H103J1	COG (EIA)	50Vdc	10000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H123J1	COG (EIA)	50Vdc	12000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H123J1	COG (EIA)	50Vdc	12000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H153J1	COG (EIA)	50Vdc	15000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H153J1	COG (EIA)	50Vdc	15000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H183J1	COG (EIA)	50Vdc	18000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H183J1	COG (EIA)	50Vdc	18000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H223J1	COG (EIA)	50Vdc	22000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C1H223J1 H03	COG (EIA)	50Vdc	22000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C1H273J2	COG (EIA)	50Vdc	27000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H273J2	COG (EIA)	50Vdc	27000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H333J2	COG (EIA)	50Vdc	33000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H333J2	COG (EIA)	50Vdc	33000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H393J2	COG (EIA)	50Vdc	39000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H393J2	COG (EIA)	50Vdc	39000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H473J2	COG (EIA)	50Vdc	47000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H473J2	COG (EIA)	50Vdc	47000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H563J2	COG (EIA)	50Vdc	56000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H563J2	COG (EIA)	50Vdc	56000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H683J2	COG (EIA)	50Vdc	68000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H683J2	COG (EIA)	50Vdc	68000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H823J2 H03	COG (EIA)	50Vdc	82000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H823J2	COG (EIA)	50Vdc	82000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C1H104J2	COG (EIA)	50Vdc	0.1µF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C1H104J2	COG (EIA)	50Vdc	0.1µF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A1R0C0 H03	COG (EIA)	100Vdc	1.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A1R0C0 H03	COG (EIA)	100Vdc	1.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A2R0C0 H03	. ,	100Vdc	2.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A2R0C0 H03	COG (EIA)	100Vdc	2.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A3R0C0 H03	. ,	100Vdc	3.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A3R0C0 H03	. ,	100Vdc	3.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A4R0C0 H03	. ,	100Vdc	4.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A4R0C0 H03	COG (EIA)	100Vdc	4.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
		100 vuc	-robi rorsph	5.0^5.5	2.5	<u></u>		1 · · · · · · · · · · · · · · · · · · ·

1



Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C2A5R0C0 H03	COG (EIA)	100Vdc	5.0pF±0.25pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A5R0C0 H03	COG (EIA)	100Vdc	5.0pF±0.25pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A7R0D0 H03	COG (EIA)	100Vdc	7.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A7R0D0 H03	COG (EIA)	100Vdc	7.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A8R0D0 H03	COG (EIA)	100Vdc	8.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A8R0D0 H03	COG (EIA)	100Vdc	8.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A9R0D0 H03	COG (EIA)	100Vdc	9.0pF±0.5pF	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A9R0D0 H03	COG (EIA)	100Vdc	9.0pF±0.5pF	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A100J0	COG (EIA)	100Vdc	10pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A100J0	COG (EIA)	100Vdc	10pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A150J0	COG (EIA)	100Vdc	15pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A150J0 H03	COG (EIA)	100Vdc	15pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A180J0 H03	COG (EIA)	100Vdc	18pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A180J0 H03	COG (EIA)	100Vdc	18pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A220J0 H03	COG (EIA)	100Vdc	22pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A220J0 H03	COG (EIA)	100Vdc	22pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A270J0	COG (EIA)	100Vdc	27pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A270J0 H03	COG (EIA)	100Vdc	27pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A330J0 H03	COG (EIA)	100Vdc	33pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A330J0 H03	COG (EIA)	100Vdc	33pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A390J0	COG (EIA)	100Vdc	39pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A390J0	COG (EIA)	100Vdc	39pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A470J0	COG (EIA)	100Vdc	47pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A470J0	COG (EIA)	100Vdc	47pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A560J0	COG (EIA)	100Vdc	56pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A560J0	COG (EIA)	100Vdc	56pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A680J0	COG (EIA)	100Vdc	68pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A680J0	COG (EIA)	100Vdc	68pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A820J0	COG (EIA)	100Vdc	82pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	100Vdc	82pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A101J0 H03	COG (EIA)	100Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A101J0 H03	COG (EIA)	100Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A121J0 H03	COG (EIA)	100Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A121J0 H03	COG (EIA)	100Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
	COG (EIA)	100Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	100Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A181J0 H03	COG (EIA)	100Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
	COG (EIA)	100Vdc	180pF±5%	3.6×3.5	2.5	5.0 2.F	K1	M1
	COG (EIA)	100Vdc 100Vdc	220pF±5%	3.6×3.5	2.5 2.5	2.5 5.0	A2 K1	DB M1
RCE5C2A221J0 H03 RCE5C2A271J0 H03	COG (EIA) COG (EIA)	100Vdc	220pF±5% 270pF±5%	3.6×3.5 3.6×3.5	2.5	2.5	A2	DB
RCE5C2A271J0H03_	COG (EIA)	100Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A331J0 H03	COG (EIA)	100Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A331J0 H03	COG (EIA)	100Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A391J0 H03	COG (EIA)	100Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A391J0 H03	COG (EIA)	100Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	3.6×3.5	2.5	5.0	К1	M1
RCE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB

1

Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A102J0 H03	COG (EIA)	100Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A102J0 H03	COG (EIA)	100Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A122J0 H03	COG (EIA)	100Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A122J0 H03	COG (EIA)	100Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A152J0 H03	COG (EIA)	100Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB
RCE5C2A152J0 H03	COG (EIA)	100Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RCE5C2A182J1	COG (EIA)	100Vdc	1800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A182J1	COG (EIA)	100Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A222J1	COG (EIA)	100Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A222J1 HO3	COG (EIA)	100Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A272J1	COG (EIA)	100Vdc	2700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A272J1	COG (EIA)	100Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A332J1	COG (EIA)	100Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DB
RCE5C2A332J1	COG (EIA)	100Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1
RCE5C2A392J2 H03	COG (EIA)	100Vdc	3900pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A392J2 H03	COG (EIA)	100Vdc	3900pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A472J2 H03	COG (EIA)	100Vdc	4700pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A472J2 H03	COG (EIA)	100Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A562J2	COG (EIA)	100Vdc	5600pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A562J2	COG (EIA)	100Vdc	5600pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A682J2	COG (EIA)	100Vdc	6800pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A682J2	COG (EIA)	100Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A822J2 HO3	COG (EIA)	100Vdc	8200pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A822J2 HO3	COG (EIA)	100Vdc	8200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2A103J2	COG (EIA)	100Vdc	10000pF±5%	5.5×4.0	3.15	2.5	A2	DB
RCE5C2A103J2	COG (EIA)	100Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E100J2	COG (EIA)	250Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E120J2 H03	COG (EIA)	250Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E150J2 H03	COG (EIA)	250Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E180J2	COG (EIA)	250Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E220J2	COG (EIA)	250Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	250Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	250Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E390J2	COG (EIA)	250Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E470J2	COG (EIA)	250Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E560J2	COG (EIA)	250Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	250Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	250Vdc	82pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	COG (EIA)	250Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E121J2 H03 RCE5C2E151J2 H03	COG (EIA)	250Vdc 250Vdc	120pF±5%	5.5×4.0 5.5×4.0	3.15 3.15	5.0	K1 K1	M1 M1
RCE5C2E181J2 H03	COG (EIA)	250Vdc	150pF±5%	5.5×4.0		5.0	K1 K1	M1
RCE5C2E181J2H03_	COG (EIA) COG (EIA)	250Vdc 250Vdc	180pF±5% 220pF±5%	5.5×4.0	3.15 3.15	5.0	K1 K1	M1
RCE5C2E271J2 H03	COG (EIA) COG (EIA)	250Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1 K1	M1
RCE5C2E331J2 H03	COG (EIA)	250Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E391J2 HO3	COG (EIA)	250Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E471J2 HO3	COG (EIA)	250Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E561J2	COG (EIA)	250Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E681J2 H03	COG (EIA)	250Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E821J2	COG (EIA)	250Vdc	820pF±5%	5.5×4.0	3.15	5.0	К1	M1
RCE5C2E102J2	COG (EIA)	250Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E122J2 HO3	COG (EIA)	250Vdc	1200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E152J2 H03	COG (EIA)	250Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E182J2 H03	COG (EIA)	250Vdc	1800pF±5%	5.5×4.0	3.15	5.0	К1	M1
RCE5C2E222J2 H03	COG (EIA)	250Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E272J2 H03	COG (EIA)	250Vdc	2700pF±5%	5.5×4.0	3.15	5.0	K1	M1
						a 11		

Continued on the following page. earrow
ea



1

Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C2E332J2	COG (EIA)	250Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E392J2	COG (EIA)	250Vdc	3900pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E472J2 H03	COG (EIA)	250Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E562J2 H03	COG (EIA)	250Vdc	5600pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E682J2 H03	COG (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E822J2 H03	COG (EIA)	250Vdc	8200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E103J2 H03	COG (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E123J2 H03	COG (EIA)	250Vdc	12000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2E153J2 H03	COG (EIA)	250Vdc	15000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J100J2 H03	COG (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J120J2 H03	COG (EIA)	630Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J150J2 H03	COG (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J180J2 H03	COG (EIA)	630Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J220J2 H03	COG (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J270J2 H03	COG (EIA)	630Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J330J2 H03	COG (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J390J2	COG (EIA)	630Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J470J2 H03	COG (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J560J2 H03	COG (EIA)	630Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J680J2 H03	COG (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J820J2 H03	COG (EIA)	630Vdc	82pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J101J2 H03	COG (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J121J2 H03	COG (EIA)	630Vdc	120pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J151J2 H03	COG (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J181J2 H03	COG (EIA)	630Vdc	180pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J221J2 H03	COG (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J271J2 H03	COG (EIA)	630Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J331J2 H03	COG (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J391J2 H03	COG (EIA)	630Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J471J2 H03	COG (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J561J2	COG (EIA)	630Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C2J681J2	COG (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	820pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	1200pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	1800pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	COG (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
RCE5C2J272J2 H03 RCE5C2J332J2 H03	COG (EIA) COG (EIA)	630Vdc 630Vdc	2700pF±5% 3300pF±5%	5.5×4.0 5.5×4.0	3.15 3.15	5.0 5.0	K1 K1	M1 M1
RCE5C3A100J2 H03	COG (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1 K1	M1
RCE5C3A120J2 H03	COG (EIA)	1000Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1 K1	M1
RCE5C3A150J2 H03	COG (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1 K1	M1
RCE5C3A180J2 H03	COG (EIA)	1000Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1 K1	M1
RCE5C3A220J2 H03	COG (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A270J2	COG (EIA)	1000Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A330J2	COG (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A390J2	COG (EIA)	1000Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A470J2 H03	COG (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A560J2 H03	COG (EIA)	1000Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A680J2 H03	COG (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A820J2 H03	COG (EIA)	1000Vdc	82pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A101J2 H03	COG (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A121J2 H03	COG (EIA)	1000Vdc	120pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A151J2 H03	COG (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A181J2 H03	COG (EIA)	1000Vdc	180pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A221J2 H03	COG (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1

Continued on the following page. earrow
ea

1



1

Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE5C3A271J2	COG (EIA)	1000Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A331J2	COG (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A391J2	COG (EIA)	1000Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A471J2	COG (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A561J2	COG (EIA)	1000Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A681J2	COG (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A821J2	COG (EIA)	1000Vdc	820pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE5C3A102J2	COG (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2E101J1	U2J (EIA)	250Vdc	100pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E151J1	U2J (EIA)	250Vdc	150pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E221J1 HO3	U2J (EIA)	250Vdc	220pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E331J1	U2J (EIA)	250Vdc	330pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E471J1 H03	U2J (EIA)	250Vdc	470pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E681J1 HO3	U2J (EIA)	250Vdc	680pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E102J1 H03	U2J (EIA)	250Vdc	1000pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E152J1 H03	U2J (EIA)	250Vdc	1500pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E222J1 H03	U2J (EIA)	250Vdc	2200pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E332J1 H03	U2J (EIA)	250Vdc	3300pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E472J1 H03	U2J (EIA)	250Vdc	4700pF±5%	4.0×3.5	3.15	5.0	K1	M1
RCE7U2E682J2 H03	U2J (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2E103J2 H03	U2J (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J100J2 H03	U2J (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J150J2 H03	U2J (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J220J2 H03	U2J (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J330J2 H03	U2J (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J470J2 H03	U2J (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J680J2 H03	U2J (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J101J2 H03	U2J (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J151J2 H03	U2J (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J221J2 H03	U2J (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J331J2 H03	U2J (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J471J2 H03	U2J (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J681J2 H03	U2J (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J102J2 H03	U2J (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J152J2 H03	U2J (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J222J2 H03	U2J (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J332J2 H03	U2J (EIA)	630Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J472J2 H03	U2J (EIA)	630Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U2J682J3 H03	U2J (EIA)	630Vdc	6800pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U2J103J3 H03	U2J (EIA)	630Vdc	10000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U2J153J4 H03	U2J (EIA)	630Vdc	15000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U2J223J4 H03	U2J (EIA)	630Vdc	22000pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U2J333J5	U2J (EIA)	630Vdc	33000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U2J473J5	U2J (EIA)	630Vdc	47000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U2J943JU	U2J (EIA)	630Vdc	94000pF±5%	7.7×13.0	4.0	5.0	B1	E1
RCE7U3A100J2	U2J (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A150J2	U2J (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	U2J (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	U2J (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	U2J (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
	U2J (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0 E.O	K1	M1
RCE7U3A331J2 H03	U2J (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1 M1
RCE7U3A681J2	U2J (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1

Continued on the following page. earrow

muRata

Continued from the preceding page. \searrow

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCE7U3A102J2	U2J (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RCE7U3A152J3 H03	U2J (EIA)	1000Vdc	1500pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U3A222J3 H03	U2J (EIA)	1000Vdc	2200pF±5%	5.5×5.0	4.0	5.0	K1	M1
RCE7U3A332J4 H03	U2J (EIA)	1000Vdc	3300pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U3A472J4 H03	U2J (EIA)	1000Vdc	4700pF±5%	7.5×5.5	4.0	5.0	K1	M1
RCE7U3A682J5	U2J (EIA)	1000Vdc	6800pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U3A103J5	U2J (EIA)	1000Vdc	10000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RCE7U3A203JU H03	U2J (EIA)	1000Vdc	20000pF±5%	7.7×13.0	4.0	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

High Dielectric Constant Type, X7R/X7S Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCER71E104K0 H03	X7R (EIA)	25Vdc	0.1µF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71E104K0 H03	X7R (EIA)	25Vdc	0.1µF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71E154K0 H03	X7R (EIA)	25Vdc	0.15µF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71E154K0 H03	X7R (EIA)	25Vdc	0.15µF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71E224K0 H03	X7R (EIA)	25Vdc	0.22µF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71E224K0 H03	X7R (EIA)	25Vdc	0.22µF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71E334K1 H03	X7R (EIA)	25Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71E334K1 H03	X7R (EIA)	25Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71E474K1 H03	X7R (EIA)	25Vdc	0.47µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71E474K1 H03	X7R (EIA)	25Vdc	0.47µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71E684K1 H03	X7R (EIA)	25Vdc	0.68µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71E684K1 H03	X7R (EIA)	25Vdc	0.68µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71E105K1 H03	X7R (EIA)	25Vdc	1.0µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71E105K1 H03	X7R (EIA)	25Vdc	1.0µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71E155K2 H03	X7R (EIA)	25Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71E155K2 H03	X7R (EIA)	25Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71E225K2 H03	X7R (EIA)	25Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71E225K2 H03	X7R (EIA)	25Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71E335K2 H03	X7R (EIA)	25Vdc	3.3µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71E335K2 H03	X7R (EIA)	25Vdc	3.3µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71E475K2 H03	X7R (EIA)	25Vdc	4.7µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71E475K2 H03	X7R (EIA)	25Vdc	4.7µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71E106K3 H03	X7R (EIA)	25Vdc	10µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCER71E106K3 H03	X7R (EIA)	25Vdc	10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER71E226MW H03	X7R (EIA)	25Vdc	22µF±20%	5.5×7.5	4.0	5.0	K1	M1
RCER71H221K0 H03	X7R (EIA)	50Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H221K0 H03	X7R (EIA)	50Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H331K0 H03	X7R (EIA)	50Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H331K0 H03	X7R (EIA)	50Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H471K0 H03	X7R (EIA)	50Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H471K0 H03	X7R (EIA)	50Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H681K0 H03	X7R (EIA)	50Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H681K0 H03	X7R (EIA)	50Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H102K0 H03	X7R (EIA)	50Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H102K0 H03	X7R (EIA)	50Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H152K0 H03	X7R (EIA)	50Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H152K0 H03	X7R (EIA)	50Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H222K0 H03	X7R (EIA)	50Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H222K0 H03	X7R (EIA)	50Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H332K0 H03	X7R (EIA)	50Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H332K0 H03	X7R (EIA)	50Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H472K0 H03	X7R (EIA)	50Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB

1

Continued from the preceding pa	ge. 🌶							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCER71H472K0 H03	X7R (EIA)	50Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H682K0 H03	X7R (EIA)	50Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H682K0 H03	X7R (EIA)	50Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H103K0 H03	X7R (EIA)	50Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H103K0 H03	X7R (EIA)	50Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H153K0	X7R (EIA)	50Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H153K0 H03	X7R (EIA)	50Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H223K0 H03	X7R (EIA)	50Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H223K0 H03	X7R (EIA)	50Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H333K0 H03	X7R (EIA)	50Vdc	33000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H333K0 H03	X7R (EIA)	50Vdc	33000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H473K0 H03	X7R (EIA)	50Vdc	47000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H473K0 H03	X7R (EIA)	50Vdc	47000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H683K0 H03	X7R (EIA)	50Vdc	68000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H683K0 H03	X7R (EIA)	50Vdc	68000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H104K0 H03	X7R (EIA)	50Vdc	0.10µF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER71H104K0 H03	X7R (EIA)	50Vdc	0.10µF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER71H154K1 H03	X7R (EIA)	50Vdc	0.15µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71H154K1 H03	X7R (EIA)	50Vdc	0.15µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71H224K1 H03	X7R (EIA)	50Vdc	0.22µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71H224K1 H03	X7R (EIA)	50Vdc	0.22µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71H334K1 H03	X7R (EIA)	50Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71H334K1 H03	X7R (EIA)	50Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71H474K1 H03	X7R (EIA)	50Vdc	0.47µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER71H474K1 H03	X7R (EIA)	50Vdc	0.47µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71H684K2 H03	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71H684K2 H03	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCEC71H105K1	X7S (EIA)	50Vdc	1.0µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCEC71H105K1	X7S (EIA)	50Vdc	1.0µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER71H105K2 H03	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71H105K2 H03	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71H155K2 H03	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71H155K2 H03	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71H225K2 H03	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER71H225K2 H03	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71H335K3 H03	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCER71H335K3 H03	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCEC71H475K2 H03	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCEC71H475K2 H03	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER71H475K3 H03	X7R (EIA)	50Vdc	4.7µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCER71H475K3	X7R (EIA)	50Vdc	4.7µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCEC71H106K3	X7S (EIA)	50Vdc	10µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCEC71H106K3 H03	X7S (EIA)	50Vdc	10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER71H106MW H03	X7R (EIA)	50Vdc	10µF±20%	5.5×7.5	4.0	5.0	K1	M1
RCEC71H226MW H03	X7S (EIA)	50Vdc	22µF±20%	5.5×7.5	4.0	5.0	K1	M1
RCER72A221K0 H03	X7R (EIA)	100Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A221K0 H03	X7R (EIA)	100Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A331K0 H03	X7R (EIA)	100Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A331K0 H03	X7R (EIA)	100Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A471K0 H03	X7R (EIA)	100Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB
	X7R (EIA)	100Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1
	X7R (EIA)	100Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB
	X7R (EIA)	100Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1
	X7R (EIA)	100Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB
	X7R (EIA)	100Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1
	X7R (EIA)	100Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB M1
RCER72A152K0 H03	X7R (EIA)	100Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1

Continued on the following page. $earrow \earrow \ea$

muRata

1

Continued from the preceding page. \searrow

Continued from the preceding pa	ıge. 🌶							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A332K0 H03	X7R (EIA)	100Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A332K0 H03	X7R (EIA)	100Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A472K0 H03	X7R (EIA)	100Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A472K0 H03	X7R (EIA)	100Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A153K0 H03	X7R (EIA)	100Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A153K0 H03	X7R (EIA)	100Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A223K0 H03	X7R (EIA)	100Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB
RCER72A223K0 H03	X7R (EIA)	100Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1
RCER72A333K1	X7R (EIA)	100Vdc	33000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A333K1	X7R (EIA)	100Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A473K1	X7R (EIA)	100Vdc	47000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A473K1	X7R (EIA)	100Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A683K1	X7R (EIA)	100Vdc	68000pF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A683K1	X7R (EIA)	100Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A104K1	X7R (EIA)	100Vdc	0.10µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A104K1	X7R (EIA)	100Vdc	0.10µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A154K2	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A154K2	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A224K2	X7R (EIA)	100Vdc	0.22µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A224K2 H03	X7R (EIA)	100Vdc	0.22µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A334K1 H03	X7R (EIA)	100Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RCER72A334K1	X7R (EIA)	100Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RCER72A474K2 H03	X7R (EIA)	100Vdc	0.47µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A474K2 H03	X7R (EIA)	100Vdc	0.47µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A684K2	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A684K2 H03	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72A105K2	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	A2	DB
RCER72A105K2 H03	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RCEC72A155K3	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCEC72A155K3	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCEC72A225K3	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	2.5	A2	DB
RCEC72A225K3	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	5.0	K1	M1
RCEC72A475MW	X7S (EIA)	100Vdc	4.7µF±20%	5.5×7.5	4.0	5.0	K1	M1
RCER72E102K1	X7R (EIA)	250Vdc	1000pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E152K1	X7R (EIA)	250Vdc	1500pF±10%	4.0×3.5	3.15	5.0	K1	M1
RCER72E222K1 H03	X7R (EIA)	250Vdc	2200pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	3300pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	4700pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	6800pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	10000pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	15000pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	22000pF±10%	4.0×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0 E.O	K1	M1
	X7R (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0 E.O	K1	M1
	X7R (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	0.10µF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	0.15µF±10%	5.5×5.0	4.0	5.0	K1	M1
	X7R (EIA)	250Vdc	0.22µF±10%	5.5×5.0	4.0	5.0	K1	M1
	X7R (EIA)	250Vdc 250Vdc	0.33µF±10%	7.5×5.5 7.5×5.5	4.0	5.0	K1	M1
	X7R (EIA)	250Vdc 250Vdc	0.47µF±10%	7.5×5.5 7.5×7.5	4.0	5.0	K1 B1	 E1
RCER72E684K5	X7R (EIA)	230 vuc	0.68µF±10%	1.3×1.5	4.0			

1

🖄 Note 🔹 Please read rating and 🖞 CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
• This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

Continued from the preceding page. \searrow

1

Continued from the preceding pa	ge. 🛚							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RCER72E105K5	X7R (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.0	5.0	B1	E1
RCER72E225MU H03	X7R (EIA)	250Vdc	2.2µF±20%	7.5×12.5	4.0	5.0	B1	E1
RCER72J102K2 H03	X7R (EIA)	630Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J152K2 H03	X7R (EIA)	630Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J222K2 H03	X7R (EIA)	630Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J332K2 H03	X7R (EIA)	630Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J472K2 H03	X7R (EIA)	630Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J682K2 H03	X7R (EIA)	630Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J103K2 H03	X7R (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J153K2 H03	X7R (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J223K2 H03	X7R (EIA)	630Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER72J333K3 H03	X7R (EIA)	630Vdc	33000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72J473K3 H03	X7R (EIA)	630Vdc	47000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER72J683K4 H03	X7R (EIA)	630Vdc	68000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72J104K4 H03	X7R (EIA)	630Vdc	0.10µF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER72J154K5 H03	X7R (EIA)	630Vdc	0.15µF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER72J224K5 H03	X7R (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER72J474MU	X7R (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.0	5.0	B1	E1
RCER73A102K2 H03	X7R (EIA)	1000Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A152K2 H03	X7R (EIA)	1000Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A222K2 H03	X7R (EIA)	1000Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A332K2 H03	X7R (EIA)	1000Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A472K2 H03	X7R (EIA)	1000Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A682K2 H03	X7R (EIA)	1000Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A103K2 H03	X7R (EIA)	1000Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RCER73A153K3 H03	X7R (EIA)	1000Vdc	15000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER73A223K3 H03	X7R (EIA)	1000Vdc	22000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RCER73A333K4 H03	X7R (EIA)	1000Vdc	33000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER73A473K4 H03	X7R (EIA)	1000Vdc	47000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RCER73A683K5	X7R (EIA)	1000Vdc	68000pF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER73A104K5	X7R (EIA)	1000Vdc	0.10µF±10%	7.5×8.0	4.0	5.0	B1	E1
RCER73A224MU	X7R (EIA)	1000Vdc	0.22µF±20%	7.7×13.0	4.0	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code. The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

muRata

1

Temperature Compensating Type Specifications and Test Methods

No.	AEC-Q200) Test Item	Specifications	AEC-Q200 Test Method		
1	1 Pre-and Post-Stress Electrical Test			-		
	High Temperature					
		perature (Storage)	The measured and observed characteristics should satisfy the specifications in the following table.			
		Appearance	No defects or abnormalities			
		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)			
2		Q	30pF ≦ C: Q ≧ 350 10pF ≦ C < 30pF: Q ≧ 275+5C/2 10pF > C: Q ≧ 200+10C	Sit the capacitor for 1000±12h at 150±3°C. Let sit for 24±2h at room condition*, then measure.		
			C: Nominal Capacitance (pF)	_		
		I.R.	More than 1000M Ω or 50M Ω ${\scriptstyle \bullet}$ μF (Whichever is smaller)			
	Temperat Cycling	ure	The measured and observed characteristics should satisfy the specifications in the following table.			
		Appearance	No defects or abnormalities	Perform the 1000 eveloc according to the four best treatments		
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at room condition*, then measure.		
3		Q	30pF ≦ C: Q ≧ 350 10pF ≦ C < 30pF: Q ≧ 275+5C/2 10pF > C: Q ≧ 200+10C	Step 1 2 3 4 Temp. (°C) -55+0/-3 Room Temp. 125+3/-0 Room Temp. Time (min) 15±3 1 15±3 1		
			C: Nominal Capacitance (pF)			
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)			
	Moisture Resistanc	e	The measured and observed characteristics should satisfy the specifications in the following table.	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%) treatment shown below, 10 consecutive times.		
		Appearance	No defects or abnormalities	Let sit for 24±2h at room condition*, then measure.		
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Humidity Humidity Humidity Humidity Humidity Humidity (°C) 90-98% 80-98% 90-98% 80-98% 90-98% 70 65 60 60 60 60 60 60 60 60 60 60		
4		Q	30pF ≦ C: Q ≧ 200 30pF > C: Q ≧ 100+10C/3	55 50 45 40 23 35		
		I.R.	C: Nominal Capacitance (pF) 500MΩ or 25MΩ • μF min. (Whichever is smaller)	a 30 b 25 25 15 15 15 15 15 15 15 15 15 1		
	Biased Hu	umidity	The measured and observed characteristics should satisfy the specifications in the following table.			
		Appearance	No defects or abnormalities			
5		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Apply the rated voltage and DC1.3+0.2/-0V (add $100k\Omega$ resistor) at $85\pm3^{\circ}$ C and 80 to 85% humidity for $1000\pm12h$.		
		Q	30pF ≦ C: Q ≧ 200 30pF > C: Q ≧ 100+10C/3	Remove and let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA.		
			C: Nominal Capacitance (pF)			
		I.R.	500MΩ or 25MΩ • μ F min. (Whichever is smaller)	1		
	Operatior	nal Life	The measured and observed characteristics should satisfy the specifications in the following table.			
		Appearance	No defects or abnormalities	Apply the voltage shown in the table for 1000±12h at 125±3°C.		
		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA.		
6		Q	30pF ≦ C: Q ≧ 350 10pF ≦ C < 30pF: Q ≧ 275+5C/2 10pF > C: Q ≧ 200+10C	Rated VoltageTest VoltageDC50V, DC100V200% of the rated voltageDC250V150% of the rated voltageDC630V, DC1kV120% of the rated voltage		
			C: Nominal Capacitance (pF)			
		I.R.	1000M\Omega or 50MQ ${\scriptstyle \bullet}\mu F$ min. (Whichever is smaller)			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

muRata

17

Temperature Compensating Type Specifications and Test Methods

Continued from the preceding page. \searrow

1

No.	lo. AEC-Q200 Test Iten		Specifications	AEC-Q200 Test Method			
7	External \		No defects or abnormalities	Visual inspection			
8	Physical D		Within the specified dimensions	Using calipers and micrometers			
9	Marking		To be easily legible	Visual inspection			
	- number	Appearance	No defects or abnormalities				
		Capacitance	Within the specified tolerance	Per MIL-STD-202 Method 215 Solvent 1: 1 part (by volume) of isopropyl alcohol			
10	Resistance	Q	30pF ≦ C: Q ≧ 1000	3 parts (by volume) of mineral spirits Solvent 2: Terpene defluxer			
10	to Solvents		30pF > C: Q ≧ 400+20C	Solvent 3: 42 parts (by volume) of water 1 part (by volume) of propylene glycol			
			C: Nominal Capacitance (pF)	monomethyl ether 1 part (by volume) of monoethanolamine			
		I.R.	More than $10000M\Omega$ or $500M\Omega \cdot \mu F$ (Whichever is smaller) No defects or abnormalities				
		Appearance		Three shocks in each direction should be applied along			
	Mechanical	Capacitance	Within the specified tolerance	3 mutually perpendicular axes of the test specimen (18 shocks).			
11	Shock	Q	30pF ≤ C : Q ≥ 1000 30pF > C : Q ≥ 400+20C	The specified test pulse should be Half-sine and should have a duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s.			
			C : Nominal Capacitance (pF)	- 4 .711/5.			
		Appearance	No defects or abnormalities	The capacitor should be subjected to a simple harmonic motion			
		Capacitance	Within the specified tolerance	having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 2000Hz.			
12	Vibration		30pF ≦ C: Q ≧ 1000 30pF > C: Q ≧ 400+20C	The frequency range, from 10 to 2000Hz and return to 10Hz, should be traversed in approximately 20min. This motion			
		Q	C: Nominal Capacitance (pF)	should be applied for 12 items in each 3 mutually perpendicular directions (total of 36 times).			
	Resistance	to	The measured and observed characteristics should satisfy the				
	Soldering H	leat	specifications in the following table.	_			
10	(Non-Preheat)	Appearance	No defects or abnormalities	The lead wires should be immersed in the melted solder 1.5 to			
13 ' 1		Capacitance Change	Within $\pm 2.5\%$ or $\pm 0.25pF$ (Whichever is larger)	2.0mm from the root of terminal at 260±5°C for 10±1s. Post-treatment			
		Dielectric Strength (Between Terminals)	No defects	Capacitor should be stored for 24±2h at room condition*.			
	Resistance to Soldering Heat		The measured and observed characteristics should satisfy the specifications in the following table.				
	(On-Preheat)	Appearance	No defects or abnormalities	First the capacitor should be stored at 120+0/-5°C for 60+0/-5s.			
13		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Then, the lead wires should be immersed in the melted solder 1 to 2.0mm from the root of terminal at 260±5°C for 7.5+0/-1s.			
2		Dielectric Strength (Between Terminals)	No defects	 Post-treatment Capacitor should be stored for 24±2h at room condition*. 			
	Resistance Soldering H		The measured and observed characteristics should satisfy the specifications in the following table.	Test condition			
	(soldering	Appearance	No defects or abnormalities	Temperature of iron-tip: 350±10°C			
13	iron method)	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Soldering time: 3.5±0.5s Soldering position Straight Lead: 1 5 to 2 0mm from the root of terminal			
3		Dielectric Strength (Between Terminals)	No defects	Straight Lead: 1.5 to 2.0mm from the root of terminal. Crimp Lead: 1.5 to 2.0mm from the end of lead bend. Post-treatment Capacitor should be stored for 24±2h at room condition*.			
	Thermal S	ihock	The measured and observed characteristics should satisfy the specifications in the following table.				
	[Appearance	No defects or abnormalities				
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20s). Let sit for 24±2h at room condition*, then measure.			
14			30pF ≦ C: Q ≧ 350	Step 1 2			
		Q	10pF ≤ C < 30p: Q ≥ 275+5C/2 10pF > C: Q ≥ 200+10C	Step 1 2 Temp. (°C) -55+0/-3 125+3/-0 Time (min) 15±3 15±3			
			C: Nominal Capacitance (pF)	_			
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)				

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa



1

Temperature Compensating Type Specifications and Test Methods

Continued from the preceding page. \checkmark

No.	AEC-Q200) Test Item	Specifi	cations	AEC-Q200 Test Method
		Appearance	No defects or abnormalities		
		Capacitance	Within the specified tolerance		
15	ESD	Q	30pF ≦ C: Q ≧ 1000 30pF > C: Q ≧ 400+20C		Per AEC-Q200-002
			C: Nominal Capacitance (pF)		
		I.R.	More than 10000M Ω or 500M Ω	• μF (Whichever is smaller)	
16	Solderabi	lity	Lead wire should be soldered w direction over 95% of the circur		Should be placed into steam aging for 8h±15min. The terminal of capacitor is dipped into a solution of ethanol (JIS K 8101) and rosin (JIS K 5902) (25% rosin in weight propotion). Immerse in solder solution for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body.
		Appearance	No defects or abnormalities		Visual inspection
		Capacitance	Within the specified tolerance		The capacitance, Q should be measured at 25°C at the
		Q	30pF ≦ C: Q ≧ 1000 30pF > C: Q ≧ 400+20C		Image: frequency and voltage shown in the table. Nominal Cap. Frequency Voltage C ≤ 1000pF 1±0.1MHz AC0.5 to 5V (r.m.s.)
			C: Nominal Capacitance (pF)		C > 1000pF 1±0.1kHz AC1±0.2V (r.m.s.)
		I.R.	Between Terminals	10000MΩ or 500MΩ • μF min. (Whichever is smaller)	The insulation resistance should be measured with a DC voltage shown in the table at 25°C within 2min of charging. Rated Voltage Measuring Voltage DC25V, DC50V, DC100V, DC250V Rated Voltage DC630V, DC1kV DC500V
17	Electrical Charac- terization	-	Between Terminals	No defects or abnormalities	The capacitor should not be damaged when DC voltage shown in the table is applied between the terminations for 1 to 5s. (Charge/Discharge current ≤ 50mA.) Rated Voltage DC50V, DC100V 300% of the rated voltage DC250V 200% of the rated voltage DC630V 150% of the rated voltage DC1kV 130% of the rated voltage
		Strength		No defects or abnormalities	The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuit is kept approximately 2mm from the balls, and DC voltage shown in the table is impressed for 1 to 5s between capacitor terminals and metal balls. (Charge/Discharge current ≤ 50mA.) Rated Voltage DC25V, DC50V, DC100V 250% of the rated voltage DC250V 200% of the rated voltage DC630V, DC1kV DC1300V
18	Terminal Strength	Tensile Strength	Lermination not to be broken or loosened		As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for 10±1s.
		Bending Strength	Termination not to be broken o	loosened	Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3s.

Continued on the following page. earrow

Temperature Compensating Type Specifications and Test Methods

Continued from the preceding page. \checkmark

1

No	AEC-Q200 Test Item	Specifications			AEC-Q200 Test Method			
No.	Capacitance	Char. COG U2J	Temperature Coefficient 25 to 125°C: 0±30ppm/°C -55 to 25°C: 0+30/-72ppm/°C 25 to 125°C: -750±120ppm/°C -55 to 25°C: -750+120/-347ppm/°C		AEC-Q200 The capacitance change should each specified temperature ste <u>Step</u> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> The temperature coefficient is of capacitance measured in step 3 the temperature sequentially fr +125°C) the capacitance should tolerance for the temperature of	l be measured after 5min at p. Temperature (°C) 25±2 -55±3 25±2 125±3 25±2 determind using the 8 as a reference. When cycling rom step 1 through 5 (-55 to d be within the specified		
					The capacitance drift is caluculated by dividing the differences betweeen the maximum and minimum measured values in the step 1, 3 and 5 by the capacitance value in step 3.			

20

High Dielectric Constant Type Specifications and Test Methods

No.	AEC-Q200) Test Item	Specifications	AEC-Q200 Test Method			
1	Pre-and P Electrical	ost-Stress Test		-			
	High Tem Exposure	perature (Storage)	The measured and observed characteristics should satisfy the specifications in the following table.				
		Appearance	No defects or abnormalities	Sit the capacitor for 1000±12h at 150±3°C. Let sit for 24±2h			
2		Capacitance Change	Within ±12.5%	 at room condition*, then measure. •Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5min 			
		D.F.	0.04 max.	and then let sit for 24±2h at room condition*.			
		I.R.	More than 1000MΩ or 50MΩ ${\scriptstyle \bullet}$ μF (Whichever is smaller)	-			
	Temperat Cycling	ure	The measured and observed characteristics should satisfy the specifications in the following table.	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at room condition*,			
		Appearance	No defects or abnormalities	then measure.			
3		Capacitance Change	Within ±12.5%	Step 1 2 3 4 Temp. (°C) -55+0/-3 Room Temp. 125+3/-0 Room Temp. Time (min) 15±3 1 15±3 1			
		D.F.	0.05 max.	Pretreatment			
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)	Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at room condition*.			
	Moisture Resistanc	e	The measured and observed characteristics should satisfy the specifications in the following table.	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%) treatment shown below, 10 consecutive times.			
		Appearance	No defects or abnormalities	Let sit for 24±2h at room condition*, then measure. •Pretreatment			
		Capacitance Change	Within ±12.5%	Perform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at room condition*.			
		D.F.	0.05 max.	Humidity Humidity Humidity Humidity Humidity (°C) 90-98% 80-98% 90-98% 80-98% 90-98%			
4		I.R.	500MΩ or 25MΩ • µF min. (Whichever is smaller)	70 60 60 60 60 60 60 60 60 60 6			
	Biased Hu	umidity	The measured and observed characteristics should satisfy the specifications in the following table.	Apply the rated voltage and DC1.3+0.2/-0V (add 100k Ω resistor)			
		Appearance	No defects or abnormalities	at 85±3°C and 80 to 85% humidity for 1000±12h. Remove and let sit for 24±2h at room condition*, then measure.			
5		Capacitance Change	Within ±12.5%	The charge/discharge current is less than 50mA. •Pretreatment			
		D.F.	0.05 max.	Perform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at room condition*.			
		I.R.	500MΩ or 25MΩ • μF min. (Whichever is smaller)				

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

High Dielectric Constant Type Specifications and Test Methods

Continued from the preceding page. \searrow

1

No.	AEC-Q200	Test Item	Specifications	AEC-Q200) Test Method		
	Operation	al Life Appearance	The measured and observed characteristics should satisfy the specifications in the following table. No defects or abnormalities	Apply the voltage shown in the table for 1000±12h at 125±3°C. Let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA.			
6		Capacitance Change	Within ±12.5%	 •Pretreatment Apply test voltage for 60±5m Remove and let sit for 24±2h 	•		
Ŭ		D.F.	0.04 max.	Rated Voltage	Test Voltage		
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)	DC25V, DC50V, DC100V DC250V DC630V DC1kV	200% of the rated voltage *1150% of the rated voltage120% of the rated voltage110% of the rated voltage		
7	External \	/isual	No defects or abnormalities	Visual inspection			
8	Physical D	imension	Within the specified dimensions	Using calipers and micrometer	'S		
9	Marking		To be easily legible	Visual inspection			
		Appearance	No defects or abnormalities	Per MIL-STD-202 Method 215			
		Capacitance	Within the specified tolerance	Solvent 1: 1 part (by volume)	of isopropyl alcohol		
	Resistance	D.F.	0.025 max.	- 3 parts (by volume Solvent 2: Terpene defluxer	e) of mineral spirits		
10	to Solvents	I.R.	Rated Voltage: DC25V, DC50V, DC100V More than 10000MΩ or 500MΩ • μF (Whichever is smaller) Rated Voltage: DC250V, DC500V, DC630V, DC1kV More than 10000MΩ or 100MΩ • μF (Whichever is smaller)	Solvent 2: Terpene defluxer Solvent 3: 42 parts (by volume) of water 1 part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine			
		Appearance	No defects or abnormalities	Three shocks in each direction should be applied along 3 mutually perpendicular axes of the test specimen (18 shocks). The specified test pulse should be Half-sine and should have a duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s.			
11	Mechanical	Capacitance	Within the specified tolerance				
11	Shock	D.F.	0.025 max.				
		Appearance	No defects or abnormalities	The capacitor should be subjected to a simple harmonic moti			
		Capacitance	Within the specified tolerance	having a total amplitude of 1.5mm, the frequency being v uniformly between the approximate limits of 10 and 2000			
12	Vibration	D.F.	0.025 max.	The frequency range, from 10	to 2000Hz and return to 10Hz, mately 20min. This motion should		
	Resistance Soldering H		The measured and observed characteristics should satisfy the specifications in the following table.	- The lead wires should be immersed in the melted solder 1.5 to			
	(Non-Preheat)	Appearance	No defects or abnormalities	2.0mm from the root of termin			
13 ' 1		Capacitance Change	Within ±7.5%		t 150+0/-10°C for 1h, then place		
T		Dielectric Strength (Between Terminals)	No defects	at room temperature for 24±2h before initial measurement. Post-treatment Capacitor should be stored for 24±2h at room condition*.			
	Resistance Soldering H		The measured and observed characteristics should satisfy the specifications in the following table.	First the capacitor should be s	tored at 120+0/-5°C for 60+0/-5s.		
	(On-Preheat)	Appearance	No defects or abnormalities		immersed in the melted solder 1.5 minal at 260±5°C for 7.5+0/-1s.		
13 '		Capacitance Change	Within ±7.5%	Pre-treatment	150+0/-10°C for 1h, then place at		
2		Dielectric Strength (Between Terminals)	No defects	room temperature for 24±2h Post-treatment Capacitor should be stored fo			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

*1: below parts are applicable in rated voltage×150%.

Char.	Rated Voltage	Capacitance	Dimensions	
C7	1H	105	1	
C7	1H	475	2	
C7	1H	106	3	
C7	1H	226	W	
R7	2A	334	1	
R7	2A	474-105	2	
C7	2A	155-225	3	
C7	2A	475	W	

Continued on the following page. earrow

muRata

1

High Dielectric Constant Type Specifications and Test Methods

Continued from the preceding page. \searrow

No.	AEC-Q200) Test Item		Specifications	AEC-Q200 Test Method			
	Resistance Soldering H		The measured and ob specifications in the fe	served characteristics should satisfy the ollowing table.	Test condition Temperature of iron-tip: 350±10	0°C		
	(Soldering	Appearance	No defects or abnorm	alities	Soldering time: 3.5±0.5s. Soldering position			
13	Iron Method) Capacitance Change		Within ±7.5%		Straight Lead: 1.5 to 2.0mm from Crimp Lead: 1.5 to 2.0mm from t			
3		Dielectric Strength (Between Terminals)	No defects		Pre-treatment Capacitor should be stored at 15 at room temperature for 24±2h Post-treatment Capacitor should be stored for 2	before initial measurement.		
	Thermal S	Shock	The measured and ob specifications in the fe	served characteristics should satisfy the ollowing table.	Perform the 300 cycles according listed in the following table (Maxi	mum transfer time is 20s).		
		Appearance	No defects or abnorm	alities	Let sit for 24±2h at room conditio	on*, then measure.		
14		Capacitance Change	Within ±12.5%		Step 1 Temp. (°C) -55+0/-3 Time (min) 15+2	2 125+3/-0		
		D.F.	0.05 max.		Time (min) 15±3	15±3		
		I.R.	1000MΩ or 50MΩ • μ	F min. (Whichever is smaller)	 Pretreatment Perform the heat treatment at 2 and then let sit for 24±2h at roo 			
		Appearance	No defects or abnorm	alities				
		Capacitance	Within the specified t	olerance				
		D.F.	0.025 max.					
15	ESD	I.R.	Rated Voltage: DC25	V, DC50V, DC100V or 500MΩ • μF (Whichever is smaller) DV, DC500V, DC630V, DC1kV or 100MΩ • μF (Whichever is smaller)	- Per AEC-Q200-002			
16	5 Solderability			oldered with uniform coating on the axial the circumferential direction.	Should be placed into steam aging for 8h±15min. The terminal of capacitor is dipped into a solution of ethanol (JIS K 8101) and rosin (JIS K 5902) (25% rosin in weight propotion). Immerse in solder solution for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body.			
		Appearance	No defects or abnorm	alities	Visual inspection			
		Capacitance	Within the specified t	olerance	The capacitance/D.F. should be n			
		D.F.	0.025 max.		$\label{eq:started} \begin{array}{ c c c } \hline frequency and voltage shown in the table. \\ \hline \hline Nominal Cap. & Frequency & Voltage \\ \hline C \leq 10 \mu F & 1 \pm 0.1 \text{kHz} & AC1.0 \pm 0.2 \text{V} (r.m.s.) \\ \hline C > 10 \mu F & 120 \pm 24 \text{kHz} & AC0.5 \pm 0.1 \text{V} (r.m.s.) \\ \hline \end{array}$			
		I.R.	Between Terminals	Rated Voltage: DC25V, DC50V, DC100V More than 10000MΩ or 500MΩ • μF (Whichever is smaller) Rated Voltage: DC250V, DC500V, DC630V, DC1kV More than 10000MΩ or 100MΩ • μF (Whichever is smaller)	The insulation resistance should be voltage shown in the table at 25° of charging. Rated Voltage DC25V, DC50V, DC100V, DC25 DC630V, DC1kV	C within 2min Measuring Voltage		
17	Electrical Charac- terization	Dielectric	Between Terminals	No defects or abnormalities	DC250V 2 DC630V 1	veen the terminations		
		Strength	Body Insulation	No defects or abnormalities	DC250V 2	hort-circuit is kept ls, and 250% of the rated DC ressed for 1 to 5s between lls.		

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa



High Dielectric Constant Type Specifications and Test Methods

Continued from the preceding page. \searrow

1

No	AEC-Q200) Test Item	Specifications	AEC-Q200 Test Method		
18	Terminal	Tensile Strength	Termination not to be broken or loosened	As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for $10\pm1s$.		
		Bending Strength	Termination not to be broken or loosened	Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3s.		
	Capacitance 19 Temperature Characteristics			The capacitance change should be measured after 5min at each specified temperature step.		
19			Char. X7R: Within ±15% Char. X7S: Within ±22%	StepTemperature (°C)125±22-55±3325±24125±3525±2The ranges of capacitance change compared with the above25°C value over the temperature ranges shown in the table should be within the specified ranges.•PretreatmentPerform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at room condition*.Perform the initial measurement.		

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

muRata

T max

ød: 0.5±0.05

(in mm)

W may Ň

25.0

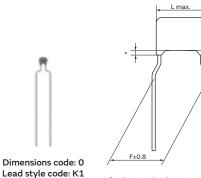
2

150°C Operation Leaded MLCC for Automotive

RHE Series (DC25V-DC100V)

Features

- 1. Small size and large capacitance
- 2. Low ESR and ESL suitable for high frequency
- 3. Applied maximum temperature up to 150°C Note: Maximum accumulative time to 150°C
- is within 2000 hours.
- 4. Meet AEC-Q200, ISO7637-2 (surge test) requirement
- 5. Meet LF (Lead Free) and HF (Halogen Free)
- 6. Flow soldering and welding are available. (Re-flow soldering is not available.)
- 7. If copper wire is necessary at welding process, copper wire is available based on request.



Coating extension does not exceed the end of the lead bend. Lead Wire: Solder Coated CP Wire

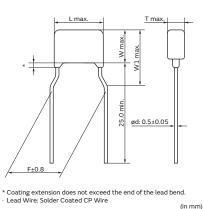


Dimensions code: 1

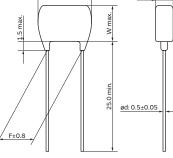
Lead style code: K1

Τm W max W1 ød: 0.5±0.05 F±0.8

* Coating extension does not exceed the end of the lead bend • Lead Wire: Solder Coated CP Wire (in mm)



Dimensions code: 2 Lead style code: K1

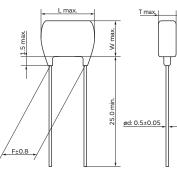


Dimensions code: 2 Lead style code: A2

Lead Wire: Solder Coated CP Wire





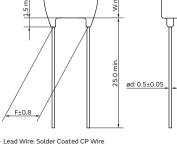


Lead Wire: Solder Coated CP Wire

(in mm)

Continued on the following page. 🎢

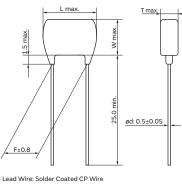
Dimensions code: 0 Lead style code: A2



L max

T max.





Lead style code: A2

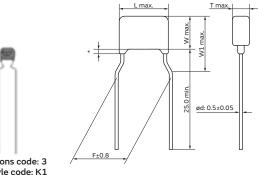
T max

(in mm)

(in mm)



Continued from the preceding page. ightarrow



Dimensions code: 3 Lead style code: K1

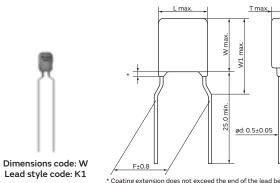
* Coating extension does not exceed the end of the lead bend. • Lead Wire: Solder Coated CP Wire (in mm)

Dimensions

Dimensions and	Dimensions (mm)							
Lead Style Code	L	w	W1	т	F	d		
0A2/0DB	3.6	3.5	-		2.5	0.5		
0K1/0M1	3.6	3.5	6.0		5.0	0.5		
1A2/1DB	4.0	3.5	-		2.5	0.5		
1K1/1M1	4.0	3.5	5.0		5.0	0.5		
2A2/2DB	5.5	4.0	-	See the individual product specification	2.5	0.5		
2K1/2M1	5.5	4.0	6.0	produce specification	5.0	0.5		
3A2/3DB	5.5	5.0	-		2.5	0.5		
3K1/3M1	5.5	5.0	7.5		5.0	0.5		
WK1/WM1	5.5	7.5	10.0		5.0	0.5		

Marking

Туре	Temperature Compensating Type	High Dielectric	Constant Type			
Rated Voltage	DC50V, DC100V	DC25V, DC50V	DC100V			
Dimensions Code Temp. Char.	X8G	X	8L			
0		8	8			
1						
2	-	(H 105 K58	(CH 224 (K18)			
3, W	_	(M 335) K58	_			
Temperature Characteristics	Marked with code (X8G, X8L cha	Marked with code (X8G, X8L char.: 8)				
Nominal Capacitance	Marked with 3 figures	Marked with 3 figures				
Capacitance Tolerance	Marked with code	Marked with code				
Rated Voltage		Marked with code (DC25V: 2, DC50V: 5, DC100V: 1) A part is omitted (Please refer to the marking example.)				
Manufacturer's Identification	Marked with ${\mathbb M}$ A part is omitted (Please refer to the marking example.)					



Coating extension does not exceed the end of the lead bend. Lead Wire: Solder Coated CP Wire (in mm)

muRata

2

Temperature Compensating Type, X8G Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHE5G1H101J0 H03	X8G (Murata)	50Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H101J0 H03	X8G (Murata)	50Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H121J0 H03	X8G (Murata)	50Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H121J0 H03	X8G (Murata)	50Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H151J0 H03	X8G (Murata)	50Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H151J0 H03	X8G (Murata)	50Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H181J0 H03	X8G (Murata)	50Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H181J0 H03	X8G (Murata)	50Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H221J0 H03	X8G (Murata)	50Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H221J0 H03	X8G (Murata)	50Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H271J0 H03	X8G (Murata)	50Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H271J0 H03	X8G (Murata)	50Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H331J0 H03	X8G (Murata)	50Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H331J0 H03	X8G (Murata)	50Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H391J0 H03	X8G (Murata)	50Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H391J0 H03	X8G (Murata)	50Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H471J0 H03	X8G (Murata)	50Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H471J0 H03	X8G (Murata)	50Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H561J0 H03	X8G (Murata)	50Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H561J0 H03	X8G (Murata)	50Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H681J0 H03	X8G (Murata)	50Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H681J0 H03	X8G (Murata)	50Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H821J0 H03	X8G (Murata)	50Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H821J0 H03	X8G (Murata)	50Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H102J0 H03	X8G (Murata)	50Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H102J0 H03	X8G (Murata)	50Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H122J0 H03	X8G (Murata)	50Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H122J0 H03	X8G (Murata)	50Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H152J0 H03	X8G (Murata)	50Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H152J0 H03	X8G (Murata)	50Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H182J0 H03	X8G (Murata)	50Vdc	1800pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H182J0 H03	X8G (Murata)	50Vdc	1800pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H222J0 H03	X8G (Murata)	50Vdc	2200pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H222J0 H03	X8G (Murata)	50Vdc	2200pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H272J0 H03	X8G (Murata)	50Vdc	2700pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H272J0 H03	X8G (Murata)	50Vdc	2700pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H332J0 H03	X8G (Murata)	50Vdc	3300pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H332J0 H03	X8G (Murata)	50Vdc	3300pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H392J0 H03	X8G (Murata)	50Vdc	3900pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G1H392J0 H03	X8G (Murata)	50Vdc	3900pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G1H472J1 H03	X8G (Murata)	50Vdc	4700pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H472J1 H03	X8G (Murata)	50Vdc	4700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H562J1 H03	X8G (Murata)	50Vdc	5600pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H562J1 H03	X8G (Murata)	50Vdc	5600pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H682J1 H03	X8G (Murata)	50Vdc	6800pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H682J1 H03	X8G (Murata)	50Vdc	6800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H822J1 H03	X8G (Murata)	50Vdc	8200pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H822J1 H03	X8G (Murata)	50Vdc	8200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RHE5G1H103J1	X8G (Murata)	50Vdc	10000pF±5%	4.0×3.5	2.5	2.5	A2	DB
RHE5G1H103J1	X8G (Murata)	50Vdc	10000pF±5%	4.0×3.5	2.5	5.0	K1	M1
	X8G (Murata)	100Vdc	100pF±5%	3.6×3.5	2.5	2.5	A2	DB
RHE5G2A101J0	X8G (Murata)	100Vdc	100pF±5%	3.6×3.5	2.5	5.0	K1	M1
	X8G (Murata)	100Vdc	120pF±5%	3.6×3.5	2.5	2.5	A2	DB
	X8G (Murata)	100Vdc	120pF±5%	3.6×3.5	2.5	5.0	K1	M1
RHE5G2A151J0	X8G (Murata)	100Vdc	150pF±5%	3.6×3.5	2.5	2.5	A2	DB

Continued from the preceding page. \searrow

Continued from the preceding page. 🎽										
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping		
RHE5G2A151J0	X8G (Murata)	100Vdc	150pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A181J0	X8G (Murata)	100Vdc	180pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A181J0 H03	X8G (Murata)	100Vdc	180pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A221J0 H03	X8G (Murata)	100Vdc	220pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A221J0 H03	X8G (Murata)	100Vdc	220pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A271J0	X8G (Murata)	100Vdc	270pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A271J0	X8G (Murata)	100Vdc	270pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A331J0 H03	X8G (Murata)	100Vdc	330pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A331J0	X8G (Murata)	100Vdc	330pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A391J0	X8G (Murata)	100Vdc	390pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A391J0 H03	X8G (Murata)	100Vdc	390pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A471J0 H03	X8G (Murata)	100Vdc	470pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A471J0 H03	X8G (Murata)	100Vdc	470pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A561J0 H03	X8G (Murata)	100Vdc	560pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A561J0 H03	X8G (Murata)	100Vdc	560pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A681J0 H03	X8G (Murata)	100Vdc	680pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A681J0 H03	X8G (Murata)	100Vdc	680pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A821J0 H03	X8G (Murata)	100Vdc	820pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A821J0 H03	X8G (Murata)	100Vdc	820pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A102J0 H03	X8G (Murata)	100Vdc	1000pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A102J0 H03	X8G (Murata)	100Vdc	1000pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A122J0 H03	X8G (Murata)	100Vdc	1200pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A122J0 H03	X8G (Murata)	100Vdc	1200pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A152J0	X8G (Murata)	100Vdc	1500pF±5%	3.6×3.5	2.5	2.5	A2	DB		
RHE5G2A152J0 H03	X8G (Murata)	100Vdc	1500pF±5%	3.6×3.5	2.5	5.0	K1	M1		
RHE5G2A182J1 H03	X8G (Murata)	100Vdc	1800pF±5%	4.0×3.5	2.5	2.5	A2	DB		
RHE5G2A182J1 H03	X8G (Murata)	100Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RHE5G2A222J1 H03	X8G (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DB		
RHE5G2A222J1 H03	X8G (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RHE5G2A272J1	X8G (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	2.5	A2	DB		
RHE5G2A272J1 H03	X8G (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RHE5G2A332J1 H03	X8G (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DB		
RHE5G2A332J1	X8G (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1		

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

High Dielectric Constant Type, X8L Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHEL81E104K0 H03	X8L (Murata)	25Vdc	0.1µF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81E104K0	X8L (Murata)	25Vdc	0.1µF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81E154K0 H03	X8L (Murata)	25Vdc	0.15µF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81E154K0	X8L (Murata)	25Vdc	0.15µF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81E224K0	X8L (Murata)	25Vdc	0.22µF±10%	3.6×3.5	2.5	2.5	A2	DB
RHEL81E224K0 H03	X8L (Murata)	25Vdc	0.22µF±10%	3.6×3.5	2.5	5.0	K1	M1
RHEL81E334K1 H03	X8L (Murata)	25Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81E334K1 H03	X8L (Murata)	25Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81E474K1	X8L (Murata)	25Vdc	0.47µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81E474K1 H03	X8L (Murata)	25Vdc	0.47µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81E684K1 H03	X8L (Murata)	25Vdc	0.68µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81E684K1 H03	X8L (Murata)	25Vdc	0.68µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81E105K1 H03	X8L (Murata)	25Vdc	1.0µF±10%	4.0×3.5	2.5	2.5	A2	DB
RHEL81E105K1	X8L (Murata)	25Vdc	1.0µF±10%	4.0×3.5	2.5	5.0	K1	M1
RHEL81E155K2 H03	X8L (Murata)	25Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	A2	DB
RHEL81E155K2 H03	X8L (Murata)	25Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1
RHEL81E225K2 HO3	X8L (Murata)	25Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	A2	DB

Continued from the preceding page. 🌶										
Part Number	Temp.	Rated	Capacitance	Dimensions LxW	Dimension T	Lead Space F	Lead Style Code	Lead Style Code		
	Char.	Voltage 25Vdc	2.205.10%	(mm)	(mm)	(mm)	Bulk	Taping M1		
RHEL81E225K2 H03 RHEL81E335K2 H03	X8L (Murata) X8L (Murata)	25Vdc 25Vdc	2.2µF±10% 3.3µF±10%	5.5×4.0 5.5×4.0	3.15 3.15	5.0 2.5	K1 A2	DB		
RHEL81E335K2 H03	X8L (Murata)	25Vdc	3.3µF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81E475K2 H03	X8L (Murata)	25Vdc	4.7μF±10%	5.5×4.0	3.15	2.5	A2	DB		
RHEL81E475K2 H03	X8L (Murata)	25Vdc	4.7μF±10% 4.7μF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81E106K3 H03	X8L (Murata)	25Vdc	10µF±10%	5.5×5.0	4.0	2.5	A2	DB		
RHEL81E106K3 H03	X8L (Murata)	25Vdc	10µF±10%	5.5×5.0	4.0	5.0	K1	M1		
RHEL81E226MW H03	X8L (Murata)	25Vdc	22µF±20%	5.5×7.5	4.0	5.0	K1 K1	M1		
RHEL81H221K0_H03	X8L (Murata)	50Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H221K0 H03	X8L (Murata)	50Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H331K0 H03	X8L (Murata)	50Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H331K0 H03	X8L (Murata)	50Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H471K0 H03	X8L (Murata)	50Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H471K0 H03	X8L (Murata)	50Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H681K0 H03	X8L (Murata)	50Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H681K0	X8L (Murata)	50Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H102K0 H03	X8L (Murata)	50Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H102K0 H03	X8L (Murata)	50Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H152K0 H03	X8L (Murata)	50Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H152K0 H03	X8L (Murata)	50Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H222K0 H03	X8L (Murata)	50Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H222K0 H03	X8L (Murata)	50Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H332K0 H03	X8L (Murata)	50Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H332K0 H03	X8L (Murata)	50Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H472K0 H03	X8L (Murata)	50Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H472K0 H03	X8L (Murata)	50Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H682K0 H03	X8L (Murata)	50Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H682K0 H03	X8L (Murata)	50Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H103K0 H03	X8L (Murata)	50Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H103K0 H03	X8L (Murata)	50Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H153K0	X8L (Murata)	50Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H153K0 H03	X8L (Murata)	50Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1		
	X8L (Murata)	50Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H223K0 H03	X8L (Murata)	50Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H333K0 H03	X8L (Murata)	50Vdc	33000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
	X8L (Murata)	50Vdc	33000pF±10%	3.6×3.5	2.5	5.0	K1	M1		
	X8L (Murata)	50Vdc	47000pF±10%	3.6×3.5	2.5	2.5	A2	DB		
	X8L (Murata)	50Vdc 50Vdc	47000pF±10% 68000pF±10%	3.6×3.5	2.5 2.5	5.0 2.5	K1 A2	M1 DB		
RHEL81H683K0 H03 RHEL81H683K0 H03	X8L (Murata) X8L (Murata)	50Vdc	68000pF±10%	3.6×3.5 3.6×3.5	2.5	5.0	K1	M1		
RHEL81H104K0 H03	X8L (Murata)	50Vdc	0.10µF±10%	3.6×3.5	2.5	2.5	A2	DB		
RHEL81H104K0H03_	X8L (Murata)	50Vdc	0.10µF±10%	3.6×3.5	2.5	5.0	K1	M1		
RHEL81H154K1	X8L (Murata)	50Vdc	0.15µF±10%	4.0×3.5	2.5	2.5	A2	DB		
RHEL81H154K1	X8L (Murata)	50Vdc	0.15µF±10%	4.0×3.5	2.5	5.0	K1	M1		
RHEL81H224K1	X8L (Murata)	50Vdc	0.22µF±10%	4.0×3.5	2.5	2.5	A2	DB		
RHEL81H224K1	X8L (Murata)	50Vdc	0.22µF±10%	4.0×3.5	2.5	5.0	K1	M1		
RHEL81H334K1	X8L (Murata)	50Vdc	0.33µF±10%	4.0×3.5	2.5	2.5	A2	DB		
RHEL81H334K1 H03	X8L (Murata)	50Vdc	0.33µF±10%	4.0×3.5	2.5	5.0	K1	M1		
RHEL81H474K2 H03	X8L (Murata)	50Vdc	0.47µF±10%	5.5×4.0	3.15	2.5	A2	DB		
RHEL81H474K2 H03	X8L (Murata)	50Vdc	0.47µF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81H684K2 H03	X8L (Murata)	50Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	A2	DB		
RHEL81H684K2 H03	X8L (Murata)	50Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81H105K2 H03	X8L (Murata)	50Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	A2	DB		
RHEL81H105K2 H03	X8L (Murata)	50Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81H155K2 H03	X8L (Murata)	50Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	A2	DB		
RHEL81H155K2 H03	X8L (Murata)	50Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1		
RHEL81H225K2 H03	X8L (Murata)	50Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	A2	DB		
						0 1				

2

29



2

		May 10,2018
	_	_

Continued from the preceding page. 🖌											
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping			
RHEL81H225K2 H03	X8L (Murata)	50Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1			
RHEL81H335K3 H03	X8L (Murata)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	A2	DB			
RHEL81H335K3 H03	X8L (Murata)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1			
RHEL81H475K3 H03	X8L (Murata)	50Vdc	4.7µF±10%	5.5×5.0	4.0	2.5	A2	DB			
RHEL81H475K3 H03	X8L (Murata)	50Vdc	4.7µF±10%	5.5×5.0	4.0	5.0	K1	M1			
RHEL81H106MW H03	X8L (Murata)	50Vdc	10µF±20%	5.5×7.5	4.0	5.0	K1	M1			
RHEL82A221K0 H03	X8L (Murata)	100Vdc	220pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A221K0 H03	X8L (Murata)	100Vdc	220pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A331K0 H03	X8L (Murata)	100Vdc	330pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A331K0 H03	X8L (Murata)	100Vdc	330pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A471K0 H03	X8L (Murata)	100Vdc	470pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A471K0 H03	X8L (Murata)	100Vdc	470pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A681K0 H03	X8L (Murata)	100Vdc	680pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A681K0 H03	X8L (Murata)	100Vdc	680pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A102K0 H03	X8L (Murata)	100Vdc	1000pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A102K0 H03	X8L (Murata)	100Vdc	1000pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A152K0 H03	X8L (Murata)	100Vdc	1500pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A152K0 H03	X8L (Murata)	100Vdc	1500pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A222K0 H03	X8L (Murata)	100Vdc	2200pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A222K0 H03	X8L (Murata)	100Vdc	2200pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A332K0 H03	X8L (Murata)	100Vdc	3300pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A332K0 H03	X8L (Murata)	100Vdc	3300pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A472K0 H03	X8L (Murata)	100Vdc	4700pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A472K0 H03	X8L (Murata)	100Vdc	4700pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A682K0 H03	X8L (Murata)	100Vdc	6800pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A682K0 H03	X8L (Murata)	100Vdc	6800pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A103K0	X8L (Murata)	100Vdc	10000pF±10%	3.6×3.5	2.5	2.5	A2	DB			
RHEL82A103K0 H03	X8L (Murata)	100Vdc	10000pF±10%	3.6×3.5	2.5	5.0	K1	M1			
RHEL82A153K0 H03	X8L (Murata)	100Vdc	15000pF±10%	3.6×3.5	2.5	2.5	A2	DB			
	X8L (Murata)	100Vdc	15000pF±10%	3.6×3.5	2.5	5.0	K1	M1			
	X8L (Murata)	100Vdc	22000pF±10%	3.6×3.5	2.5	2.5	A2	DB			
	X8L (Murata)	100Vdc	22000pF±10%	3.6×3.5	2.5	5.0	K1	M1			
	X8L (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	2.5	A2	DB			
	X8L (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1			
	X8L (Murata)	100Vdc 100Vdc	47000pF±10%	4.0×3.5	2.5	2.5	A2	DB M1			
	X8L (Murata)		47000pF±10%	4.0×3.5	2.5	5.0	K1	M1			
	X8L (Murata)	100Vdc 100Vdc	68000pF±10%	4.0×3.5	2.5	2.5	A2	DB			
RHEL82A683K1 H03 RHEL82A104K1 H03	X8L (Murata) X8L (Murata)	100Vdc 100Vdc	68000pF±10% 0.10µF±10%	4.0×3.5 4.0×3.5	2.5 2.5	5.0 2.5	K1 A2	 			
RHEL82A104K1 H03	X8L (Murata)	100Vdc 100Vdc	0.10µF±10%	4.0×3.5	2.5	5.0	K1	M1			
RHEL82A154K2 H03	X8L (Murata)	100Vdc	0.10µF±10%	4.0×3.5 5.5×4.0	3.15	2.5	A2	DB			
RHEL82A154K2 H03	X8L (Murata)	100Vdc 100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	 M1			
RHEL82A224K2 H03	X8L (Murata)	100Vdc 100Vdc	0.13µF±10%	5.5×4.0	3.15	2.5	A2	DB			
RHEL82A224K2 H03	X8L (Murata)	100Vdc	0.22µF±10%	5.5×4.0	3.15	5.0	K1	 M1			
		100140	5.22pi ±10 /0	0.0*1.0	0.10	0.0					

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

muRata

Specifications and Test Methods

		Specification		ication				
No.	. AEC-Q200 Test Item		Temperature Compensating Type High Dielectric Constant Type (Char. X8G) (Char. X8L)		AEC-Q200 Test Method			
1	Pre-and Post-Stress Electrical Test				-			
	High Temperature Exposure (Storage)		The measured and observed chaspecifications in the following ta	,				
	2	Appearance	No defects or abnormalities		Sit the capacitor for 1000±12h at 150±3°C. Let sit for 24±2h room condition*, then measure.			
2		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Within ±12.5%	•Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5min and			
		Q/D.F.	Q ≧ 350	0.04 max.	then let sit for 24±2h at room condition*. (for Char. X8L)			
		I.R.	More than $1000M\Omega$ or $50M\Omega$ ·	uF (Whichever is smaller)				
	Temperat Cycling	ure	The measured and observed chaspecifications in the following ta	,	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at room			
		Appearance	No defects or abnormalities exc coating	ept color change of outer	condition*, then measure. Step 1 2 3 4			
3		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	Temp. (°C) -55+0/-3 Room Temp. 150+3/-0 Room Temp. Time (min) 15±3 1 15±3 1			
		Q/D.F.	Q ≧ 350	0.05 max.	•Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5min and			
		I.R.	1000MΩ or 50MΩ • μF min. (Wi	hichever is smaller)	then let sit for 24±2h at room condition*. (for Char. X8L)			
	Moisture Resistanc	e	The measured and observed ch specifications in the following ta	,	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%) treatment shown below, 10 consecutive times.			
		Appearance	No defects or abnormalities		Let sit for 24±2h at room condition*, then measure. •Pretreatment			
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	Perform the heat treatment at $150+0/-10^{\circ}$ C for 60 ± 5 min and then let sit for 24 ± 2 h at room condition*. (for Char. X8L)			
		Q/D.F.	Q ≧ 200	0.05 max.	Humidity Humidity Humidity Humidity Humidity (°C) 90-98% 80-98% 80-98% 90-98% 90-98% 70 cm			
4		I.R.	500MΩ or 25MΩ • μF min. (Whi	chever is smaller)	65 90 45 45 40 40 40 40 40 40 40 40 40 40			
	Biased Hu	umidity	The measured and observed chaspecifications in the following ta	,	Apply the rated voltage and DC1.3+0.2/-0V (add 100kΩ resisto at 85±3°C and 80 to 85% humidity for 1000±12h.			
		Appearance	No defects or abnormalities	1	Remove and let sit for 24±2h at room condition*, then measure.			
5		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	The charge/discharge current is less than 50mA. Pretreatment 			
		Q/D.F.	Q ≧ 200	0.05 max.	Perform the heat treatment at $150+0/-10^{\circ}$ C for 60 ± 5 min and			
		I.R.	500MΩ or 25MΩ • μF min. (Whi	chever is smaller)	then let sit for 24±2h at room condition*. (for Char. X8L)			
	Operatior	nal Life	The measured and observed ch specifications in the following ta	-	Apply 150% of the rated voltage for 1000±12h at 150±3°C.			
		Appearance	No defects or abnormalities exc coating	cept color change of outer	Let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA.			
6		Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Within ±12.5%	•Pretreatment Apply test voltage for 60±5 min at test temperature.			
		Q/D.F.	Q ≧ 350	0.04 max.	Remove and let sit for 24±2h at room condition*. (for Char. X8L)			
		I.R.	1000MΩ or 50MΩ • μF min. (Wi	nichever is smaller)	· · · · · · · · · · · · · · · · · · ·			
7	External	Visual	No defects or abnormalities		Visual inspection			
8	Physical [Dimension	Within the specified dimensions	5	Using calipers and micrometers			
9	Marking		To be easily legible		Visual inspection			
* "~			perature: 15 to 35°C Relative hu					

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. earrow

Specifications and Test Methods

Continued from the preceding page. \searrow

			Specif	ication					
No.	AEC-Q200) Test Item	Temperature Compensating Type (Char. X8G)	High Dielectric Constant Type (Char. X8L)	AEC-Q200 Test Method				
		Appearance	No defects or abnormalities		Per MIL-STD-202 Method 215				
		Capacitance	Within the specified tolerance		Solvent 1: 1 part (by volume) of isopropyl alcohol 3 parts (by volume) of mineral spirits				
10	Resistance	Q/D.F.	Q ≧ 1000	0.025 max.	Solvent 2: Terpene defluxer				
10	to Solvents	I.R.	More than 10000MΩ or 500MΩ	2 • μF (Whichever is smaller)	Solvent 3: 42 parts (by volume) of water 1 part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine				
	Appeara		No defects or abnormalities		Three shocks in each direction should be applied along 3				
	Mechanical	Capacitance	Within the specified tolerance		mutually perpendicular axes of the test specimen (18 shocks). The specified test pulse should be Half-sine and should have a duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s. The capacitor should be subjected to a simple harmonic motion				
11	Shock	Q/D.F.	Q ≧ 1000	0.025 max.					
		Appearance	No defects or abnormalities						
		Capacitance	Within the specified tolerance		having a total amplitude of 1.5mm, the frequency being varied				
12	Vibration	Q/D.F.	Q ≧ 1000	0.025 max.	uniformly between the approximate limits of 10 and 2000Hz. The frequency range, from 10 to 2000Hz and return to 10Hz, should be traversed in approximately 20min. This motion should be applied for 12 items in each 3 mutually perpendicula directions (total of 36 times).				
	Resistance Soldering H		The measured and observed cha specifications in the following ta		The lead wires should be immersed in the melted solder 1.5 to				
	(Non-Preheat)	Appearance	No defects or abnormalities		2.0mm from the root of terminal at 260±5°C for 10±1s.				
13		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Within ±7.5%	 Pre-treatment Capacitor should be stored at 150+0/-10°C for 1h, then place at room temperature for 24±2h before initial measurement. 				
1		Dielectric Strength (Between Terminals)	No defects	I	(For Char. X8L) Post-treatment Capacitor should be stored for 24±2h at room condition*.				
	Resistance to Soldering Heat		The measured and observed chaspecifications in the following ta		First the capacitor should be stored at 120+0/-5°C for 60+0/-5s.				
	(On-Preheat)	Appearance	No defects or abnormalities		Then, the lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of terminal at 260±5°C for 7.5+0/-1s.				
13 ' 2		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Within ±7.5%	Pre-treatment Capacitor should be stored at 150+0/-10°C for 1h, then place				
2		Dielectric Strength (Between Terminals)	No defects		 at room temperature for 24±2h before initial measurement. (For Char. X8L) Post-treatment Capacitor should be stored for 24±2h at room condition*. 				
	Resistance Soldering H		The measured and observed chaspecifications in the following ta		Test condition Temperature of iron-tip: 350±10°C				
	(Soldering Iron Method)	Appearance	No defects or abnormalities		Soldering time: 3.5±0.5s. Soldering position				
13	non neulou)	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Within ±7.5%	Straight Lead: 1.5 to 2.0mm from the root of terminal. Crimp Lead: 1.5 to 2.0mm from the end of lead bend.				
3		Dielectric Strength (Between Terminals)	No defects		Pre-treatment Capacitor should be stored at 150+0/-10°C for 1h, then place at room temperature for 24±2h before initial measurement. (For Char. X8L) Post-treatment Capacitor should be stored for 24±2h at room condition*.				
	Thermal S	ihock	The measured and observed characteristic and observed characteristic at the following ta		Perform the 300 cycles according to the two heat treatments listed in the following table (Maximum transfer time is 20s).				
		Appearance	No defects or abnormalities		Let sit for 24±2h at room condition*, then measure.				
14		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	Within ±12.5%	Step 1 2 Temp. (°C) -55+0/-3 150+3/-0 Time (min) 15+2 15+2				
		Q/D.F.	Q ≧ 350	0.05 max.	- <u>Time (min)</u> 15±3 15±3				
		I.R.	1000MΩ or 50MΩ • μF min. (Wh	nichever is smaller)	 Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5min and then let sit for 24±2h at room condition*. (for Char. X8L) 				
		Appearance	No defects or abnormalities						
		Capacitance	Within the specified tolerance		- Per AEC-Q200-002				
15	ESD	Q/D.F.	Q ≧ 1000	0.025 max.					
		I.R.	More than 10000M Ω or 500M Ω	Ω • μF (Whichever is smaller)	1				

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Specifications and Test Methods

Continued from the preceding page.

				Specif	ication				
No.	AEC-Q200) Test Item		mpensating Type . X8G)	High Dielectric Constant Type (Char. X8L)	AEC-Q200 T	est Method		
16	6 Solderability		Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction.			The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25%rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body. Temp. of solder: 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder			
		Appearance	No defects or a	bnormalities		Visual inspection			
		Capacitance	Within the spec	cified tolerance		The capacitance, Q/D.F. should b	be measured at 25°C at the		
		Q/D.F.	Q≧1000		0.025 max.	X8G C < 1000pF 1±0. C ≥ 1000pF 1±0 X8I C ≤ 10µF 1±0	uency Voltage 1MHz AC0.5 to 5V (r.m.s.) .1kHz AC1±0.2V (r.m.s.) .1kHz AC1.0±0.2V (r.m.s.) ±24Hz AC0.5±0.1V (r.m.s.)		
		Insulation	Room Temperature	10000MΩ or 5 (Whichever is s		The insulation resistance should be measured at 25±3°C with DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2min of charging. (Charge/Discharge current ≤ 50mA.)			
17	Electrical Charac-	Resistance (I.R.)	High Temperature	100MΩ or 5MΩ (Whichever is s	•	The insulation resistance should be measured at 150±3°C w a DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2min of charging. (Charge/Discharge current ≦ 50mA.)			
	terization	Dielectric Strength	Between Terminals	No defects or a	bnormalities	The capacitor should not be damaged when DC voltage of 300% of the rated voltage (for Char. X8G) or DC voltage of 250% of the rated voltage (for Char. X8L) is applied between the terminations for 1 to 5s. (Charge/Discharge current \leq 50mA.)			
			Body Insulation	No defects or a	bnormalities	The capacitor is placed in a cont with metal balls of 1mm diametr that each terminal, short-circuit approximately 2mm from the ba 250% of the rated DC voltage is impressed for 1 to 5s between capacitor terminals and metal ba (Charge/Discharge current ≤ 500	er so is kept Ils, and Approx. 2mm alls.		
18	Terminal Strength	Tensile Strength	Termination no	to be broken or	loosened	As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for 10±1s.			
	Strength	Bending Strength	Termination no	t to be broken or	loosened	Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3s.			
						The capacitance change should specified temperature step.	be measured after 5min at each		
						Step 1 2	Temperature (°C) 25±2 -55±3		
				erature Coefficient	Within ±15%	3	25±2		
19	Capacitar Temperat		25 to 150°C: X8G 0±30ppm/°C		(Temp. Range: -55 to +125°C)	4 5	<u>150±3</u> 25±2		
	Character				Within +15/-40% (Temp. Range: +125 to +150°C)	5 25±2 The temperature coefficient or the ranges of capacitance change is determined using the capacitance measured in step 3 as a reference. •Pretreatment Perform the heat treatment at 150+0/-10°C for 60±5 min an then let sit for 24±2h at room condition*. Perform the initial measurement. (for Char. X8L)			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

175°C/200°C Operation Leaded MLCC for Automotive **RHS Series (DC100V-DC500V)**

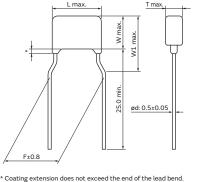
Features

- 1. Small size and large capacitance
- 2. Low ESR and ESL suitable for high frequency
- 3. Applied maximum temperature up to 175°C or 200°C Note: Maximum accumulative time is within 2000 hours.
- 4. Meet AEC-Q200, ISO7637-2 (surge test) requirement
- 5. Meet LF (Lead Free) and HF (Halogen Free)
- 6. Flow soldering and welding are available. (Re-flow soldering is not available.)
- 7. If copper wire is necessary at welding process, copper wire is available based on request.

Lead Wire: Solder Coated CP Wire

L max.





Dimension code: 0 Lead style code: K1

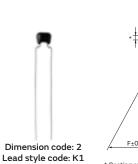


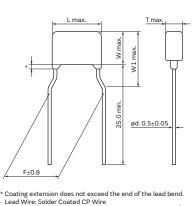
Lead style code: K1

* Coating extension does not exceed the end of the lead bend. • Lead Wire: Solder Coated CP Wire (in mm)

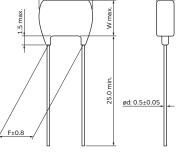
(in mm)

T max





<u>/</u>

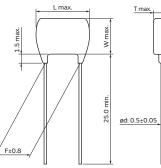


L max

Dimension code: 0 Lead style code: A2

Lead Wire: Solder Coated CP Wire

T max



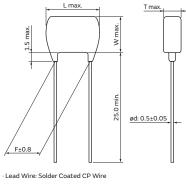
Dimension code: 1 Lead style code: A2

· Lead Wire: Solder Coated CP Wire

(in mm)

(in mm)





⁽in mm)

Dimensions

Dimensions and	Dimensions (mm)							
Lead Style Code	L	W	W1	Т	F	d		
0A2/0DG	3.8	3.5	-		2.5	0.5		
0K1/0M2	3.8	3.5	6.0		5.0	0.5		
1A2/1DG	4.0	3.5	-	See the individual	2.5	0.5		
1K1/1M2	4.0	3.5	5.0	product specification	5.0	0.5		
2A2/2DG	5.5	4.0	-		2.5	0.5		
2K1/2M1	5.5	4.0	6.0		5.0	0.5		

3

muRata

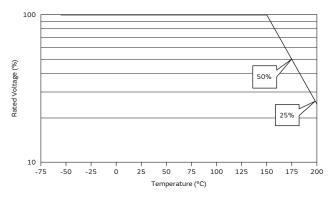
(in mm)

3

Rated Voltage

When the product temperature exceeds 150°C, please use this product within the voltage and temperature derated conditions in the figure below. Maximum operating temperature

200°C: Temp. Char. CCG and UNJ 175°C: Temp. Char. XAL and XAN



Marking

Rated Voltage		DC100V		DC200V	DC500V	
Dimension Code Temp. Char.	CCG	XAL	XAN	UI	LΛ	
0	0 (4 101J)		9	_	_	
1		_			_	
2	_	_	(C) 224 K19		(CM 101 J92)	
Temperature Characteristics	Marked with code (Co	CG Char.: 4, UNJ Char.	: 2, XAL Char.: 6, XAN	Char.: 9)	· · · · · · · · · · · · · · · · · · ·	
Nominal Capacitance	Marked with 3 figures	5				
Capacitance Tolerance	Marked with code					
Rated Voltage	Marked with code (DC100V: 1, DC200V: 6, DC500V: 9) Apart is omitted (Please refer to the marking example.)					
Manufacturer's Identification	Marked with M A part is omitted (Ple	ase refer to the markir	ng example.)			

Temperature Compensating Type, CCG/UNJ Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHS7G2A101J0 H01	CCG (Murata)	100Vdc	100pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A101J0 H01	CCG (Murata)	100Vdc	100pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A121J0 H01	CCG (Murata)	100Vdc	120pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A121J0 H01	CCG (Murata)	100Vdc	120pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A151J0 H01	CCG (Murata)	100Vdc	150pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A151J0 H01	CCG (Murata)	100Vdc	150pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A181J0 H01	CCG (Murata)	100Vdc	180pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A181J0 H01	CCG (Murata)	100Vdc	180pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A221J0 H01	CCG (Murata)	100Vdc	220pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A221J0 H01	CCG (Murata)	100Vdc	220pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A271J0 H01	CCG (Murata)	100Vdc	270pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A271J0 H01	CCG (Murata)	100Vdc	270pF±5%	3.8×3.5	2.5	5.0	K1	M2



C49E.pdf

Continued from the preceding pa	age. 🖌						1	
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHS7G2A331J0 H01	CCG (Murata)	100Vdc	330pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A331J0 H01	CCG (Murata)	100Vdc	330pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A391J0	CCG (Murata)	100Vdc	390pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A391J0	CCG (Murata)	100Vdc	390pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A471J0 H01	CCG (Murata)	100Vdc	470pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A471J0H01_	CCG (Murata)	100Vdc	470pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A561J0	CCG (Murata)	100Vdc	560pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A561J0 H01	CCG (Murata)	100Vdc	560pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A681J0 H01	CCG (Murata)	100Vdc	680pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A681J0 H01	CCG (Murata)	100Vdc	680pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A821J0 H01	CCG (Murata)	100Vdc	820pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A821J0 H01	CCG (Murata)	100Vdc	820pF±5%	3.8×3.5	2.5	5.0	K1	M2
RHS7G2A102J0 H01	CCG (Murata)	100Vdc	1000pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A102J0	, ,	100Vdc 100Vdc	•	3.8×3.5	2.5	5.0	K1	M2
	CCG (Murata)	100Vdc 100Vdc	1000pF±5%					
RHS7G2A152J0 H01	CCG (Murata)		1500pF±5%	3.8×3.5	2.5	2.5	A2	DG
RHS7G2A152J0 H01	CCG (Murata)	100Vdc	1500pF±5%	3.8×3.5	2.5	5.0 2.F	K1	M2
RHS7G2A222J1	CCG (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7G2A222J1	CCG (Murata)	100Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7G2A272J1 H01	CCG (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7G2A272J1 H01	CCG (Murata)	100Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7G2A332J1 H01	CCG (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7G2A332J1	CCG (Murata)	100Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D101J1	UNJ (Murata)	200Vdc	100pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D101J1	UNJ (Murata)	200Vdc	100pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D151J1	UNJ (Murata)	200Vdc	150pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D151J1	UNJ (Murata)	200Vdc	150pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D221J1	UNJ (Murata)	200Vdc	220pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D221J1	UNJ (Murata)	200Vdc	220pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D331J1	UNJ (Murata)	200Vdc	330pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D331J1	UNJ (Murata)	200Vdc	330pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D471J1	UNJ (Murata)	200Vdc	470pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D471J1	UNJ (Murata)	200Vdc	470pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D681J1	UNJ (Murata)	200Vdc	680pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D681J1	UNJ (Murata)	200Vdc	680pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D102J1	UNJ (Murata)	200Vdc	1000pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D102J1	UNJ (Murata)	200Vdc	1000pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D152J1 H01	UNJ (Murata)	200Vdc	1500pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D152J1 H01	UNJ (Murata)	200Vdc	1500pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D222J1 H01	UNJ (Murata)	200Vdc	2200pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D222J1 H01	UNJ (Murata)	200Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D332J1 H01	UNJ (Murata)	200Vdc	3300pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D332J1 H01	UNJ (Murata)	200Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D472J1 H01	UNJ (Murata)	200Vdc	4700pF±5%	4.0×3.5	2.5	2.5	A2	DG
RHS7J2D472J1	UNJ (Murata)	200Vdc	4700pF±5%	4.0×3.5	2.5	5.0	K1	M2
RHS7J2D682J2 H01	UNJ (Murata)	200Vdc	6800pF±5%	5.5×4.0	3.15	2.5	A2	DG
RHS7J2D682J2 H01	UNJ (Murata)	200Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2D103J2	UNJ (Murata)	200Vdc	10000pF±5%	5.5×4.0	3.15	2.5	A2	DG
RHS7J2D103J2 H01	UNJ (Murata)	200Vdc	10000pF±5%	5.5×4.0	3.15	5.0	К1	M2
RHS7J2H101J2 H01	UNJ (Murata)	500Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H151J2 H01	UNJ (Murata)	500Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H221J2 H01	UNJ (Murata)	500Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H331J2 H01	UNJ (Murata)	500Vdc	330pF±5%	5.5×4.0	3.15	5.0	К1	M2
RHS7J2H471J2	UNJ (Murata)	500Vdc	470pF±5%	5.5×4.0	3.15	5.0	К1	M2
RHS7J2H681J2	UNJ (Murata)	500Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H102J2 H01	UNJ (Murata)	500Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H152J2 H01	UNJ (Murata)	500Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H222J2 H01	UNJ (Murata)	500Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M2
				0.0	5.15			

Continued on the following page. earrow
ea

muRata

3

Continued from the preceding page. \searrow

1 01	0							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHS7J2H332J2 H01	UNJ (Murata)	500Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M2
RHS7J2H472J2 H01	UNJ (Murata)	500Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M2

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

High Dielectric Constant Type, XAL/XAN Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RHSL12A472K0 H01	XAL (Murata)	100Vdc	4700pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A472K0 H01	XAL (Murata)	100Vdc	4700pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A682K0 H01	XAL (Murata)	100Vdc	6800pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A682K0 H01	XAL (Murata)	100Vdc	6800pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A103K0 H01	XAL (Murata)	100Vdc	10000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A103K0 H01	XAL (Murata)	100Vdc	10000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A153K0	XAL (Murata)	100Vdc	15000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A153K0 H01	XAL (Murata)	100Vdc	15000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A223K0	XAL (Murata)	100Vdc	22000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A223K0	XAL (Murata)	100Vdc	22000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A333K0 H01	XAL (Murata)	100Vdc	33000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A333K0	XAL (Murata)	100Vdc	33000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A473K0 H01	XAL (Murata)	100Vdc	47000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A473K0 H01	XAL (Murata)	100Vdc	47000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A683K0 H01	XAL (Murata)	100Vdc	68000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A683K0 H01	XAL (Murata)	100Vdc	68000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSL12A104K0 H01	XAL (Murata)	100Vdc	0.1µF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSL12A104K0 H01	XAL (Murata)	100Vdc	0.1µF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A472K0 H01	XAN (Murata)	100Vdc	4700pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSN12A472K0 H01	XAN (Murata)	100Vdc	4700pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A682K0	XAN (Murata)	100Vdc	6800pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSN12A682K0 H01	XAN (Murata)	100Vdc	6800pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A103K0	XAN (Murata)	100Vdc	10000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSN12A103K0	XAN (Murata)	100Vdc	10000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A153K0 H01	XAN (Murata)	100Vdc	15000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSN12A153K0	XAN (Murata)	100Vdc	15000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A223K0	XAN (Murata)	100Vdc	22000pF±10%	3.8×3.5	2.5	2.5	A2	DG
RHSN12A223K0	XAN (Murata)	100Vdc	22000pF±10%	3.8×3.5	2.5	5.0	K1	M2
RHSN12A333K1	XAN (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	2.5	A2	DG
RHSN12A333K1	XAN (Murata)	100Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M2
RHSN12A473K1	XAN (Murata)	100Vdc	47000pF±10%	4.0×3.5	2.5	2.5	A2	DG
RHSN12A473K1	XAN (Murata)	100Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M2
RHSN12A683K1		100Vdc	68000pF±10%	4.0×3.5	2.5	2.5	A2	DG
RHSN12A683K1	XAN (Murata)	100Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M2
RHSN12A104K1	XAN (Murata)	100Vdc	0.1µF±10%	4.0×3.5	2.5	2.5	A2	DG
RHSN12A104K1	XAN (Murata)	100Vdc	0.1µF±10%	4.0×3.5	2.5	5.0	K1	M2
RHSN12A154K2	XAN (Murata)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	A2	DG
RHSN12A154K2	XAN (Murata)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M2
	XAN (Murata)	100Vdc	0.22µF±10%	5.5×4.0	3.15	2.5	A2	DG
RHSN12A224K2	XAN (Murata)	100Vdc	0.22µF±10%	5.5×4.0	3.15	5.0	K1	M2

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

muRata

Temperature Compensating Type Specifications and Test Methods

No.	AEC-Q200	Test Item	Specifications	AEC-Q200 Test Method			
1	Pre-and Pe Electrical			-			
	High	Appearance	No defects or abnormalities except color change of outer coating				
2	Temperature Exposure	Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Sit the capacitor for 1000±12h at 200±5°C. Let sit for 24±2h at room condition*, then measure.			
	(Storage)	Q	Q ≧ 350				
		I.R.	1000MΩ min.				
		Appearance	No defects or abnormalities except color change of outer coating	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at room condition*,			
3	Temperature Cycling	Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	then measure. Step 1 2 3 4			
		Q	Q ≧ 350	Temp. (°C) -55+0/-3 Room Temp. 125+3/-0 Room Temp.			
		I.R.	1000MΩ min.	Time (min) 15±3 1 15±3 1			
		Appearance	No defects or abnormalities	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%)			
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	treatment shown below, 10 consecutive times. Let sit for 24±2h at room condition*, then measure.			
4	Moisture Resistance	Q I.R.	Q ≧ 200 500MΩ min.	Humidity Humidity Humidity Humidity Humidity (°C) 90-98% 80-98% 90-98% 90-98% 10 10 01 2 3 4 5 6 7 8 910111213141516171819201222324 Hours			
		Appearance	No defects or abnormalities				
5	Biased Humidity	Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	 Apply the rated voltage and DC1.3+0.2/-0 V (add 100kΩ resistor at 85±3°C and 80 to 85% humidity for 1000±12h. Remove and let sit for 24±2h at room condition*, then measure. 			
	,	Q	Q ≧ 200	The charge/discharge current is less than 50mA.			
		I.R.	500MΩ min.				
		Appearance	No defects or abnormalities except color change of outer coating	Apply 25% of the rated voltage for 1000±12h at 200±5°C.			
6	Operational Life	Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	Let sit for 24±2h at room condition*, then measure The charge/discharge current is less than 50mA.			
		Q	Q ≧ 350	_			
_	F	I.R.	1000MΩ min.				
7	External \		No defects or abnormalities	Visual inspection			
8	Physical D	Imension	Within the specified dimensions	Using calipers and micrometers			
9	Marking		To be easily legible	Visual inspection			
		Appearance		Per MIL-STD-202 Method 215 Solvent 1: 1 part (by volume) of isopropyl alcohol			
		Capacitance	Within the specified tolerance	3 parts (by volume) of mineral spirits			
10	Resistance to Solvents	Q I.R.	Q ≧ 1000 10000MΩ min.	Solvent 2: Terpene defluxer Solvent 3: 42 parts (by volume) of water 1part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine			
		Appearance	No defects or abnormalities	Three shocks in each direction should be applied along			
11	Mechanical	Capacitance	Within the specified tolerance	3 mutually perpendicular axes of the test specimen (18 shocks). The specified test pulse should be Half-sine and should have a			
11	Shock	Q	Q ≧ 1000	duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s.			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. $ot\!$

Temperature Compensating Type Specifications and Test Methods

Continued from the preceding page. \checkmark

No.	AEC-Q200	Test Item	Specifications	AEC-Q200 Test Method			
		Appearance	No defects or abnormalities	The capacitor should be subjected to a simple harmonic motion			
		Capacitance	Within the specified tolerance	having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 2000Hz.			
12	Vibration	Q	Q ≧ 1000	The frequency range, from 10 to 2000Hz and return to 10Hz, should be traversed in approximately 20min. This motion should be applied for 12 items in each 3 mutually perpendicular directions (total of 36 times).			
	-	Appearance	No defects or abnormalities	_			
13	Resistance to	Capacitance Change	Within $\pm 2.5\%$ or $\pm 0.25pF$ (Whichever is larger)	The lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of terminal at 260±5°C for 10±1s.			
1	Soldering Heat (Non-Preheat)	Dielectric Strength (Between Terminals)	No defects	Post-treatment Capacitor should be stored for 24±2h at room condition*.			
		Appearance	No defects or abnormalities				
13	Resistance to	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	First the capacitor should be stored at 120+0/-5°C for 60+0/-5s. Then, the lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of terminal at 260±5°C for			
2	Soldering Heat (On-Preheat)	Dielectric Strength (Between Terminals)	No defects	7.5+0/-1s. Post-treatment Capacitor should be stored for 24±2h at room condition*.			
		Appearance	No defects or abnormalities	Test condition			
13	Resistance to Soldering Heat	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Termperature of iron-tip: 350±10°C Soldering time: 3.5±0.5s. Soldering position			
3	(soldering iron method)	dering Dielectric		Straight Lead: 1.5 to 2.0mm from the root of terminal. Crimp Lead: 1.5 to 2.0mm from the end of lead bend. Post-treatment Capacitor should be stored for 24±2h at room condition*.			
		Appearance	No defects or abnormalities	Perform the 300 cycles according to the two heat treatments			
14	Thermal	Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)	listed in the following table (Maximum transfer time is 20s). Let sit for 24±2h at room condition*, then measure.			
	Shock	Q	Q ≧ 350	Step 1 2 Temp. (°C) -55+0/-3 200+5/-0			
		I.R.	1000MΩ min.	Time (min) 15±3 15±3			
		Appearance	No defects or abnormalities				
15	ESD	Capacitance	Within the specified tolerance	Per AEC-Q200-002			
13	LJD	Q	Q ≧ 1000				
		I.R.	10000MΩ min.				
16	16 Solderability		Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction.	The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body. Temp. of solder: 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu)			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. earrow

Temperature Compensating Type Specifications and Test Methods

Continued from the preceding page. \searrow

P	
	PJ
	b 1
	_

No.	lo. AEC-Q200 Test Item		Test Item Specifications		AEC-Q200 Test Method		
		Appearance	No defects or abnormalities		Visual inspection		
		Capacitance	Within the specified tolerance		The capacitance, Q shou frequency and voltage sl	uld be measured at 25°C at the hown in the table.	
		Q	Q ≧ 1000		Nominal Cap. C < 1000pF	Frequency Voltage 1±0.1MHz AC0.5 to 5V (r.m.s.) 1±0.1kHz AC1±0.2V (r.m.s.)	
			Room Temperature	10000MΩ min.	DC voltage not exceedin	e should be measured at 25±3°C with a ng the rated voltage at normal ity and within 2min of charging. ent ≦ 50mA)	
		I.R.	High Temperature	20MΩ min.	a DC voltage not exceed	e should be measured at $200\pm5^{\circ}$ C with ding 25% of the rated voltage at normal ity and within 2min of charging. ent \leq 50mA)	
17	Electrical Charac- terization		Between Terminals	No defects or abnormalities	The capacitor should not applied between the terr (Charge/Discharge currer Rated Voltage DC100V DC200V DC500V	ent ≦ 50mA.)	
		Dielectric Strength	Body Insulation	No defects or abnormalities	The capacitor is placed in metal balls of 1mm diam terminal, short-circuit, is 2mm from the balls as sl and voltage in table is im between capacitor term metal balls. (Charge/Discharge curre	neter so that each s kept approximately shown in the figure, npressed for 1 to 5s ninals and	
				Rated Voltage DC100V, DC200V DC500V	Test Voltage 250% of the rated voltage 150% of the rated voltage		
18	Terminal Strength	Tensile Strength	Termination not to be broken or	loosened	gradually to each lead in	apacitor body, apply the force the radial direction of the capacitor then keep the force applied for $10\pm1s$.	
		Bending Strength			be bent 90° at the point then returned to the orig	e subjected to a force of 2.5N and then c of egress in one direction. Each wire is ginal position and bent 90° in the e rate of one bend per 2 to 3s.	
					The capacitance change each specified temperat	e should be measured after 5min at ture step.	
	Capacitar	nce	-55 to 25°C: 0+30	rature Coefficient V-72ppm/°C	Step 1 2 3 4	Temperature (°C) 25±2 -55±3 25±2 20±5	
19	Temperat Character	ure	UNJ 25 to 125°C: -750	/2/-30ppm/°C)+120/-347ppm/°C	capacitance measured ir the temperature sequen +200°C) the capacitance tolerance for the temper	25±2 cient is determind using the n step 3 as a reference. When cycling ntially from step 1 through 5 (-55 to re should be within the specified rature coefficient. caluculated by dividing the differences	
						n and minimum measured values in the apacitance value in step 3.	

C49E.pdf

High Dielectric Constant Type Specifications and Test Methods

No.	AEC-Q200) Test Item	Specifications	AEC-Q200 Test Method		
1	Pre-and P Electrical	ost-Stress Test		-		
		Appearance	No defects or abnormalities except color change of outer coating			
2	High Temperature	Capacitance Change	Within ±12.5%	Sit the capacitor for 1000±12h at 175±5°C. Let sit for 24±2h at room condition*, then measure.		
-	Exposure (Storage)	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.04 max.	Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*.		
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)			
		Appearance	No defects or abnormalities except color change of outer coating	Perform the 1000 cycles according to the four heat treatments listed in the following table. Let sit for 24±2h at room condition*,		
	Temperature	Capacitance Change	Within ±12.5%	then measure. Step 1 2 3 4		
3	Cycling	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.05 max.	Temp. (°C) -55+0/-3 Room Temp. 175+5/-0 Room Temp. Time (min) 15±3 1 15±3 1		
		I.R.	1000MΩ or 50MΩ • μF min. (Whichever is smaller)	•Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*.		
		Appearance	No defects or abnormalities	Apply the 24h heat (25 to 65°C) and humidity (80 to 98%)		
		Capacitance Change	Within ±12.5%	treatment shown below, 10 consecutive times. Let sit for 24±2h at room condition*, then measure. Humidity Humidity Humidity Humidity Humidity		
		D.F.	Char. XAL: 0.075 max. Char. XAN: 0.05 max.	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
4	Moisture Resistance	tance	500MΩ or 25MΩ • µF min. (Whichever is smaller)	45 45		
				•Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*.		
		Appearance	No defects or abnormalities	Apply the rated voltage and DC1.3+0.2/-0 V (add 100k Ω resistor)		
5	Biased	Capacitance Change	Within ±12.5%	at 85±3°C and 80 to 85% humidity for 1000±12h. Remove and let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA.		
5	Humidity	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.05 max.	Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let		
		I.R.	500M Ω or 25M Ω • μF min. (Whichever is smaller)	sit for 24±2h at room condition*.		
		Appearance	No defects or abnormalities except color change of outer coating	Apply 50% of the rated voltage for 1000±12h at 175±5°C.		
6	Operational Life	Capacitance Change	Within ±15%	Let sit for 24±2h at room condition*, then measure. The charge/discharge current is less than 50mA. •Pretreatment		
		D.F.	Char. XAL: 0.075 max. Char. XAN: 0.04 max.	Apply test voltage for 60±5min at test temperature. Remove and let sit for 24±2h at room condition*.		
		I.R.	100MΩ or 5MΩ • μ F min. (Whichever is smaller)			
7	External		No defects or abnormalities	Visual inspection		
8		Dimension	Within the specified dimensions	Using calipers and micrometers		
9	Marking		To be easily legible	Visual inspection		
		Appearance	No defects or abnormalities	Per MIL-STD-202 Method 215		
		Capacitance	Within the specified tolerance	Solvent 1: 1 part (by volume) of isopropyl alcohol 3 parts (by volume) of mineral spirits		
10	Resistance to Solvents	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.025 max.	Solvent 2: Terpene defluxer Solvent 3: 42 parts (by volume) of water		
		I.R.	10000MΩ or 500MΩ • μF min. (Whichever is smaller)	1part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine		

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. \nearrow

3

High Dielectric Constant Type Specifications and Test Methods

Continued from the preceding page. \searrow

No.	AEC-Q200	Test Item	Specifications	AEC-Q200 Test Method			
		Appearance	No defects or abnormalities	Three shocks in each direction should be applied along 2			
11	Mechanical	Capacitance	Within the specified tolerance	Three shocks in each direction should be applied along 3 mutually perpendicular axes of the test specimen (18 shocks).			
. 1	Shock	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.025 max.	The specified test pulse should be Half-sine and should have a duration: 0.5ms, peak value: 1500G and velocity change: 4.7m/s			
		Appearance	No defects or abnormalities	The capacitor should be subjected to a simple harmonic motion			
		Capacitance	Within the specified tolerance	having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 2000Hz.			
2	Vibration	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.025 max.	The frequency range, from 10 to 2000Hz and return to 10Hz, should be traversed in approximately 20min. This motion should be applied for 12 items in each 3 mutually perpendicular directions (total of 36 times).			
		Appearance	No defects or abnormalities	The lead wires should be immersed in the melted solder 1.5 to			
13	Resistance to	Capacitance Change	Within ±7.5%	2.0mm from the root of terminal at 260±5°C for 10±1s. •Pretreatment			
1	Soldering Heat (Non-Preheat)	Dielectric Strength (Between Terminals)	No defects	Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*. •Post-treatment Capacitor should be stored for 24±2h at room condition*.			
	Appearan		No defects or abnormalities	First the capacitor should be stored at $120+0/-5^{\circ}$ C for $60+0/-5^{\circ}$			
.3	Resistance to Soldering Heat (On-Preheat) St (B	Capacitance Change	Within ±7.5%	Then, the lead wires should be immersed in the melted solder 1.5 to 2.0mm from the root of terminal at 260±5°C for 7.5+0/-1s.			
2		Dielectric Strength (Between Terminals)	No defects	 Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*. Post-treatment Capacitor should be stored for 24±2h at room condition*. 			
		Appearance	No defects or abnormalities	Test condition			
	(Capacitance Change	Within ±7.5%	Termperature of iron-tip: 350±10°C Soldering time: 3.5±0.5s Soldering position			
13 ' 3	Resistance to Soldering Heat (Soldering Iron Method)	Dielectric Strength (Between Terminals)	No defects	 Straight Lead: 1.5 to 2.0mm from the root of terminal. Crimp Lead: 1.5 to 2.0mm from the end of lead bend. Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*. Post-treatment Capacitor should be stored for 24±2h at room condition*. 			
		Appearance	No defects or abnormalities	Perform the 300 cycles according to the two heat treatments			
		Capacitance Change	Within ±12.5%	listed in the following table (Maximum transfer time is 20s). Let sit for 24±2h at room condition*, then measure.			
14	Thermal	D.F.	Char. XAL: 0.075 max.	Step 1 2 Torra (02) 55 (2) (2) 175 (5) (2)			
.4	Shock		Char. XAN: 0.05 max.	Temp. (°C) -55+0/-3 175+5/-0 Time (min) 15±3 15±3			
		I.R.	1000M Ω or 50M Ω • μF min. (Whichever is smaller)	•Pretreatment Perform the heat treatment at 150+0/-10°C for 1h and then let sit for 24±2h at room condition*.			
		Appearance	No defects or abnormalities				
		Capacitance	Within the specified tolerance				
.5	5 ESD	D.F.	Char. XAL: 0.075 max. Char. XAN: 0.025 max.	Per AEC-Q200-002			
		I.R.	10000MΩ or 500MΩ • μF min. (Whichever is smaller)				
16	6 Solderability		Lead wire should be soldered with uniform coating on the axial direction over 95% of the circumferential direction.	The terminal of a capacitor is dipped into a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight propotion) and then into molten solder (JIS-Z-3282) for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body.			
				Temp. of solder : 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu)			

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. earrow
ea

High Dielectric Constant Type Specifications and Test Methods

Continued from the preceding page. \searrow

No.	AEC-Q200	Test Item		Specifications	AEC-Q200 Test Method	
		Appearance	No defects or abnorm	alities	Visual inspection	
		Capacitance	Within the specified t	olerance	The capacitance, D.F. should be measured at 25°C at the	
		D.F.	Char. XAL: 0.075 max Char. XAN: 0.025 max		Frequency and voltage shown in the table. Frequency Voltage 1±0.1kHz AC1±0.2V (r.m.s.)	
		I.R.	Room Temperature	10000MΩ or 500MΩ • μF min. (Whichever is smaller)	The insulation resistance should be measured at 25±3°C with a DC voltage not exceeding the rated voltage at normal temperature and humidity and within 2min of charging. (Charge/Discharge current ≤ 50mA)	
17	Electrical Charac-		High Temperature	10MΩ or 0.5MΩ • μF min. (Whichever is smaller)	The insulation resistance should be measured at 175±5°C with a DC voltage not exceeding 50% of the rated voltage at normal temperature and humidity and within 2min of charging. (Charge/Discharge current ≦ 50mA)	
	terization		Between Terminals	No defects or abnormalities	The capacitor should not be damaged when DC voltage of 250% of the rated voltage is applied between the terminations for 1 to 5s. (Charge/Discharge current ≦ 50mA.)	
		Dielectric Strength	Body Insulation	No defects or abnormalities	The capacitor is placed in a container with metal balls of 1mm diameter so that each terminal, short-circuit, is kept approximately 2mm from the balls as shown in the figure, and 250% of the rated DC voltage is impressed for 1 to 5s between capacitor terminals and metal balls. (Charge/Discharge current ≤ 50mA.)	
18	Terminal Strength	Tensile Strength	Termination not to be	e broken or loosened	As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for $10\pm1s$.	
		Bending Strength			Each lead wire should be subjected to a force of 2.5N and then be bent 90° at the point of egress in one direction. Each wire is then returned to the original position and bent 90° in the opposite direction at the rate of one bend per 2 to 3s.	
19	Capacitance 19 Temperature Characteristics		XAL 150 to 1 XAN -55 to 1	Capacitance Change 150°C: Within ±15% 175°C: Within+15/-40% .25°C: Within ±15% 175°C: Within+15/-60%	The capacitance change should be measured after 5min at each specified temperature step.	

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Leaded MLCC for General Purpose

RDE Series (DC25V-DC1kV)

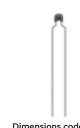
Features

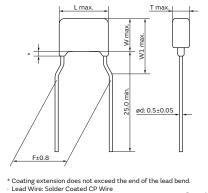
- 1. Small size and large capacitance
- 2. Low ESR characteristics for high frequency
- 3. Meet LF (Lead Free) and HF (Halogen Free)
- 4. Flow soldering is available, but re-flow soldering is not available.

Applications

..... General electronic equipment

(Do not use for automotive-related power train and safety equipment.)

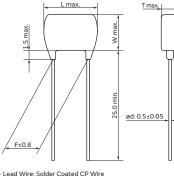




Dimensions code: 0/1 Lead style code: K1

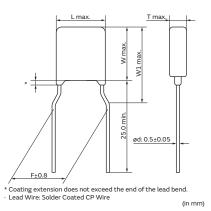


Lead style code: B1

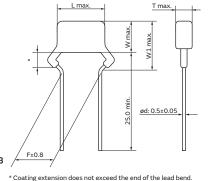


(in mm)

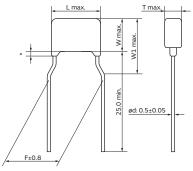








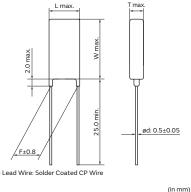




Dimensions code: 2/3/4 Lead style code: K1

Coating extension does not exceed the end of the lead bend. Lead Wire: Solder Coated CP Wire (in mm)





Dimensions

		_	_		_	
Dimensions and				Dimensions (mm)		
Lead Style Code	L	W	W1	т	F	d
0P1/0S1	5.0	3.5	6.0		2.5	0.5
0K1/0M1	4.0	3.5	6.0		5.0	0.5
1P1/1S1	5.0	3.5	5.0		2.5	0.5
1K1/1M1	4.5	3.5	5.0		5.0	0.5
2P1/2S1	5.5	4.0	6.0		2.5	0.5
2K1/2M1	5.5	4.0	6.0	See the individual	5.0	0.5
3P1/3S1	5.5	5.0	7.5	product specification	2.5	0.5
3K1/3M1	5.5	5.0	7.5		5.0	0.5
4K1/4M1	7.5	5.5	8.0		5.0	0.5
5B1/5E1	7.5	7.5*	-		5.0	0.5
UB1/UE1	7.7	12.5*	-		5.0	0.5
WK1/WM1	5.5	7.5	10.0		5.0	0.5

*DC630V, DC1kV: W+0.5mm



(in mm)

4

Marking

Rated Voltage	DC2	5V	D	0C50V			DC100V		DC250V	DC500V	DC630V	DC1kV
Dimensions Temp. Code Char.	X7S	X7R	C0G	X7S	X7R	COG	X7S	X7R		X7R, U	2J, COG	
o		(104K)		_			_		_		-	-
1	(224K)	-	A 102J	-	(224К)		-	(224К)	U 102J (U2J) (U2J) (102K (X7R)	(X7R)	_	-
2	(H475) (HK2C)	-	(C) 563 J5A	(C ⁴⁷⁵ (K5C)	(CH105 K5C)		_		$ \begin{array}{c} (103) \\ (103) \\ J4U \\ (102J) \\ $	(H153) (MK9C) (X7R)	$ \begin{array}{c} (\mathbb{H}^{472}_{J7U}) \\ (\mathbb{H}^{153}_{K7C}) \\ ($	$ \begin{array}{c} \hline (102) \\ (U2 J) \\ \hline (U2 J) \\ \hline (102) \\ \hline (X7R) \\ \hline (X7R) \\ \hline (C0G) \\ \hline \end{array} $
3, 4, W	(H226 K2C)	-	_	(CH226 K5C)	(M335 K5C)	_		_	(H473 J4U (U2J) (H224 K4C (X7R)	(104 K9C (X7R)	() () () () () () () () () ()	(M472 JAU (U2J) (M333 KAC (X7R)
5, U	_	-	_	_	_	_	_	_	- (<u>474</u> <u>K4C</u>) (X7R)	(X7R)	(U2 J) (U2 J) (X7R)	(U2J) (U2J) (X7R)
Temperature Characteristics				A, X7S/X7 to the ma			U)					
Nominal Capacitance	Under 10	0pF: Actua	al value 1	.00pF and	over: Mark	ed with 3 f	igures					
Capacitance Tolerance		Marked with code A part is omitted (Please refer to the marking example.)										
Rated Voltage		arked with code (DC25V: 2, DC50V: 5, DC100V: 1, DC250V: 4, DC500V: 9, DC630V: 7, DC1kV: A) part is omitted (Please refer to the marking example.)										
Manufacturer's Identification	Marked v A part is		lease refer	to the ma	rking exam	ıple.)						

Temperature Compensating Type, COG/U2J Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C1H1R0C0 H03	COG (EIA)	50Vdc	1.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H1R0C0 H03	COG (EIA)	50Vdc	1.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H2R0C0 H03	COG (EIA)	50Vdc	2.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H2R0C0 H03	COG (EIA)	50Vdc	2.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H3R0C0 H03	COG (EIA)	50Vdc	3.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H3R0C0 H03	COG (EIA)	50Vdc	3.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H4R0C0 H03	COG (EIA)	50Vdc	4.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H4R0C0 H03	COG (EIA)	50Vdc	4.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H5R0C0 H03	COG (EIA)	50Vdc	5.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H5R0C0 H03	COG (EIA)	50Vdc	5.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1

Continued on the following page. earrow
ea

Continued from the preceding page. 🖌										
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping		
RDE5C1H6R0D0 H03	COG (EIA)	50Vdc	6.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H6R0D0 H03	COG (EIA)	50Vdc	6.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H7R0D0 H03	COG (EIA)	50Vdc	7.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H7R0D0 H03	COG (EIA)	50Vdc	7.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H8R0D0 H03	COG (EIA)	50Vdc	8.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H8R0D0 H03	COG (EIA)	50Vdc	8.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H9R0D0	COG (EIA)	50Vdc	9.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H9R0D0	COG (EIA)	50Vdc	9.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H100J0	COG (EIA)	50Vdc	10pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H100J0	COG (EIA)	50Vdc	10pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H120J0	COG (EIA)	50Vdc	12pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H120J0	COG (EIA)	50Vdc	12pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H150J0	COG (EIA)	50Vdc	15pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H150J0 H03	COG (EIA)	50Vdc	15pF±5%	5.0×3.5	2.5	2.5	P1			
RDE5C1H180J0 H03	COG (EIA)	50Vdc	18pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H180J0 H03	COG (EIA)	50Vdc	18pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H220J0 H03	COG (EIA)	50Vdc	22pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H220J0 H03	COG (EIA)	50Vdc	22pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H270J0 H03	COG (EIA)	50Vdc	27pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H270J0 H03	COG (EIA)	50Vdc	27pF±5%	5.0×3.5	2.5	2.5	P1			
RDE5C1H330J0 H03	COG (EIA)	50Vdc	33pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H330J0	COG (EIA)	50Vdc	33pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H390J0	COG (EIA)	50Vdc	39pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H390J0 H03	COG (EIA)	50Vdc	39pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H470J0 H03	COG (EIA)	50Vdc	47pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H470J0 H03	COG (EIA)	50Vdc	47pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H560J0 H03	COG (EIA)	50Vdc	56pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H560J0 H03	COG (EIA)	50Vdc	56pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H680J0 H03	COG (EIA)	50Vdc	68pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H680J0 H03	COG (EIA)	50Vdc	68pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H820J0 H03	COG (EIA)	50Vdc	82pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H101J0 H03	COG (EIA)	50Vdc	100pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H101J0 H03	COG (EIA)	50Vdc	100pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H121J0 H03	COG (EIA)	50Vdc	120pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H121J0 H03	COG (EIA)	50Vdc	120pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H151J0 H03	COG (EIA)	50Vdc	150pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H151J0	COG (EIA)	50Vdc	150pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H181J0 H03	COG (EIA)	50Vdc	180pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H181J0 H03	COG (EIA)	50Vdc	180pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H221J0 H03	COG (EIA)	50Vdc	220pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H221J0 H03	COG (EIA)	50Vdc	220pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H271J0 H03	COG (EIA)	50Vdc	270pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H271J0 H03	COG (EIA)	50Vdc	270pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H331J0 H03	COG (EIA)	50Vdc	330pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H331J0 H03	COG (EIA)	50Vdc	330pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H391J0 H03	COG (EIA)	50Vdc	390pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H391J0	COG (EIA)	50Vdc	390pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H471J0 H03	COG (EIA)	50Vdc	470pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H471J0 H03	COG (EIA)	50Vdc	470pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H561J0 H03	COG (EIA)	50Vdc	560pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H561J0 H03	COG (EIA)	50Vdc	560pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H681J0 H03	COG (EIA)	50Vdc	680pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H681J0 H03	COG (EIA)	50Vdc	680pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H821J0 H03	COG (EIA)	50Vdc	820pF±5%	4.0×3.5	2.5	5.0	K1	M1		
RDE5C1H821J0 H03	COG (EIA)	50Vdc	820pF±5%	5.0×3.5	2.5	2.5	P1	S1		
RDE5C1H102J0 H03	COG (EIA)	50Vdc	1000pF±5%	4.0×3.5	2.5	5.0	K1	M1		

Continued on the following page. earrow
ea



C49E.pdf May 10,2018

Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C1H102J0 H03	COG (EIA)	50Vdc	1000pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H122J0 H03	COG (EIA)	50Vdc	1200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H122J0 H03	COG (EIA)	50Vdc	1200pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H152J0 H03	COG (EIA)	50Vdc	1500pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H152J0 H03	COG (EIA)	50Vdc	1500pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H182J0 H03	COG (EIA)	50Vdc	1800pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H182J0 H03	COG (EIA)	50Vdc	1800pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H222J0 H03	COG (EIA)	50Vdc	2200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H222J0 H03	COG (EIA)	50Vdc	2200pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H272J0 H03	COG (EIA)	50Vdc	2700pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H272J0 H03	COG (EIA)	50Vdc	2700pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H332J0 H03	COG (EIA)	50Vdc	3300pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H332J0 H03	COG (EIA)	50Vdc	3300pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H392J0 H03	COG (EIA)	50Vdc	3900pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C1H392J0 H03	COG (EIA)	50Vdc	3900pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C1H472J1 H03	COG (EIA)	50Vdc	4700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H472J1 H03	COG (EIA)	50Vdc	4700pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H562J1 H03	COG (EIA)	50Vdc	5600pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H562J1 H03	COG (EIA)	50Vdc	5600pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H682J1 H03	COG (EIA)	50Vdc	6800pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H682J1	COG (EIA)	50Vdc	6800pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H822J1 H03	COG (EIA)	50Vdc	8200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H822J1 H03	COG (EIA)	50Vdc	8200pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H103J1	COG (EIA)	50Vdc	10000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H103J1	COG (EIA)	50Vdc	10000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H123J1	COG (EIA)	50Vdc	12000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H123J1	COG (EIA)	50Vdc	12000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H153J1	COG (EIA)	50Vdc	15000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H153J1	COG (EIA)	50Vdc	15000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H183J1	COG (EIA)	50Vdc	18000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H183J1	COG (EIA)	50Vdc	18000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H223J1	COG (EIA)	50Vdc	22000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C1H223J1	COG (EIA)	50Vdc	22000pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C1H273J2	COG (EIA)	50Vdc	27000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C1H273J2	COG (EIA)	50Vdc	27000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C1H333J2	COG (EIA)	50Vdc	33000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C1H333J2	COG (EIA)	50Vdc	33000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C1H393J2	COG (EIA)	50Vdc	39000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C1H393J2	COG (EIA)	50Vdc	39000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C1H473J2 H03	COG (EIA)	50Vdc	47000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C1H473J2 H03	COG (EIA)	50Vdc	47000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C1H563J2 H03	COG (EIA)	50Vdc	56000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C1H563J2 H03	COG (EIA)	50Vdc	56000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C1H683J2	COG (EIA)	50Vdc	68000pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	50Vdc	68000pF±5%	5.5×4.0	3.15	2.5	P1	S1
	COG (EIA)	50Vdc	82000pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	50Vdc 50Vdc	82000pF±5% 0.1µF±5%	5.5×4.0 5.5×4.0	3.15	2.5 5.0	P1	S1 M1
	COG (EIA)				3.15		K1	M1 51
RDE5C1H104J2 H03 RDE5C2A1R0C0 H03	COG (EIA) COG (EIA)	50Vdc 100Vdc	0.1µF±5% 1.0pF±0.25pF	5.5×4.0 4.0×3.5	3.15 2.5	2.5	P1 K1	M1
RDE5C2A1R0C0_H03_	COG (EIA) COG (EIA)	100Vdc	1.0pF±0.25pF 1.0pF±0.25pF	4.0×3.5 5.0×3.5	2.5	2.5	P1	
RDE5C2A1R0C0_H03_	COG (EIA)	100Vdc	2.0pF±0.25pF	4.0×3.5	2.5	5.0	Р1 К1	M1
RDE5C2A2R0C0 H03	COG (EIA)	100Vdc	2.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A3R0C0 H03	COG (EIA)	100Vdc	3.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A3R0C0_H03	COG (EIA)	100Vdc	3.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A4R0C0 H03	COG (EIA)	100Vdc	4.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A4R0C0 H03	COG (EIA)	100Vdc	4.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	
							· · -	

4



Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C2A5R0C0 H03	COG (EIA)	100Vdc	5.0pF±0.25pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A5R0C0 H03	COG (EIA)	100Vdc	5.0pF±0.25pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A6R0D0 H03	COG (EIA)	100Vdc	6.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A7R0D0 H03	COG (EIA)	100Vdc	7.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A7R0D0	COG (EIA)	100Vdc	7.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A8R0D0	COG (EIA)	100Vdc	8.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A8R0D0	COG (EIA)	100Vdc	8.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A9R0D0	COG (EIA)	100Vdc	9.0pF±0.5pF	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A9R0D0	COG (EIA)	100Vdc	9.0pF±0.5pF	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A100J0	COG (EIA)	100Vdc	10pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A100J0 H03	COG (EIA)	100Vdc	10pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A120J0 H03	COG (EIA)	100Vdc	12pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A150J0 H03	COG (EIA)	100Vdc	15pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A150J0	COG (EIA)	100Vdc	15pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A180J0	COG (EIA)	100Vdc	18pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A180J0	COG (EIA)	100Vdc	18pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A220J0	COG (EIA)	100Vdc	22pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A220J0	COG (EIA)	100Vdc	22pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A270J0 H03	COG (EIA)	100Vdc	27pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A270J0 H03	COG (EIA)	100Vdc	27pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A330J0 H03	COG (EIA)	100Vdc	33pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A330J0 H03	COG (EIA)	100Vdc	33pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A390J0 H03	COG (EIA)	100Vdc	39pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A390J0	COG (EIA)	100Vdc	39pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A470J0	COG (EIA)	100Vdc	47pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A470J0	COG (EIA)	100Vdc	47pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A560J0 H03	COG (EIA)	100Vdc	56pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A560J0 H03	COG (EIA)	100Vdc	56pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A680J0	COG (EIA)	100Vdc	68pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A680J0	COG (EIA)	100Vdc	68pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A820J0	COG (EIA)	100Vdc	82pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A820J0	COG (EIA)	100Vdc	82pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A101J0	COG (EIA)	100Vdc	100pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A101J0	COG (EIA)	100Vdc	100pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A121J0	COG (EIA)	100Vdc	120pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A121J0	COG (EIA)	100Vdc	120pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A151J0	COG (EIA)	100Vdc	150pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A151J0	COG (EIA)	100Vdc	150pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A181J0 HO3	COG (EIA)	100Vdc	180pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A181J0	COG (EIA)	100Vdc	180pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A221J0	COG (EIA)	100Vdc	220pF±5%	4.0×3.5	2.5	5.0	K1	M1
	COG (EIA)	100Vdc	220pF±5%	5.0×3.5	2.5	2.5	P1	S1
	COG (EIA)	100Vdc	270pF±5%	4.0×3.5	2.5	5.0	K1	M1
	COG (EIA)	100Vdc 100Vdc	270pF±5%	5.0×3.5 4.0×3.5	2.5 2.5	2.5 5.0	P1	S1 M1
RDE5C2A331J0 H03 RDE5C2A331J0 H03	COG (EIA)	100Vdc 100Vdc	330pF±5%		2.5	2.5	K1 P1	51
RDE5C2A391J0_H03_	COG (EIA) COG (EIA)	100Vdc 100Vdc	330pF±5% 390pF±5%	5.0×3.5 4.0×3.5	2.5	5.0	Р1 К1	 M1
RDE5C2A391J0_H03_	COG (EIA)	100Vdc 100Vdc	390pF±5%	4.0×3.5	2.5	2.5	P1	51
RDE5C2A471J0 H03	COG (EIA)	100Vdc	470pF±5%	4.0×3.5	2.5	5.0	K1	
RDE5C2A471J0_H03	COG (EIA)	100Vdc	470pF±5%	5.0×3.5	2.5	2.5	P1	\$1
RDE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A561J0 H03	COG (EIA)	100Vdc	560pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A681J0 H03	COG (EIA)	100Vdc	680pF±5%	5.0×3.5	2.5	2.5	P1	
RDE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	4.0×3.5	2.5	5.0	K1	M1

Continued on the following page. earrow
ea



Continued from the preceding page. \searrow

Continued from the preceding pa	age. 🌶							
Part Number	Temp.	Rated	Capacitance	Dimensions LxW	Dimension T	Lead Space F	Lead Style Code	Lead Style Code
	Char.	Voltage		(mm)	(mm)	(mm)	Bulk	Taping
RDE5C2A821J0 H03	COG (EIA)	100Vdc	820pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A102J0	COG (EIA)	100Vdc	1000pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A102J0	COG (EIA)	100Vdc	1000pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A122J0 H03	COG (EIA)	100Vdc	1200pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A122J0 H03	COG (EIA)	100Vdc	1200pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A152J0	COG (EIA)	100Vdc	1500pF±5%	4.0×3.5	2.5	5.0	K1	M1
RDE5C2A152J0	COG (EIA)	100Vdc	1500pF±5%	5.0×3.5	2.5	2.5	P1	S1
RDE5C2A182J1	COG (EIA)	100Vdc	1800pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A182J1	COG (EIA)	100Vdc	1800pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A222J1	COG (EIA)	100Vdc	2200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A222J1	COG (EIA)	100Vdc	2200pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A272J1	COG (EIA)	100Vdc	2700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A272J1	COG (EIA)	100Vdc	2700pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A332J1	COG (EIA)	100Vdc	3300pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE5C2A332J1	COG (EIA)	100Vdc	3300pF±5%	5.0×3.5	3.15	2.5	P1	S1
RDE5C2A392J2 H03	COG (EIA)	100Vdc	3900pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A392J2 H03	COG (EIA)	100Vdc	3900pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A472J2 H03	COG (EIA)	100Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A472J2	COG (EIA)	100Vdc	4700pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A562J2	COG (EIA)	100Vdc	5600pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A562J2	COG (EIA)	100Vdc	5600pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A682J2	COG (EIA)	100Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A682J2	COG (EIA)	100Vdc	6800pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A822J2	COG (EIA)	100Vdc	8200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A822J2	COG (EIA)	100Vdc	8200pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A103J2	COG (EIA)	100Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A103J2	COG (EIA)	100Vdc	10000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A123J2	COG (EIA)	100Vdc	12000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2A123J2	COG (EIA)	100Vdc	12000pF±5%	5.5×4.0	3.15	2.5	P1	S1
RDE5C2A153J2	COG (EIA)	100Vdc	15000pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA) COG (EIA)	100Vdc 100Vdc	15000pF±5%	5.5×4.0 5.5×4.0	3.15	2.5	P1	S1
RDE5C2A183J2 H03 RDE5C2A183J2 H03	COG (EIA) COG (EIA)	100Vdc 100Vdc	18000pF±5% 18000pF±5%	5.5×4.0	3.15 3.15	5.0 2.5	K1 P1	M1 51
RDE5C2A223J2	COG (EIA)	100Vdc	22000pF±5%	5.5×4.0	3.15	5.0	K1	 M1
RDE5C2A223J2	COG (EIA)	100Vdc	22000pF±5%	5.5×4.0	3.15	2.5	P1	
RDE5C2E100J2 H03	COG (EIA)	250Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	 M1
RDE5C2E120J2 H03	COG (EIA)	250Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1	 M1
RDE5C2E150J2 H03	COG (EIA)	250Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E180J2	COG (EIA)	250Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E220J2	COG (EIA)	250Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E270J2	COG (EIA)	250Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E330J2	COG (EIA)	250Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E390J2	COG (EIA)	250Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E470J2 H03	COG (EIA)	250Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E560J2	COG (EIA)	250Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E680J2	COG (EIA)	250Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E820J2 H03	COG (EIA)	250Vdc	82pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E101J2	COG (EIA)	250Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E121J2 H03	COG (EIA)	250Vdc	120pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E151J2 H03	COG (EIA)	250Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E181J2 H03	COG (EIA)	250Vdc	180pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E221J2 H03	COG (EIA)	250Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E271J2 HO3	COG (EIA)	250Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E331J2 HO3	COG (EIA)	250Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E391J2	COG (EIA)	250Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E471J2 H03	COG (EIA)	250Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E561J2	COG (EIA)	250Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1

4



Continued from the preceding pa	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C2E681J2	COG (EIA)	250Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E821J2 H03	COG (EIA)	250Vdc	820pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E102J2 H03	COG (EIA)	250Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E122J2 H03	COG (EIA)	250Vdc	1200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E152J2 H03	COG (EIA)	250Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E182J2 H03	COG (EIA)	250Vdc	1800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E222J2 H03	COG (EIA)	250Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E272J2 H03	COG (EIA)	250Vdc	2700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E332J2 H03	COG (EIA)	250Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E392J2 H03	COG (EIA)	250Vdc	3900pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E472J2 H03	COG (EIA)	250Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E562J2 H03	COG (EIA)	250Vdc	5600pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E682J2 H03	COG (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E822J2 H03	COG (EIA)	250Vdc	8200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E103J2 H03	COG (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E123J2	COG (EIA)	250Vdc	12000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2E153J2	COG (EIA)	250Vdc	15000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J100J2	COG (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J120J2 H03	COG (EIA)	630Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J150J2 H03	COG (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J180J2 H03	COG (EIA)	630Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J220J2 H03	COG (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J270J2 H03	COG (EIA)	630Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J330J2 H03	COG (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J390J2 H03	COG (EIA)	630Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J470J2 H03	COG (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J560J2 H03	COG (EIA)	630Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J680J2 H03	COG (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J820J2 H03	COG (EIA)	630Vdc	82pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J101J2 H03	COG (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J121J2 H03	COG (EIA)	630Vdc	120pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J151J2 H03	COG (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J181J2 H03	COG (EIA)	630Vdc	180pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J221J2 H03	COG (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J271J2 H03	COG (EIA)	630Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J331J2 H03	COG (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J391J2 H03	COG (EIA)	630Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J471J2 H03	COG (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J561J2 H03	COG (EIA)	630Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J681J2	COG (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J821J2 H03	COG (EIA)	630Vdc	820pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J102J2 H03	COG (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J122J2	COG (EIA)	630Vdc	1200pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J152J2 H03	COG (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C2J182J2 H03	COG (EIA)	630Vdc	1800pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	2700pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	630Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A100J2 H03	COG (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	1000Vdc	12pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A150J2	COG (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A180J2 H03	COG (EIA)	1000Vdc	18pF±5%	5.5×4.0	3.15	5.0	K1	M1
	COG (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A270J2 H03	COG (EIA)	1000Vdc	27pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A330J2 H03 RDE5C3A390J2 H03	COG (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1 M1
	COG (EIA)	1000Vdc	39pF±5%	5.5×4.0	3.15	5.0	K1	
RDE5C3A470J2 H03	COG (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1

Continued on the following page. earrow



C49E.pdf May 10,2018

Continued from the preceding page. \searrow

Continued from the preceding p	age. 🖌							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE5C3A560J2 H03	COG (EIA)	1000Vdc	56pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A680J2	COG (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A820J2	COG (EIA)	1000Vdc	82pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A101J2	COG (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A121J2	COG (EIA)	1000Vdc	120pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A151J2	COG (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A181J2	COG (EIA)	1000Vdc	180pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A221J2	COG (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A271J2	COG (EIA)	1000Vdc	270pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A331J2	COG (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A391J2	COG (EIA)	1000Vdc	390pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A471J2	COG (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A561J2	COG (EIA)	1000Vdc	560pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A681J2	COG (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A821J2	COG (EIA)	1000Vdc	820pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE5C3A102J2 H03	COG (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E101J1	U2J (EIA)	250Vdc	100pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E151J1 H03	U2J (EIA)	250Vdc	150pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E221J1 H03	U2J (EIA)	250Vdc	220pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E331J1 H03	U2J (EIA)	250Vdc	330pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E471J1 H03	U2J (EIA)	250Vdc	470pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E681J1 H03	U2J (EIA)	250Vdc	680pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E102J1 H03	U2J (EIA)	250Vdc	1000pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E152J1 H03	U2J (EIA)	250Vdc	1500pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E222J1 H03	U2J (EIA)	250Vdc	2200pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E332J1 H03	U2J (EIA)	250Vdc	3300pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E472J1 H03	U2J (EIA)	250Vdc	4700pF±5%	4.5×3.5	3.15	5.0	K1	M1
RDE7U2E682J2 H03	U2J (EIA)	250Vdc	6800pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E103J2	U2J (EIA)	250Vdc	10000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E153J2	U2J (EIA)	250Vdc	15000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E223J2	U2J (EIA)	250Vdc	22000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2E333J3 HO3	U2J (EIA)	250Vdc	33000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2E473J3 H03	U2J (EIA)	250Vdc	47000pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U2J100J2 H03	U2J (EIA)	630Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J150J2 H03	U2J (EIA)	630Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J220J2 H03	U2J (EIA)	630Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J330J2 H03	U2J (EIA)	630Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J470J2 H03	U2J (EIA)	630Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J680J2 H03	U2J (EIA)	630Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J101J2 H03	U2J (EIA)	630Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J151J2	U2J (EIA)	630Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J221J2 H03	U2J (EIA)	630Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J331J2 H03	U2J (EIA)	630Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J471J2 H03	U2J (EIA)	630Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J681J2	U2J (EIA)	630Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J102J2	U2J (EIA)	630Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	630Vdc	1500pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	630Vdc	2200pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	630Vdc	3300pF±5%	5.5×4.0	3.15	5.0	K1	M1
	U2J (EIA)	630Vdc	4700pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U2J682J3 H03	U2J (EIA)	630Vdc	6800pF±5%	5.5×5.0	4.0	5.0	K1	M1
	U2J (EIA)	630Vdc	10000pF±5%	5.5×5.0	4.0	5.0	K1	M1
	U2J (EIA)	630Vdc	15000pF±5%	7.5×5.5	4.0	5.0	K1	M1
	U2J (EIA)	630Vdc	22000pF±5%	7.5×5.5	4.0	5.0	K1	M1
	U2J (EIA)	630Vdc 630Vdc	33000pF±5% 47000pF±5%	7.5×8.0 7.5×8.0	4.0	5.0	B1 B1	E1
	U2J (EIA)	630Vdc		7.5×8.0 7.7×13.0		5.0	B1 B1	E1 E1
RDE7U2J943JU	U2J (EIA)	030 VUC	94000pF±5%	1.1×13.0	4.0			

4

Continued on the following page. earrow



Continued from the preceding page. \searrow

continued from the preceding pe	-60							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDE7U3A100J2	U2J (EIA)	1000Vdc	10pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A150J2	U2J (EIA)	1000Vdc	15pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A220J2	U2J (EIA)	1000Vdc	22pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A330J2	U2J (EIA)	1000Vdc	33pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A470J2	U2J (EIA)	1000Vdc	47pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A680J2	U2J (EIA)	1000Vdc	68pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A101J2	U2J (EIA)	1000Vdc	100pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A151J2	U2J (EIA)	1000Vdc	150pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A221J2	U2J (EIA)	1000Vdc	220pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A331J2	U2J (EIA)	1000Vdc	330pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A471J2	U2J (EIA)	1000Vdc	470pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A681J2	U2J (EIA)	1000Vdc	680pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A102J2	U2J (EIA)	1000Vdc	1000pF±5%	5.5×4.0	3.15	5.0	K1	M1
RDE7U3A152J3	U2J (EIA)	1000Vdc	1500pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U3A222J3 H03	U2J (EIA)	1000Vdc	2200pF±5%	5.5×5.0	4.0	5.0	K1	M1
RDE7U3A332J4 H03	U2J (EIA)	1000Vdc	3300pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U3A472J4 H03	U2J (EIA)	1000Vdc	4700pF±5%	7.5×5.5	4.0	5.0	K1	M1
RDE7U3A682J5	U2J (EIA)	1000Vdc	6800pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U3A103J5	U2J (EIA)	1000Vdc	10000pF±5%	7.5×8.0	4.0	5.0	B1	E1
RDE7U3A203JU	U2J (EIA)	1000Vdc	20000pF±5%	7.7×13.0	4.0	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

High Dielectric Constant Type, X7R/X7S Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDER71E104K0 H03	X7R (EIA)	25Vdc	0.1µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71E104K0 H03	X7R (EIA)	25Vdc	0.1µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E224K0	X7S (EIA)	25Vdc	0.22µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E224K0 H03	X7S (EIA)	25Vdc	0.22µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E474K0 H03	X7S (EIA)	25Vdc	0.47µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E474K0 H03	X7S (EIA)	25Vdc	0.47µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E105K0 H03	X7S (EIA)	25Vdc	1.0µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDEC71E105K0 H03	X7S (EIA)	25Vdc	1.0µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDEC71E225K1 H03	X7S (EIA)	25Vdc	2.2µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDEC71E225K1 H03	X7S (EIA)	25Vdc	2.2µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDEC71E475K2 H03	X7S (EIA)	25Vdc	4.7µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDEC71E475K2 H03	X7S (EIA)	25Vdc	4.7µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71E106K2 H03	X7S (EIA)	25Vdc	10µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDEC71E106K2 H03	X7S (EIA)	25Vdc	10µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71E226K3 H03	X7S (EIA)	25Vdc	22µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC71E226K3 H03	X7S (EIA)	25Vdc	22µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC71E476MW H03	X7S (EIA)	25Vdc	47µF±20%	5.5×7.5	4.0	5.0	K1	M1
RDER71H221K0 H03	X7R (EIA)	50Vdc	220pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H221K0 H03	X7R (EIA)	50Vdc	220pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H331K0 H03	X7R (EIA)	50Vdc	330pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H331K0 H03	X7R (EIA)	50Vdc	330pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H471K0 H03	X7R (EIA)	50Vdc	470pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H471K0 H03	X7R (EIA)	50Vdc	470pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H681K0 H03	X7R (EIA)	50Vdc	680pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H681K0 H03	X7R (EIA)	50Vdc	680pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H102K0 H03	X7R (EIA)	50Vdc	1000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H102K0 H03	X7R (EIA)	50Vdc	1000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H152K0 H03	X7R (EIA)	50Vdc	1500pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H152K0 H03	X7R (EIA)	50Vdc	1500pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H222K0 H03	X7R (EIA)	50Vdc	2200pF±10%	4.0×3.5	2.5	5.0	K1	M1



Continued from the preceding page. \searrow

Continued from the preceding pa	ige. 🌶							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDER71H222K0 H03	X7R (EIA)	50Vdc	2200pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H332K0 H03	X7R (EIA)	50Vdc	3300pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H332K0 H03	X7R (EIA)	50Vdc	3300pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H472K0 H03	X7R (EIA)	50Vdc	4700pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H472K0 H03	X7R (EIA)	50Vdc	4700pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H682K0 H03	X7R (EIA)	50Vdc	6800pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H682K0 H03	X7R (EIA)	50Vdc	6800pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H103K0 H03	X7R (EIA)	50Vdc	10000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H103K0 H03	X7R (EIA)	50Vdc	10000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H153K0 H03	X7R (EIA)	50Vdc	15000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H153K0 H03	X7R (EIA)	50Vdc	15000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H223K0 H03	X7R (EIA)	50Vdc	22000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H223K0 H03	X7R (EIA)	50Vdc	22000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H333K0 H03	X7R (EIA)	50Vdc	33000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H333K0 H03	X7R (EIA)	50Vdc	33000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H473K0 H03	X7R (EIA)	50Vdc	47000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H473K0 H03	X7R (EIA)	50Vdc	47000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H683K0 H03	X7R (EIA)	50Vdc	68000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H683K0 H03	X7R (EIA)	50Vdc	68000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H104K0 H03	X7R (EIA)	50Vdc	0.1µF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER71H104K0 H03	X7R (EIA)	50Vdc	0.1µF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER71H154K1	X7R (EIA)	50Vdc	0.15µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H154K1 H03	X7R (EIA)	50Vdc	0.15µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H224K1 H03	X7R (EIA)	50Vdc	0.22µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H224K1 H03	X7R (EIA)	50Vdc	0.22µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H334K1 H03	X7R (EIA)	50Vdc	0.33µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H334K1	X7R (EIA)	50Vdc	0.33µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H474K1 H03	X7R (EIA)	50Vdc	0.47µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER71H474K1	X7R (EIA)	50Vdc	0.47µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H684K2 H03	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H684K2 H03	X7R (EIA)	50Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71H105K1 H03	X7S (EIA)	50Vdc	1.0µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDEC71H105K1	X7S (EIA)	50Vdc	1.0µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER71H105K2	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H105K2	X7R (EIA)	50Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H155K2	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H155K2	X7R (EIA)	50Vdc	1.5µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H225K2 H03	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER71H225K2 H03	X7R (EIA)	50Vdc	2.2µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER71H335K3	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDER71H335K3 H03	X7R (EIA)	50Vdc	3.3µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC71H475K2 H03	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	2.5	P1	\$1
RDEC71H475K2 H03	X7S (EIA)	50Vdc	4.7µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC71H106K3	X7S (EIA)	50Vdc	10µF±10%	5.5×5.0	4.0	2.5	P1	S1
	X7S (EIA)	50Vdc	10µF±10%	5.5×5.0	4.0	5.0	K1	M1
	X7S (EIA)	50Vdc	22µF±20%	5.5×7.5	4.0	5.0	K1	M1
	X7R (EIA)	100Vdc	220pF±10%	4.0×3.5	2.5	5.0	K1	M1
	X7R (EIA)	100Vdc	220pF±10%	5.0×3.5	2.5	2.5	P1	S1
	X7R (EIA)	100Vdc	330pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A331K0 H03 RDER72A471K0 H03	X7R (EIA)	100Vdc 100Vdc	330pF±10%	5.0×3.5 4.0×3.5	2.5 2.5	2.5	P1 K1	S1 M1
RDER72A471K0H03_	X7R (EIA) X7R (EIA)	100Vdc 100Vdc	470pF±10% 470pF±10%	4.0×3.5 5.0×3.5	2.5	2.5	P1	
RDER72A471K0H03	X7R (EIA) X7R (EIA)	100Vdc 100Vdc	680pF±10%	4.0×3.5	2.5	5.0	Р1 К1	 M1
RDER72A681K0H03_	X7R (EIA) X7R (EIA)	100Vdc 100Vdc	680pF±10%	4.0×3.5 5.0×3.5	2.5	2.5	P1	
RDER72A001K0H03_	X7R (EIA)	100Vdc 100Vdc	1000pF±10%	4.0×3.5	2.5	5.0	K1	 M1
RDER72A102K0H03_	X7R (EIA)	100Vdc	1000pF±10%	5.0×3.5	2.5	2.5	P1	
RDER72A152K0H03_	X7R (EIA)	100Vdc	1500pF±10%	4.0×3.5	2.5	5.0	K1	 M1
	ATR (EIA)	100 Muc	1200hi 710 %	U^J.J	2.5	5.0	I/T	1.17

53



Continued from the preceding page. \searrow

Continued from the preceding pa	ıge. 🌶							
Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDER72A152K0 H03	X7R (EIA)	100Vdc	1500pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A222K0 H03	X7R (EIA)	100Vdc	2200pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A332K0 H03	X7R (EIA)	100Vdc	3300pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A332K0 H03	X7R (EIA)	100Vdc	3300pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A472K0 H03	X7R (EIA)	100Vdc	4700pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A472K0 H03	X7R (EIA)	100Vdc	4700pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A682K0 H03	X7R (EIA)	100Vdc	6800pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A103K0 H03	X7R (EIA)	100Vdc	10000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A153K0 H03	X7R (EIA)	100Vdc	15000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A153K0 H03	X7R (EIA)	100Vdc	15000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A223K0 H03	X7R (EIA)	100Vdc	22000pF±10%	4.0×3.5	2.5	5.0	K1	M1
RDER72A223K0 H03	X7R (EIA)	100Vdc	22000pF±10%	5.0×3.5	2.5	2.5	P1	S1
RDER72A333K1	X7R (EIA)	100Vdc	33000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A333K1	X7R (EIA)	100Vdc	33000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A473K1 H03	X7R (EIA)	100Vdc	47000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A473K1 H03	X7R (EIA)	100Vdc	47000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A683K1 H03	X7R (EIA)	100Vdc	68000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A683K1	X7R (EIA)	100Vdc	68000pF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A104K1 H03	X7R (EIA)	100Vdc	0.1µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A104K1 H03	X7R (EIA)	100Vdc	0.1µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A154K2 H03	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A154K2 H03	X7R (EIA)	100Vdc	0.15µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72A224K1 H03	X7R (EIA)	100Vdc	0.22µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A224K1 H03	X7R (EIA)	100Vdc	0.22µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A334K1 H03	X7R (EIA)	100Vdc	0.33µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A334K1 H03	X7R (EIA)	100Vdc	0.33µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A474K1 H03	X7R (EIA)	100Vdc	0.47µF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72A474K1	X7R (EIA)	100Vdc	0.47µF±10%	5.0×3.5	3.15	2.5	P1	S1
RDER72A684K2 H03	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A684K2 H03	X7R (EIA)	100Vdc	0.68µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72A105K2 H03	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	2.5	P1	S1
RDER72A105K2 H03	X7R (EIA)	100Vdc	1.0µF±10%	5.5×4.0	3.15	5.0	K1	M1
RDEC72A155K3 H03	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC72A155K3	X7S (EIA)	100Vdc	1.5µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC72A225K3	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	2.5	P1	S1
RDEC72A225K3 H03	X7S (EIA)	100Vdc	2.2µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDEC72A475MW	. ,	100Vdc	4.7µF±20%	5.5×7.5	4.0	5.0	K1	M1
RDER72E102K1 H03	X7R (EIA)	250Vdc	1000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E152K1 H03	X7R (EIA)	250Vdc	1500pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E222K1 H03	X7R (EIA)	250Vdc	2200pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E332K1 H03	X7R (EIA)	250Vdc	3300pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E472K1 H03	X7R (EIA)	250Vdc	4700pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72E682K1 H03	X7R (EIA)	250Vdc	6800pF±10%	4.5×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	10000pF±10%	4.5×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	15000pF±10%	4.5×3.5	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	22000pF±10%	4.5×3.5	3.15	5.0 E 0	K1	M1
	X7R (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0 E 0	K1	M1
	X7R (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0 E.O	K1	M1
	X7R (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0 E 0	K1	M1
	X7R (EIA)	250Vdc	0.10µF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	250Vdc	0.15µF±10%	5.5×5.0	3.15	5.0	K1	M1
RDER72E224K3 H03 RDER72E334K4 H03	X7R (EIA) X7R (EIA)	250Vdc 250Vdc	0.22µF±10% 0.33µF±10%	5.5×5.0 7.5×5.5	3.15 4.0	5.0	K1 K1	M1 M1
RDER72E334K4H03_	X7R (EIA) X7R (EIA)	250Vdc 250Vdc	0.33µF±10% 0.47µF±10%	7.5×5.5 7.5×5.5	4.0	5.0	KI K1	M1
	AIR (EIA)	200 vuc	0.47μΓ±10%	0.0x0.0	4.0	1		

Continued from the preceding page. \searrow

4

Part Number	Temp.	Rated	Capacitance	Dimensions LxW	Dimension T	Lead Space F	Lead Style Code	Lead Style Code
	Char.	Voltage		(mm)	(mm)	(mm)	Bulk	Taping
RDER72E684K5	X7R (EIA)	250Vdc	0.68µF±10%	7.5×7.5	4.0	5.0	B1	E1
RDER72E105K5	X7R (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.0	5.0	B1	E1
RDER72E225MU	X7R (EIA)	250Vdc	2.2µF±20%	7.7×12.5	4.0	5.0	B1	E1
RDER72H102K1 H03	X7R (EIA)	500Vdc	1000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H152K1	X7R (EIA)	500Vdc	1500pF±10%	4.5×3.5	3.15	5.0	K1	M1
	X7R (EIA)	500Vdc	2200pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H332K1 H03	X7R (EIA)	500Vdc	3300pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H472K1 H03	X7R (EIA)	500Vdc	4700pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H682K1 H03	X7R (EIA)	500Vdc	6800pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H103K1 H03	X7R (EIA)	500Vdc	10000pF±10%	4.5×3.5	3.15	5.0	K1	M1
RDER72H153K2 H03	X7R (EIA)	500Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72H223K2 H03	X7R (EIA)	500Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72H333K2 H03	X7R (EIA)	500Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	500Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72H683K3	X7R (EIA)	500Vdc	68000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDER72H104K3 H03	X7R (EIA)	500Vdc	0.1µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDER72H154K4 H03	X7R (EIA)	500Vdc	0.15µF±10%	7.5×5.5	4.0	5.0	K1	M1
	X7R (EIA)	500Vdc	0.22µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDER72H334K5	X7R (EIA)	500Vdc	0.33µF±10%	7.5×7.5	4.0	5.0	B1	E1
	X7R (EIA)	500Vdc	0.47µF±10%	7.5×7.5	4.0	5.0	B1	E1
	X7R (EIA)	500Vdc	0.68µF±20%	7.7×12.5	4.0	5.0	B1	E1
RDER72H105MU	X7R (EIA)	500Vdc	1.0µF±20%	7.7×12.5	4.0	5.0	B1	E1
RDER72J102K2 H03	X7R (EIA)	630Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J152K2 H03	X7R (EIA)	630Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J222K2 H03	X7R (EIA)	630Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J332K2 H03	X7R (EIA)	630Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J472K2 H03	X7R (EIA)	630Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER72J682K2 H03	X7R (EIA)	630Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
	X7R (EIA)	630Vdc 630Vdc	22000pF±10%	5.5×4.0	3.15 4.0	5.0 E.O	K1	M1 M1
	X7R (EIA)		33000pF±10%	5.5×5.0		5.0	K1	
	X7R (EIA)	630Vdc	47000pF±10%	5.5×5.0	4.0		K1	M1
RDER72J683K4_H03_ RDER72J104K4_H03	X7R (EIA) X7R (EIA)	630Vdc 630Vdc	68000pF±10%	7.5×5.5 7.5×5.5	4.0	5.0	K1 K1	M1 M1
RDER72J154K5 H03	X7R (EIA)	630Vdc	0.10µF±10% 0.15µF±10%	7.5×8.0	4.0	5.0	B1	E1
RDER72J224K5 H03	X7R (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.0	5.0	B1 B1	E1
RDER72J474MU H03	X7R (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.0	5.0	B1 B1	E1
RDER73A471K2 H03	X7R (EIA)	1000Vdc	470pF±10%	5.5×4.0	3.15	5.0	K1	 M1
RDER73A681K2 H03	X7R (EIA)	1000Vdc	680pF±10%	5.5×4.0	3.15	5.0	K1 K1	M1
RDER73A102K2 H03	X7R (EIA)	1000Vdc	1000pF±10%	5.5×4.0	3.15	5.0	K1 K1	 M1
RDER73A152K2 H03	X7R (EIA)	1000Vdc	1500pF±10%	5.5×4.0	3.15	5.0	K1 K1	 M1
RDER73A132K2 H03	X7R (EIA)	1000Vdc	2200pF±10%	5.5×4.0	3.15	5.0	K1 K1	 M1
RDER73A332K2 H03	X7R (EIA)	1000Vdc	3300pF±10%	5.5×4.0	3.15	5.0	K1 K1	 M1
RDER73A472K2 H03	X7R (EIA)	1000Vdc	4700pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A682K2 H03	X7R (EIA)	1000Vdc	6800pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDER73A103K2 H03	X7R (EIA)	1000Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1 K1	 M1
RDER73A153K3 H03	X7R (EIA)	1000Vdc	15000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDER73A223K3 H03	X7R (EIA)	1000Vdc	22000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDER73A333K4 H03	X7R (EIA)	1000Vdc	33000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RDER73A473K4 H03	X7R (EIA)	1000Vdc	47000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RDER73A683K5	X7R (EIA)	1000Vdc	68000pF±10%	7.5×8.0	4.0	5.0	B1	E1
RDER73A104K5	X7R (EIA)	1000Vdc	0.10µF±10%	7.5×8.0	4.0	5.0	B1	E1
RDER73A224MU H03	X7R (EIA)	1000Vdc	0.22µF±20%	7.7×13.0	4.0	5.0	B1	E1
		2000 000				0.0		

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

muRata

			S	pe <u>ci</u> f	cations				
No.	Iter	m	Temperature Compensating	Type	High Dielectric Constant Type		Test Meth	od	
1	Operating Ten Range	nperature	-55 to +125°C		Char. X7R, X7S: -55 to +125°C		-		
2	Appearance		No defects or abnormalitie	es		Visual inspecti	on		
3	Dimension and	d Marking	See previous pages			Visual inspecti	on, Vernier Calip	er	
		Between Terminals	No defects or abnormalitie	25		voltages of Tal for 1 to 5s. (Cf Temperature Compensating Type High Dielectric	ble are applied be arge/Discharge DC50V, DC100V DC250V DC630V DC1kV	amaged when test etween the terminals current ≤ 50mA) Test Voltage 300% of the rated voltage 200% of the rated voltage 130% of the rated voltage 250% of the rated voltage 250% of the rated voltage 150% of the rated voltage 150% of the rated voltage	
4	Dielectric Strength	Body Insulation	No defects or abnormalitie	25		diameter so th short-circuited approximately as shown in th between capae metal balls. (Ci current ≦ 50m. Rated Vo	metal balls of 11 at each terminal l, is kept 2mm from the be e figure, for 1 to citor terminals an harge/Discharge A) bltage V,DC100V 2509 500V 2009	Approx. 2mm Approx. 4mm Approx. 4mm Approx	
5	Insulation Resistance	Between Terminals	More than 10000M or 500MΩ • μF (Whichever is smaller)	Rated DC25 More (Which Rated DC25 More	igh Dielectric Constant Type d voltage: SV, DC50V, DC100V e than 10000M or 500MΩ • μF shever is smaller) d voltage: S0V, DC500V, DC630V, DC1kV e than 10000M or 100MΩ • μF shever is smaller)	The insulation resistance should be measured with DC voltage not exceeding the rated voltage (DC5 in case of rated vlotage: DC500V, DC630V, DC11 normal temperature and humidity and within 2min charging. (Charge/Discharge current ≤ 50mA)		ated voltage (DC500V)V, DC630V, DC1kV) at ity and within 2min of	
6	Capacitance		Within the specified tolera	nce		The capacitan	ce, Q/D.F. should	be measured at 25°C	
7	Q/Dissipation Factor (D.F.)		30pF min.: Q ≧ 1000 30pF max.: Q ≧ 400+20C C: Nominal capacitance (pl		Char. X7R: 0.025 max. Char. X7S: 0.125 max.	at the frequent Temperature C Capacitanc C ≦ 1000pl C > 1000pl High Dielectric Capacitanc C ≦ 10µF	cy and voltage sl compensating Ty e Frequence f 1±0.1MH f 1±0.1kH Constant Type e Frequence 1±0.1kH	y Voltage z AC0.5 to 5V (r.m.s.) z AC1±0.2V (r.m.s.) y Voltage z AC1±0.2V (r.m.s.)	
						C > 10µF	120±24H	z AC0.5±0.1V (r.m.s.)	

Continued on the following page. earrow
ea

Continued from the preceding page. \searrow

		preceding pa		Sp <u>ecif</u> i	cations			
No.	Ite	m	Temperat	ture Compensating Type	High Dielectric Constant Type		Test Method	
8	Capacitance T	•	Char. C0G	Temperature Coefficient 25 to 125°C : 0±30ppm/°C -55 to 25°C : 0+30/-72ppm/°C	Char. Capacitance Change X7R Within ± 15%	min at each specifi The temperature of capacitance measu cycling the temper through 5 (-55 to - within the specifier coefficient and cap Step	Temperature (°C)	
	Characteristic	s	U2J -750±120ppm/°C -55 to 25°C: -750+120/-347ppm/°C		X75 Within ± 22%	Perform a heat tre	25±2 -55±3 25±2 125±3 25±2 r high dielectric constant type) atment at 150+0/-10°C for 1h, and	
9	Ferminal Strength		Termina	tion not to be broken or	loosened	then let sit at room temperature for 24±2h. As in the figure, fix the capacitor body, apply the force gradually to each lead in the radial direction of the capacitor until reaching 10N and then keep the force applied for 10±1s.		
		Bending Strength	Termina	tion not to be broken or	loosened	and then bent 90° direction. Each wir	uld be subjected to a force of 2.5N at the point of egress in one e is then returned to the original 20° in the opposite direction at the er 2 to 3s.	
		Appearance	No defeo	cts or abnormalities		The capacitor should be firmly soldered to the supporting lead wire and vibrated at a frequency range of 10 to 55Hz, 1.5mm in total amplitude, with about a		
	Vibration	Capacitance	Within tl	he specified tolerance				
10	Resistance	Q/D.F.	30pF ma	n.: Q ≧ 1000 ax.: Q ≧ 400+20C nal capacitance (pF)	Char. X7R: 0.025 max. Char. X7S: 0.125 max.	1 minute rate of vi	bration change from 10 to 55Hz Apply for a total of 6h, 2h each in 3	
11	1 Solderability of Leads			e should be soldered wi a over 3/4 of the circum	th uniform coating on the axial ferential direction.	The terminal of a capacitor is dipped into a 25% ethano (JIS-K-8101) solution of rosin (JIS-K-5902) and then into molten solder for 2±0.5s. In both cases the depth of dipping is up to about 1.5 to 2mm from the terminal body. Temp. of solder: 245±5°C Lead Free Solder (Sn-3.0Ag-0.5Cu) 235±5°C H60A or H63A Eutectic Solder		
	Resistance to Soldering Heat (Non-Preheat)		specifica	tions in the following ta	aracteristics should satisfy the blue.	solder 1.5 to 2.0m	uld be immersed in the melted m from the root of terminal at	
10	(non-rieneat)	Appearance	No defeo	cts or abnormalities		260±5°C for 7.5+0 Pre-treatment	//-15.	
12 ' 1		Capacitance Change		2.5% or ±0.25pF ver is larger)	Char. X7R: Within ±7.5% Char. X7S: Within ±10%	Capacitor should I	be stored at 150+0/-10°C for 1h, n temperature for 24±2h	
-		Dielectric Strength (Between Terminals)	No defeo	cts		before initial measurement. (For Char. X7R, X7S) Post-treatment Capacitor should be stored for 24±2h at room condition*.		

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. earrow
ea

4

Continued from the preceding page. \searrow

	lter	~	Specifi	cations		Tost Mothed			
No.	Iter	<u> </u>	Temperature Compensating Type	High Dielectric Constant Type		Test Method			
	Resistance to Soldering Heat	:	The measured and observed cha specifications in the following ta		First the c 60+0/-5s.	apacitor should be stored at 1	20+0/-5°C for		
	(On-Preheat)	Appearance	No defects or abnormalities			lead wires should be immersed to 2.0mm from the root of ter			
12		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Char. X7R: Within ±7.5% Char. X7S: Within ±10%	260±5°C f Pre-treatr	for 7.5+0/-1s. nent			
2		Dielectric Strength (Between Terminals)	No defects		then place initial mea Post-treat	should be stored for 24±2h at	2h before S)		
	Resistance to Soldering Heat	:	The measured and observed cha specifications in the following ta		Test condition Temperrature of iron-tip: 350±10°C				
	(Soldering	Appearance	No defects or abnormalities		-	time: 3.5±0.5s.			
12	Iron Method)	Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)	Char. X7R: Within ±7.5% Char. X7S: Within ±10%	 Soldering position Straight Lead: 1.5 to 2.0mm from the root of termin Crimp Lead: 1.5 to 2.0mm from the end of lead bence 				
' 3		Dielectric Strength (Between Terminals)	No defects		Pre-treatment Capacitor should be stored at 150+0/-10°C for 1h, then place at room temperature for 24±2h before initial measurement. (For Char. X7R, X7S) Post-treatment Capacitor should be stored for 24±2h at room condition*.				
_		Appearance	No defects or abnormalities						
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Char. X7R, X7S: Within ±12.5%	cycles.	emperature			
		30pF min.: Q ≧ 350			Set for 24±2h at room temperature, then measure.				
13	Temperature	Q/D.F.	10pF to 30pF: Q ≧ 275+5C/2 10pF max.: Q ≧ 200+10C C: Nominal capacitance (pF)	Char. X7R: 0.05 max. Char. X7S: 0.2 max.	Step 1 2	Temperature (°C) Min. Operating Temp. ±3 Room Temp.	Time (min) 30±3 3 max.		
	Cycle	Insulation Resistance	1000MΩ, 50MΩ • μF min. (which	never is smaller)	3	Max. Operating Temp. ±3 Room Temp.	30±3 3 max.		
		Dielectric Strength (Between Terminals)	No defects or abnormalities		Perform a	ment (for high dielectric consta heat treatment at 150+0/-10 t at room temperature for 24±	°C for 1h, and		
		Appearance	No defects or abnormalities						
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Char. X7R, X7S: Within ±12.5%		pacitor at 40±2°C and relative of 500^{+24}_{O} h.	humidity of		
14	Humidity (Steady State)	Q/D.F.	30pF min.: Q \ge 350 10pF to 30pF: Q \ge 275+5C/2 10pF max.: Q \ge 200+10C C: Nominal capacitance (pF)	pF min.: $Q \ge 350$ pF to $30pF: Q \ge 275+5C/2$ pF max.: $Q \ge 200+10C$ Char. X7R: 0.05 max. Char. X7S: 0.2 max.Remove and set for $24\pm 2h$ at remeasure. • Pretreatment (for high dielect Perform a heat treatment at 15)					
		Insulation Resistance	1000MΩ, 50MΩ • μF min. (which	never is smaller)		t at room temperature for 24±	211.		
		Appearance	No defects or abnormalities			· · · · · · · · · · · · · · · · · · ·	(0.000 l		
		Capacitance Change	Within ±5% or ±0.5pF (whichever is larger)	Char. X7R, X7S: Within ±12.5%	in 90 to 95	rated voltage for 500 ^{±2} 0 ⁴ h at 4 5% humidity. nd set for 24±2h at room temp			
15	Humidity Load	Q/D.F.	30pF min.: Q ≧ 200 30pF max.: Q ≧ 100+10C/3 C: Nominal capacitance (pF)	Char. X7R: 0.05 max. Char. X7S: 0.2 max.	 Remove and set for 24±2h at room temperature, then measure. (Charge/Discharge current ≤ 50mA) Pretreatment (for high dielectric constant type) Perform a heat treatment at 150+0/-10°C for 1h, and then let sit at room temperature for 24±2h. 				
		Insulation	500MΩ or 25MΩ • μF min. (whic						

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. earrow
ea

Continued from the preceding page. \searrow

No.	lter		Specifi	cations	Test Method				
INO.	Iter	m	Temperature Compensating Type	High Dielectric Constant Type		Test Met	noa		
		Appearance	No defects or abnormalities		Apply voltage in Table for 1000^{+48}_{-0} h at the				
		Capacitance	Within ±3% or ±0.3pF	Char. X7R, X7S:	Remove and s	m operating temperature±3°C. and set for 24±2h at room temperature, then ٤. (Charge/Discharge current ≦ 50mA)			
		Change	(whichever is larger)	Within ±12.5%		Rated Voltage	Test Voltage		
	High				Temperature Compensating	DC50V, DC100V, DC250V	150% of the rated voltage		
16	Temperature		30pF min.: Q ≧ 350			DC630V, DC1kV	120% of the rated voltage		
	Load	Q/D.F.	10pF to 30pF: Q ≧ 275+5C/2	Char. X7R: 0.04 max. Char. X7S: 0.2 max.	High Dielectric Constant Type	DC25V, DC50V, DC100V, DC250V	150% of the rated voltage		
			10pF max.: Q ≧ 200+10C C: Nominal capacitance (pF)			DC500V, DC630V	120% of the rated voltage		
					DC1kV 110% of the rated voltage				
		Insulation Resistance	1000ΜΩ, 50ΜΩ • μF min. (which	never is smaller)	 Pretreatment (for high dielectric constant type) Appy test voltage for 1h at test temperature. Remove and set for 24±2h at room temperature. 				
		Appearance	No defects or abnormalities		The capacitor should be fully immersed, unagitated, in reagent at 20 to 25°C for 30±5s and then removed gently. Marking on the surface of the capacitor should immediately be visually examined. Reagent: • Isopropyl alcohol				
17	Solvent Resistance	Marking	Legible						

Leaded MLCC for General Purpose

RDE Series Large Capacitance and High Allowable Ripple Current (DC250V-DC630V)

Features

- 1. Higher capacitance with DC-Bias; approximately 40% higher than X7R under loaded rated voltage.
- 2. Meet LF (Lead Free) and HF (Halogen Free)
- 3. Allowable higher ripple current
- 4. Reduces acoustic noise

Approximately 15dB reduction in comparison to leaded X7R characteristics parts. Approximately 30dB reduction in comparison to SMD X7R characteristics part because the contact area is smaller than a SMD.

Applications

- 1. DC smoothing capacitor for LED bulb
- 2. PFC capacitor for general use SMPS
- 3. Replace Al-E capacitor for long-life equipment

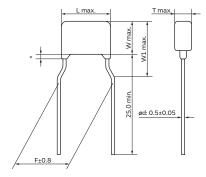
Dimensions

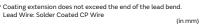
5

Dimensions and	DC Rated	Dimensions (mm)						
Lead Style Code	Voltage	L	w	W1	Т	F	d	
2K1/2M1	250V/450V/630V	5.5	4.0	6.0		5.0	0.5	
3K1/3M1	250V/450V/630V	5.5	5.0	7.5	See	5.0	0.5	
4K1/4M1	250V/450V/630V	7.5	5.5	8.0	the individual product	5.0	0.5	
5B1/5E1	250V/450V/630V	7.5	7.5*	-	specification	5.0	0.5	
UB1/UE1	250V/450V/630V	7.7	12.5*	-		5.0	0.5	

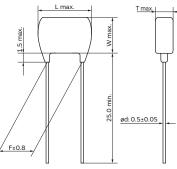
*DC630V: W+0.5mm











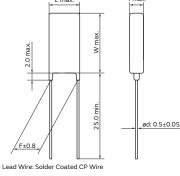
Dimensions code: 5 Lead style code: B1

· Lead Wire: Solder Coated CP Wire

(in mm)

Dimensions code: U

Lead style code: B1



(in mm)



Marking

Rated Voltage	DC250V	DC450V	DC630V				
Dimensions Temp. Char.		Х7Т					
2	(CH 683) K47	(C+153 K97)	(CH 153)				
3, 8	((<u>)</u> 334 K47	(() 104 K97	(C1223) K77)				
5, U	(M 225 M47	(M 474 K97)	(474 M77)				
Temperature Characteristics	Marked with code (X7T char.: 7)		<u> </u>				
Nominal Capacitance	Marked with 3 figures						
Capacitance Tolerance	Marked with code						
Rated Voltage	Marked with code (DC250V: 4, DC450V: 9, DC630V: 7)						
Manufacturer's Identification	Marked with M						

High Dielectric Constant Type, X7T Characteristics

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDED72E333K2 H03	X7T (EIA)	250Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E473K2 H03	X7T (EIA)	250Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E683K2 H03	X7T (EIA)	250Vdc	68000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72E104K3	X7T (EIA)	250Vdc	0.10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72E154K3 H03	X7T (EIA)	250Vdc	0.15µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72E224K4 H03	X7T (EIA)	250Vdc	0.22µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72E334K4	X7T (EIA)	250Vdc	0.33µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72E474K5 H03	X7T (EIA)	250Vdc	0.47µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E684K5 H03	X7T (EIA)	250Vdc	0.68µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E105K5 H03	X7T (EIA)	250Vdc	1.0µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72E225MU H03	X7T (EIA)	250Vdc	2.2µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72W103K2 H03	X7T (EIA)	450Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W153K2 H03	X7T (EIA)	450Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W223K2 H03	X7T (EIA)	450Vdc	22000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W333K2 H03	X7T (EIA)	450Vdc	33000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W473K2 H03	X7T (EIA)	450Vdc	47000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72W683K3 H03	X7T (EIA)	450Vdc	68000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72W104K3 H03	X7T (EIA)	450Vdc	0.10µF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72W154K4 H03	X7T (EIA)	450Vdc	0.15µF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72W224K5 H03	X7T (EIA)	450Vdc	0.22µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W334K5 H03	X7T (EIA)	450Vdc	0.33µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W474K5 H03	X7T (EIA)	450Vdc	0.47µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W564K5 H03	X7T (EIA)	450Vdc	0.56µF±10%	7.5×7.5	4.5	5.0	B1	E1
RDED72W105MU	X7T (EIA)	450Vdc	1.0µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72W125MU	X7T (EIA)	450Vdc	1.2µF±20%	7.7×12.5	4.5	5.0	B1	E1
RDED72J103K2 H03	X7T (EIA)	630Vdc	10000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72J153K2 H03	X7T (EIA)	630Vdc	15000pF±10%	5.5×4.0	3.15	5.0	K1	M1
RDED72J223K3 H03	X7T (EIA)	630Vdc	22000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J333K3 H03	X7T (EIA)	630Vdc	33000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J473K3 H03	X7T (EIA)	630Vdc	47000pF±10%	5.5×5.0	4.0	5.0	K1	M1
RDED72J683K4 H03	X7T (EIA)	630Vdc	68000pF±10%	7.5×5.5	4.0	5.0	K1	M1
RDED72J104K5 H03	X7T (EIA)	630Vdc	0.10µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J154K5 H03	X7T (EIA)	630Vdc	0.15µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J224K5 H03	X7T (EIA)	630Vdc	0.22µF±10%	7.5×8.0	4.5	5.0	B1	E1

Continued on the following page. earrow
arrow
arrow

Note
 • Please read rating and ①CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
 • This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

Continued from the preceding page. \searrow

Part Number	Temp. Char.	Rated Voltage	Capacitance	Dimensions LxW (mm)	Dimension T (mm)	Lead Space F (mm)	Lead Style Code Bulk	Lead Style Code Taping
RDED72J274K5	X7T (EIA)	630Vdc	0.27µF±10%	7.5×8.0	4.5	5.0	B1	E1
RDED72J474MU H03	X7T (EIA)	630Vdc	0.47µF±20%	7.7×13.0	4.5	5.0	B1	E1
RDED72J564MU	X7T (EIA)	630Vdc	0.56µF±20%	7.7×13.0	4.5	5.0	B1	E1

Two blank columns are filled with the lead style code. Please refer to the 3 columns on the right for the appropriate code.

The last blank column is filled with the packaging code. (B: bulk, A: ammo pack)

No.	Ite	m	Specifications		Test Method		
1	Operating Ten Range	nperature	-55 to +125°C		-		
2	Appearance		No defects or abnormalities	Visual inspection			
3	Dimension and	d Marking	See previous pages	Visual inspection,	Vernier Caliper		
		Between Terminals	No defects or abnormalities		uld not be damaged when voltage between the terminations e current ≦ 50mA) Test Voltage 200% of the rated voltage 150% of the rated voltage 120% of the rated voltage		
4	Dielectric Strength Body Insulation		No defects or abnormalities	The capacitor is pl container with me diameter so that e short-circuit, is ke approximately 2m as shown in the fig of the rated DC vo impressed for 1 to capacitor terminal balls. (Charge/Diso ≦ 50mA)	tal balls of 1mm each terminal, pt m from the balls gure, and 200% Itage is 55 between Is and metal		
5	Insulation Resistance	Between Terminals	More than 10000MΩ or 100MΩ • $\mu F,$ Whichever is smaller	The insulation resistance should be measured with DC500V (DC250V in case of rated voltage: DC250V,DC450V) at normal temperature and humidity and within 2min of charging. (Charge/Discharge current ≦ 50mA)			
6	Capacitance		Within the specified tolerance	The capacitance/D.F. should be measured at the			
7	Dissipation Fa	ctor (D.F.)	0.01 max.	AC1±0.2V(r.m.s.).	1kHz and a voltage of		
	Capacitance			The capacitance change should be measured after5min at each specified temperature stage.StepTemperature (°C)125±2			
8	Temperature Characteristic	s	Within +22/-33%	$ \begin{array}{r} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ \end{array} $	25±2 -55±3 25±2 125±3 25±2		
9	9 Terminal Strength		Termination not to be broken or loosened	gradually to each	the capacitor body, apply the force lead in the radial direction of the ching 10N and then keep the force		
		Bending Strength	Termination not to be broken or loosened	Each lead wire should be subjected to a force o and then bent 90° at the point of egress in one direction. Each wire is then returned to the orig position and bent 90° in the opposite direction rate of one bend per 2 to 3s.			
		Appearance	No defects or abnormalities		uld be firmly soldered to the		
	Vibration	Capacitance	Within the specified tolerance		ire and vibrated at a frequency range mm in total amplitude, with about a		
10	Resistance	D.F.	0.01 max.	1 minute rate of vi	bration change from 10 to 55Hz Apply for a total of 6h, 2h each in 3		

Continued on the following page. earrow

Continued from the preceding page. \searrow

10.0 0.0 E		
ped into a solution of JIS-K-5902) (25% rosin ito molten solder (JIS- s the depth of n from the terminal Solder (Sn-3.0Ag-0.5Cu) 163A Eutectic Solder		
ed in the melted		
ot of terminal at		
50+0/-10°C for 1h, e for 24±2h before		
24±2h at room		
red at 120+0/-5°C for		
nmersed in the melted ot of terminal at		
50.0/1000 few 1k		
50+0/-10°C for 1h, e for 24±2h before 24±2h at room		
.0°C		
m the root of terminal. the end of lead bend.		
tor should be stored at 150+0/-10°C for 1h, ace at room temperature for 24±2h before neasurement. eatment tor should be stored for 24±2h at room on*.		
ed to 5 temperature		
) Time (min)		
30±3 3 max.		
30±3 3 max.		
0+0/-10°C for 1h, and for 24±2h.		
relative humidity of		
e and set for en measure.		
0+0/-10°C for 1h and for 24±2h.		
C and relative		
² ⁴ h. Remove and set then measure. nA)		
0+0/-10°C for 1h and		
- 		

* "room condition" Temperature: 15 to 35°C, Relative humidity: 45 to 75%, Atmosphere pressure: 86 to 106kPa

Continued on the following page. 🖊

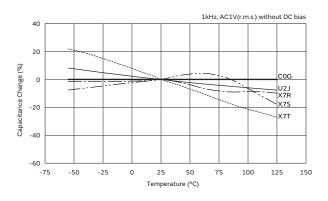


Continued from the preceding page. \searrow

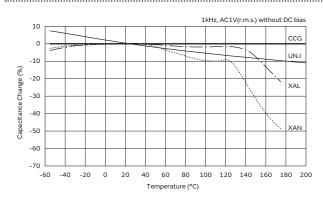
No.	Item		Specifications	Test Method		
	High Temperature Load	Appearance	No defects or abnormalities	Apply voltage in Table for 1000 ⁺⁴⁸ _O h at the maximu		
		Capacitance Change	Within ±12.5%	12.5% operating temperature. Re room temperature, then m (Charge/Discharge current		
		D.F.	0.02 max.	Rated Voltage	Test Voltage	
16		Insulation Resistance	More than 1000MΩ or 50MΩ \bullet μF (Whichever is smaller)	DC250V DC450V DC630V	150% of the rated voltage 130% of the rated voltage 120% of the rated voltage r 1h, at test temperature. Remove	
17	Solvent Resistance	Appearance Marking	No defects or abnormalities Legible	The capacitor should be fully immersed, unagitated, in reagent at 20 to 25°C for 30±5s and then removed gently. Marking on the surface of the capacitor should immediately be visually examined. Reagent : • Isopropyl alcohol		

Characteristics Reference Data (Typical Example)

Capacitance - Temperature Characteristics (RCE, RDE Series)

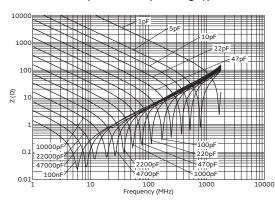


Capacitance - Temperature Characteristics (RHS Series)

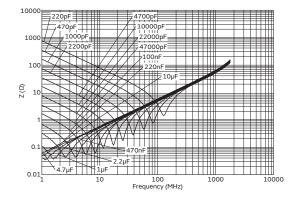


Impedance - Frequency Characteristics

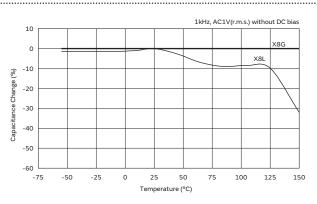
Temperature Compensating Type



High Dielectric Constant Type

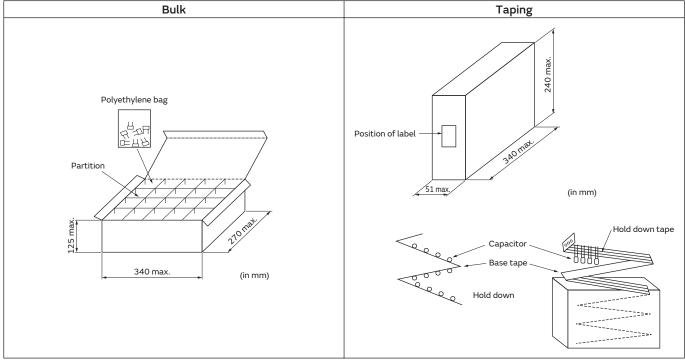


Capacitance - Temperature Characteristics (RHE Series)



Packaging

Packing Styles



Minimum Quantity

[Bulk]

Series	Dimensions Code	Minimum Quantity (pcs./Bag)*
RCE	Except for "U"	500
RCE	U	200
RHE	0, 1, 2, 3, W	500
RHS	0, 1, 2	500
RDE	Except for "U"	500
RDE	U	200

[Taping]

Series	Dimensions Code	Minimum Quantity (pcs./Ammo Pack)*
	0, 1, 2	2000
RCE	3	2000 or 1500
	4, 5, U, W	1500
DUE	0, 1, 2	2000
RHE	3, W	1500
PLIS	0, 1	2000
RHS	2	1500
	0, 1, 2	2000
205	3	2000 or 1500
RDE	4, 5, W	1500
	U	1500 or 1000

Please order with an integral multiple of the minimum quantity above.

*Minimum Quantity may change depends on part number.

Please check our website "Product details".

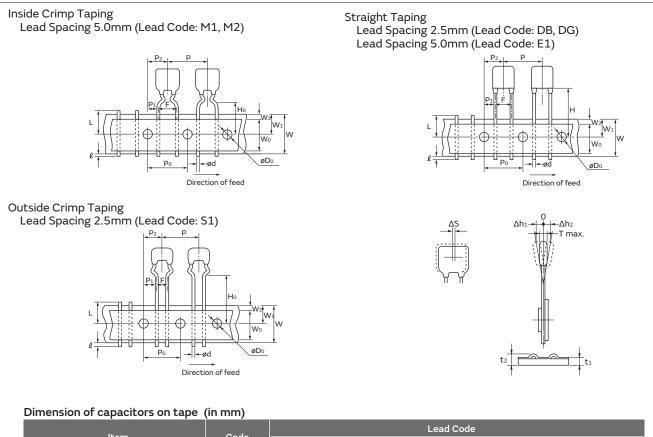
"Minimum Quantity" means the numbers of units of each delivery or order. The quantity should be an integral multiple of the "minimum quantity." (Please note that the actual delivery quantity in a package may change sometimes.)



Packaging

Continued from the preceding page. \searrow

Taping Dimensions



lkow	Code			Lead (Code		
ltem	Code	DB	DG	E1	M1	M2	S1
Pitch of component	Р	12.7±1.0					
Pitch of sprocket hole	Po	12.7±0.2					
Lead spacing	F	2.5 ^{+0.4}		5.0 ^{+0.6} _{-0.2}		2.5+0.4	
Length from hole center to component center	P2	6.35±1.3					
I anoth from bala contouts load	P1	5.1±0.7		3.85±0.7		5.1±0.7	
Length from hole center to lead		254±1.5 total length of componestspitch × 20					
Deviation along tape, left or right defect	ΔS	0±2.0					
Carrier tape width	W	18.0±0.5					
Position of sprocket hole	W1	9.0+0					
Lead distance between reference and	Ho	- 16.0±0.5 20.0±0.5 16.0±				16.0±0.5	
bottom plane	Н	16.0±0.5	20.0±0.5	17.5±0.5	_		
Protrusion length	l	0.5 max.					
Diameter of sprocket hole	Do	4.0±0.1					
Lead diameter	d	0.5±0.05					
Total tape thickness	t1	0.6±0.3					
Total thickness of tape and lead wire	t2	1.5 max.					
Body thickness	Т	Depends on Part Number					
	∆hı	1.0 max.					
Deviation across tape	Δh2	(Dimension code W, U: 2.0 max.)					
Portion to cut in case of defect	L	11.0 ⁺⁰ -1.0					
Hold down tape width	Wo	9.5 min.					
Hold down tape position	W2			1.5:	±1.5		

Caution

▲ Caution (Storage and Operating Condition)

Operating and storage environment The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. Also avoid exposure to moisture. Before cleaning, bonding or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended

Caution (Rating)

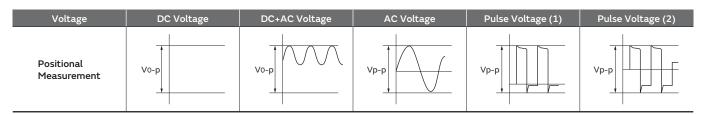
1. Operating Voltage

When DC-rated capacitors are to be used in AC or ripple current circuits, be sure to maintain the Vp-p value of the applied voltage or the V0-p which contains DC bias within the rated voltage range.

When the voltage is applied to the circuit, starting or stopping may generate irregular voltage for a transit period because of resonance or switching. Be sure to use a capacitor with a rated voltage range that includes these irregular voltages. equipment. Store the capacitors where the temperature and relative humidity do not exceed 5 to 40 degrees centigrade and 20 to 70%. Use capacitors within 6 months after delivery.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

When DC-rated capacitors are to be used in input circuits from commercial power source (AC filter), be sure to use Safety Recognized Capacitors because various regulations on withstand voltage or impulse withstand established for all equipment should be taken into consideration.



2. Operating Temperature

Keep the surface temperature of a capacitor below the upper limit of its rated operating temperature range. Be sure to take into account the heat generated by the capacitor itself (Please refer to the following column 3) and by peripheral components.

3. Self-generated Heat

When the capacitor is used in a high-frequency current, pulse current or similar current, it may have self-generated heat due to dielectric loss. In the case of "High Dielectric Constant Type Capacitors", applied voltage load should be such that self-generated heat is within 20 °C under the condition where the capacitor is subjected at an atmosphere temperature of 25 °C. Excessive heat may lead to deterioration of the capacitor's characteristics and reliability.

Please contact us if self-generated heat occurs with "Temperature Compensating Type Capacitors".

4. Measurement of Temperature

The surface temperature of capacitor should be measured under the condition where an atmosphere

temperature and a heat from peripheral components are stable.

The self-generated heat should be measured under the conditions where the capacitor is subjected at an atmosphere temperature 25°C and is not affected by radiant heat from other components or wind from surroundings.

When measuring, use a thermocouple of small thermal capacity -K of ø0.1mm.

Never attempt to perform measurement with the cooling fan running. Otherwise, accurate measurement cannot be ensured.

5. Fail-Safe

Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by the abnormal function or the failure of our product.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

①Caution

ACaution (Soldering and Mounting)

1. Vibration and impact

Do not expose a capacitor or its leads to excessive shock or vibration during use.

2. Soldering

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

3. Bonding, resin molding and coating

In case of bonding, molding or coating this product, verify that these processes do not affect the quality of the capacitor by testing the performance of the bonded, molded or coated product in the intended equipment.

In case the amount of application, dryness/ hardening conditions of adhesives and molding resins

Caution (Handling)

Vibration and impact Do not expose a capacitor or its leads to excessive shock or vibration during use.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED. containing organic solvents (ethyl acetate, methyl ethyl ketone, toluene, etc.) are unsuitable, the outer coating resin of a capacitor may be damaged by the organic solvents and may result, worst case, in a short circuit.

The variation in thickness of adhesive or molding resin or coating may cause an outer coating resin cracking and/or ceramic element cracking of a capacitor in a temperature cycling.

4. Treatment after bonding, resin molding and coating When the outer coating is hot (over 100 degrees centigrade) after soldering, it becomes soft and fragile, so please be careful not to give it mechanical stress.

FAILURE TO FOLLOW THE ABOVE CAUTIONS MAY RESULT, WORST CASE, IN A SHORT CIRCUIT AND CAUSE FUMING OR PARTIAL DISPERSION WHEN THE PRODUCT IS USED.

.....

Notice

Notice (Rating)

Capacitance change of capacitor In case of high dielectric constant type capacitors Capacitors have an aging characteristic, whereby the capacitor continually decreases its capacitance slightly if the capacitor is left on for a long time. Moreover, capacitance might change greatly depending on the surrounding temperature or an applied voltage.

Notice (Soldering and Mounting)

1. Cleaning (ultrasonic cleaning)

To perform ultrasonic cleaning, observe the following conditions.

Rinse bath capacity: Output of 20 watts per liter or less.

Rinsing time: 5 min. maximum.

Do not vibrate the PCB/PWB directly.

Excessive ultrasonic cleaning may lead to fatigue

destruction of the lead wires.

2. Soldering and Mounting

Insertion of the Lead Wire

- When soldering, insert the lead wire into the PCB without mechanically stressing the lead wire.
- Insert the lead wire into the PCB with a distance appropriate to the lead space.

Global Locations

For details please visit www.murata.com



1 Export Control

For customers outside Japan:

No Murata products should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to (1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or (2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

For customers in Japan:

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export. Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.

- (1) Aircraft equipment
- Aerospace equipment
- (3) Undersea equipment
- ④ Power plant equipment
- (5) Medical equipment
- Transportation equipment (vehicles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention / crime prevention equipment
- Data-processing equipment
- Application of similar complexity and/or reliability requirements to the applications listed above

Product specifications in this catalog are as of February 2018. They are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

Please read rating and ①CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.

This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

- Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.
- 7 No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

Murata Manufacturing Co., Ltd.

www.murata.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Murata:

RDER72J474MUB1C13B RPE5C1H2R0C2S1B03A RDER72E102K2K1A11B RDER72E102K2M1A11A
RDER72E103K2K1A11B RDER72E103K2M1A11A RDER72E104K3K1C11B RDER72E104K3M1C11A
RDER72E105MUB1C13B RDER72E105MUE1C13A RDER72E152K2K1A11B RDER72E152K2M1A11A
RDER72E153K2K1C11B RDER72E153K2M1C11A RDER72E222K2K1A11B RDER72E222K2M1A11A
RDER72E223K2K1C11B RDER72E223K2M1C11A RDER72E332K2K1A11B RDER72E332K2M1A11A
RDER72E333K2K1C11B RDER72E333K2M1C11A RDER72E334K5B1C13B RDER72E334K5E1C13A
RDER72E472K2K1A11B RDER72E472K2M1A11A RDER72E473K2K1C11B RDER72E473K2M1C11A
RDER72E474K5B1C13B RDER72E474K5E1C13A RDER72E682K2K1A11B RDER72E682K2M1A11A
RDER72E683K3K1C11B RDER72E683K3M1C11A RDER72J102K2K1C11B RDER72J102K2M1C11A
RDER72J103K2K1C11B RDER72J103K2M1C11A RDER72J152K2K1C11B RDER72J152K2M1C11A
RDER72J153K2K1C11B RDER72J153K2M1C11A RDER72J154K5B1C13B RDER72J154K5E1C13A
RDER72J222K2K1C11B RDER72J222K2M1C11A RDER72J223K3K1C11B RDER72J223K3M1C11A
RDER72J224K5B1C13B RDER72J224K5E1C13A RDER72J332K2K1C11B RDER72J332K2M1C11A
RDER72J333K3K1C11B RDER72J333K3M1C11A RDER72J472K2K1C11B RDER72J472K2M1C11A
RDER72J473K3K1C11B RDER72J473K3M1C11A RDER72J474MUE1C13A RDER72J682K2K1C11B
RDER72J682K2M1C11A RDED72E104K3M1C11A RDED72E105K5E1C13A RDED72E154K3M1C11A
RDED72E225MUE1C13A RDED72E333K2M1C11A RDED72E473K2M1C11A RDED72E474K5E1C13A
RDED72E683K2M1C11A RDED72E684K5E1C13A RDED72J103K2M1C11A RDED72J104K5E1C13A
RDED72J153K2M1C11A RDED72J154K5E1C13A RDED72J223K3M1C11A RDED72J224K5E1C13A
RDED72J274K5E1C13A RDED72J333K3M1C11A RDED72J473K3M1C11A RDED72J474MUE1C13A
RDED72J564MUE1C13A RDED72W103K2M1C11A RDED72W104K3M1C11A RDED72W105MUE1C13A
RDED72W125MUE1C13A RDED72W153K2M1C11A RDED72W223K2M1C11A RDED72W224K5E1C13A
RDED72W333K2M1C11A RDED72W334K5E1C13A RDED72W473K2M1C11A RDED72W474K5E1C13A
RDED72W564K5E1C13A RDED72W683K3M1C11A RDER73A102K2K1C11B RDER73A102K2M1C11A
RDER73A103K3K1C11B RDER73A103K3M1C11A RDER73A104K5B1C13B RDER73A104K5E1C13A