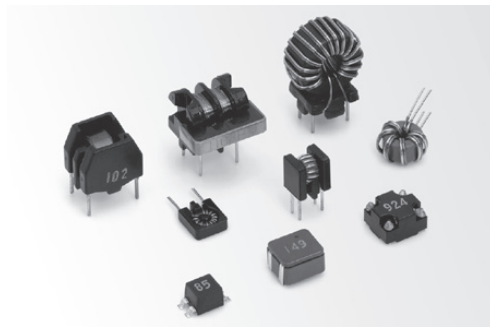


# DC Line Filters



## Vol. 12



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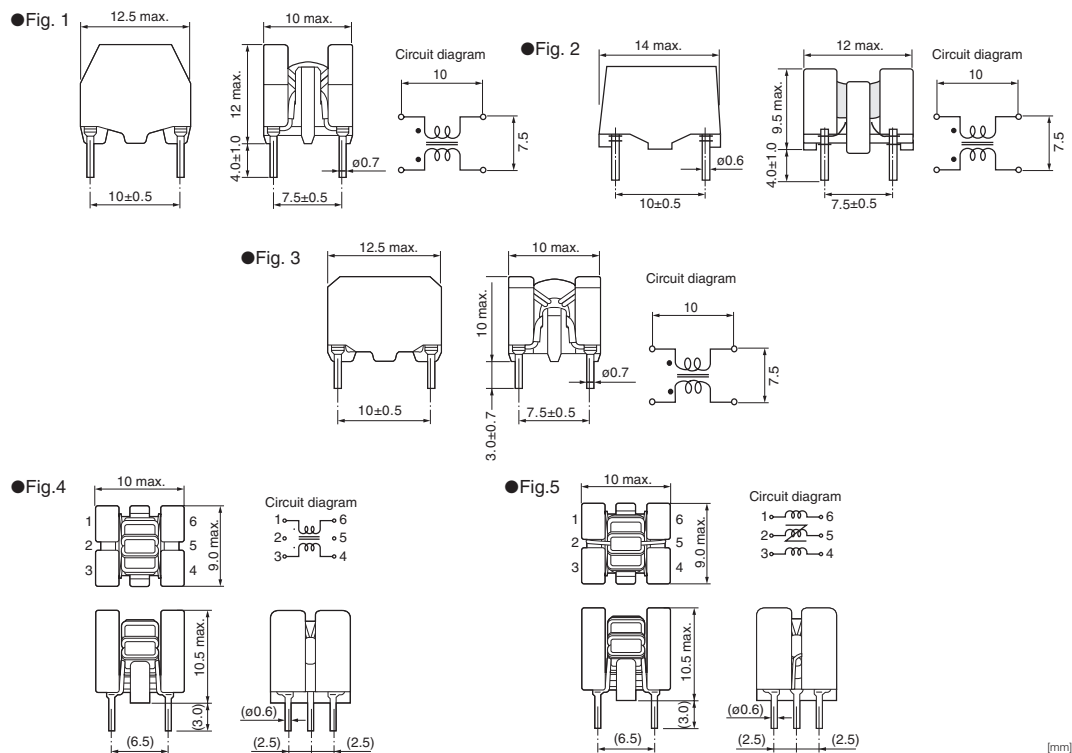
## SH Series

[RoHS Compliant]



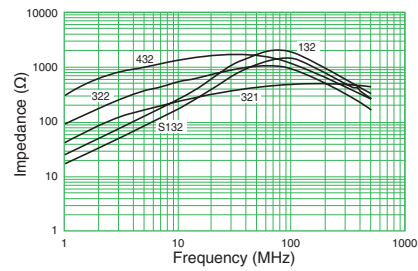
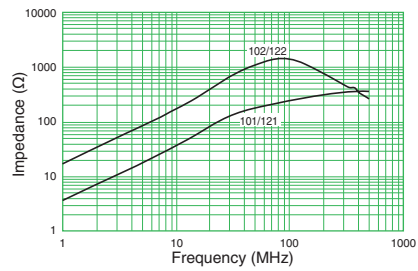
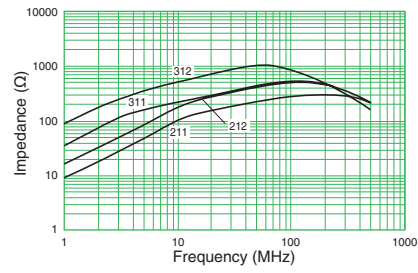
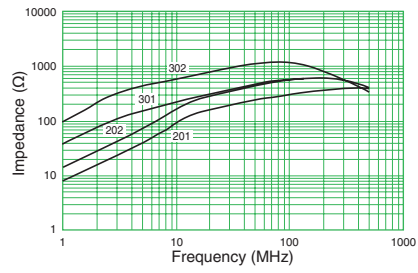
Model	Rated voltage DC (V)	Rated current (A)	Inductance ( $\mu$ H) min.	DC resistance (m $\Omega$ /Line) max.	Operating temperature range (°C)	Shape and dimensions
SH-101	150	3.0	0.35	16	-25~+80	Fig. 1
SH-102	150	3.0	1.5	26	-25~+80	
SH-201	150	3.0	0.5	16	-25~+80	
SH-202	150	3.0	1.5	20	-25~+80	
SH-301	150	3.0	3.2	22	-25~+80	
SH-302	150	3.0	7.5	26	-25~+80	Fig. 2
SH-211	150	3.0	0.5	18	-25~+80	
SH-212	150	3.0	1.5	23	-25~+80	
SH-311	150	3.0	3.2	25	-25~+80	
SH-312	150	3.0	7.5	30	-25~+80	
SH-121	50	3.0	0.35	11	-25~+80	Fig. 3
SH-122	50	3.0	1.5	20	-25~+80	
SH-321	50	3.0	3.5	14	-25~+80	
SH-322	50	3.0	7.5	20	-25~+80	Fig. 4
SH-132	50	2.4	2.6	51	-25~+60	
SH-432	50	2.4	30.0	51	-25~+60	Fig. 5
SH-S132	50	1.0	1.7	81	-25~+80	

## Shape and Dimensions/Circuit Diagram



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**Impedance vs. Frequency**



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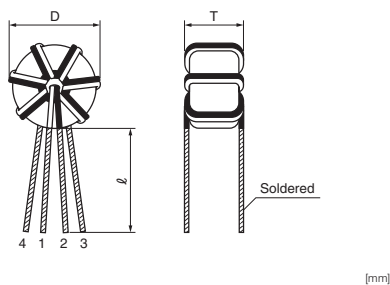
## SHO Series

[RoHS Compliant]

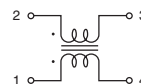


Model	Rated voltage DC (V)	Rated current (A)	Inductance ( $\mu$ H) min.	DC resistance (m $\Omega$ /Line) max.	Operating temperature range ( $^{\circ}$ C)	Dimensions(mm)		
						D	T	$\ell$
SHO-101	50	4.0	2.0	15.5	-25~+70	11Max.	7.5Max.	10 $\pm$ 3
SHO-102	50	4.0	0.6	10.0	-25~+70	11Max.	7.5Max.	10 $\pm$ 3
SHO-301	50	4.0	12.0	15.5	-25~+70	11Max.	7.5Max.	10 $\pm$ 3
SHO-302	50	4.0	3.9	10.0	-25~+70	11Max.	7.5Max.	10 $\pm$ 3
SHO-303	50	5.0	6.0	8.0	-25~+75	11Max.	8Max.	10 $\pm$ 3
SHO-402	50	0.8	99.0	120.0	-25~+80	7.5Max.	5Max.	4 $\pm$ 2
SHO-501	50	0.8	17.5	105.0	-25~+80	6.2Max.	3.4Max.	4 $\pm$ 2

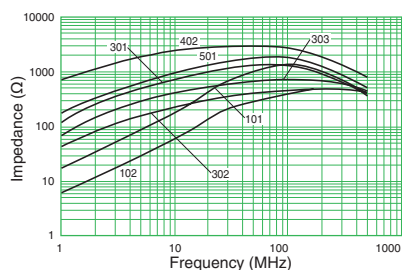
## Shape and Dimensions



## Circuit Diagram



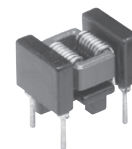
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# SBT-03W Series

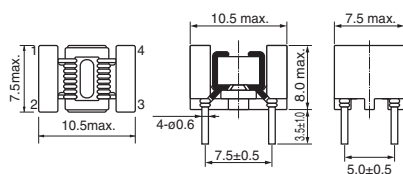
[RoHS Compliant]



Model	Rated voltage DC (V)	Rated current (A)	Inductance (100kHz, 1mA) (μH) min.	DC resistance (mΩ) max.	Operating temperature range (°C)	Wire size (mmφ)	Packaging
<b>SBT-0308W</b>	50	3.0	6.75	20	-25~+85	0.4	Bulk (100 pcs.)
<b>SBT-0310W</b>	50	2.5	7.7	30	-25~+80	0.35	
<b>SBT-0315W</b>	50	2.0	11.9	45	-25~+75	0.3	

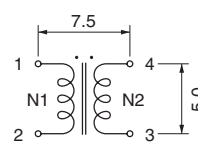
• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

## Shape and Dimensions



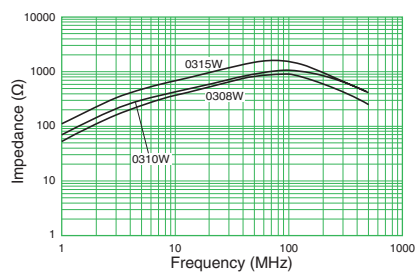
[mm]

## Circuit Diagram



[mm]

## Impedance vs. Frequency



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SBT-01W Series

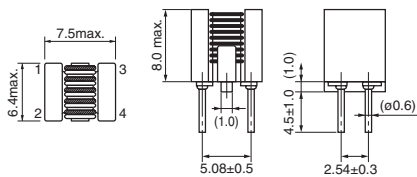
[RoHS Compliant]



Model	Rated voltage DC (V)	Rated current (mA)	Inductance (1kHz, 70mA) (μH)	DC resistance (mΩ) max.	Operating temperature range (°C)	Packaging
SBT-0115W	50	500	≥5	30	-25~+70	Bulk (100 pcs.)
SBT-0140W	50	500	40±35%	40	-25~+70	
SBT-0160W	50	500	60±35%	45	-25~+70	
SBT-0180W	50	500	80±35%	55	-25~+70	

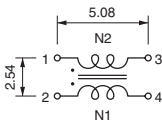
• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

Shape and Dimensions



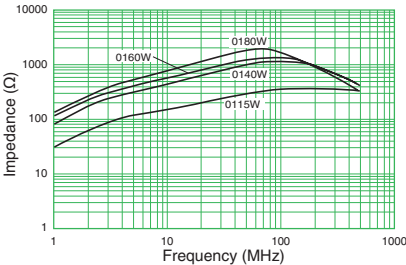
[mm]

Circuit Diagram



[mm]

Impedance vs. Frequency



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# Toroidal Cores with Wound Cables

[RoHS Compliant]

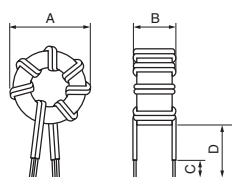


Model	Core	Dimensions (mm)				No. of turns	Wire	Winding status	Frequency range (MHz)
		A	B	C	D				
<b>ESD-H-12E</b>	ESD-R-12C	16	20	5	25	7	UL1007 AWG26 (ø0.4)	Bi-filar winding	~300
<b>ESD-H-14U</b>	ESD-R-14A	17.5	7	5	15	10	UL1609 AWG26 (ø0.4)	Bi-filar winding	~100
<b>ESD-H-14NU</b>	ESD-R-14C2	17.5	7	5	15	10	UL1609 AWG26 (ø0.4)	Bi-filar winding	~300

• Recommended soldering conditions: 350±10°C, 2 to 3 sec. • Rated current:1A • Rated Voltage: 125V

## Shape and Dimensions

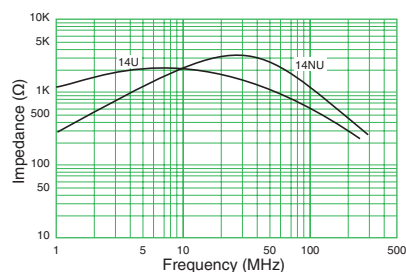
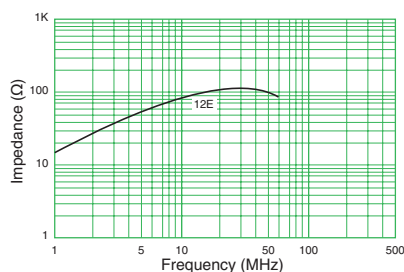
●ESD-H Series



## Circuit Diagram



## Impedance vs. Frequency



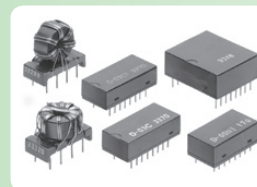
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# DIP Noise Filters

## D-03C, 03C1, 05N1, 07C1, 08C2, 08C2A

[RoHS Compliant]

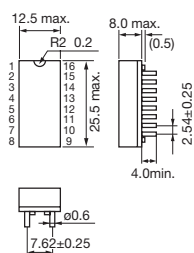


Model	Circuit diagram	Number of terminals/Circuits	Rated voltage DC (V)	Rated current DC (mA/Line)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
D-03C		4 cores	50	150	75	-20~+70
D-03C1		16P/2 circuits x 4 Common mode	50	100	150	-20~+70
D-05N1		8 cores	50	100	10	-20~+70
D-07C1		16P/8 circuits Common mode	50	300	100	-20~+70
D-08C2		8P/4 circuits Common mode	50	2300	25	-20~+70
D-08C2A		8P/4 circuits Common mode	50	500	70	-25~+65

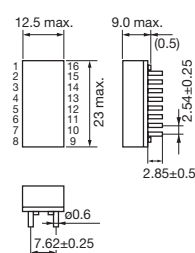
• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

### Shape and Dimensions

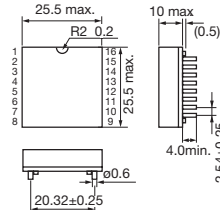
#### ●D-03C, 03C1



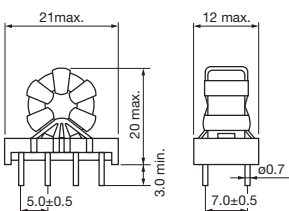
#### ●D-05N1



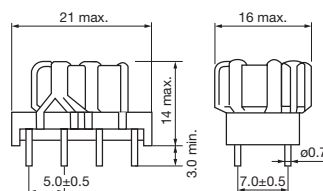
#### ●D-07C1



#### ●D-08C2



#### ●D-08C2A

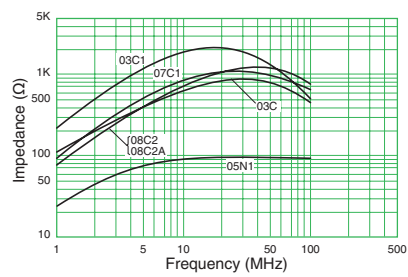


[mm]



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**Impedance vs. Frequency**



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DIP Noise Filters  
D-16C

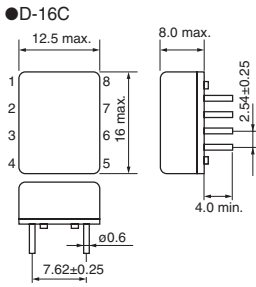
[RoHS Compliant]



Model	Circuit diagram	Number of terminals/Circuits	Rated voltage DC (V)	Rated current DC (mA/Line)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
D-16C		8P/4 circuits Common mode	50	100	50	-20~+70

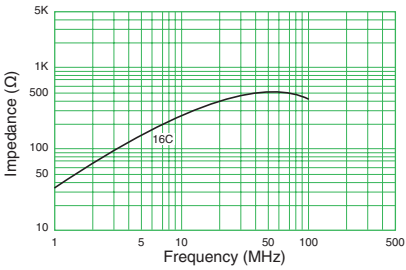
• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

Shape and Dimensions



[mm]

Impedance vs. Frequency

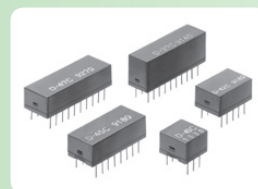


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# DIP Noise Filters

## D-37C, 40C, 42C, 45C, 47C

[RoHS Compliant]

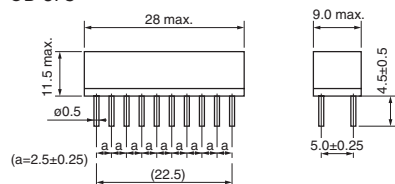


Model	Circuit diagram	Number of terminals/Circuits	Rated voltage DC (V)	Rated current DC (mA/Line)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
D-37C		20P/10 circuits Common mode	50	300	200	-20~+70
D-40C		6P/3 circuits Common mode	50	300	200	-20~+70
D-42C		10P/5 circuits Common mode	50	300	200	-20~+70
D-45C		16P/8 circuits Common mode	50	300	150	-20~+70
D-47C		20P/10 circuits Common mode	50	300	200	-20~+70

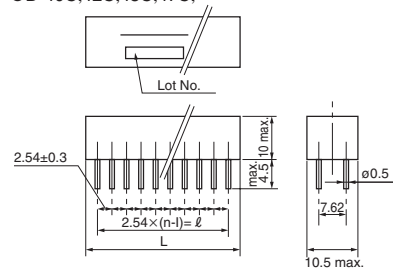
• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

### Shape and Dimensions

#### ●D-37C



#### ●D-40C,42C,45C,47C,



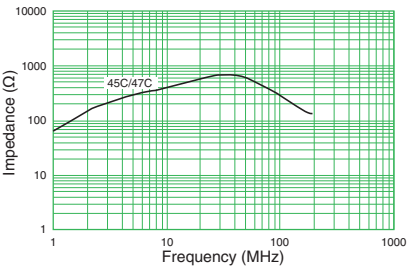
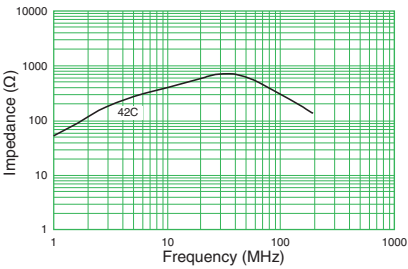
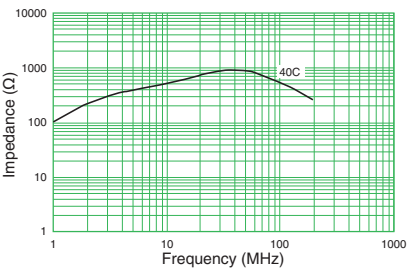
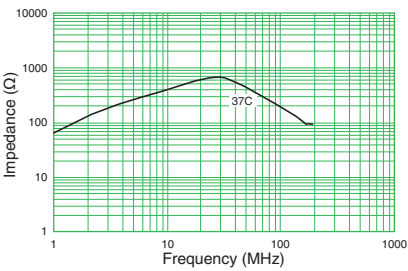
Model	Number of Circuits	ℓ	L
D-40C	3	5.08	12.7 max.
D-42C	5	10.16	18 max.
D-45C	8	17.78	25 max.
D-47C	10	22.86	28 max.

[mm]



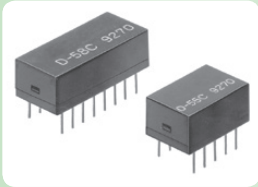
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Impedance vs. Frequency



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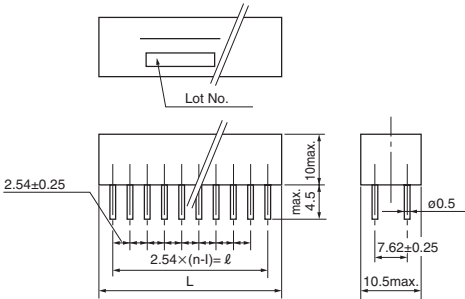
DIP Noise Filters  
D-55C, 58C  
[RoHS Compliant]



Model	Circuit diagram	Number of terminals/Circuits	Rated voltage DC (V)	Rated current DC (mA/Line)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
D-55C		1 core 10P/5 circuits Common mode	50	300	200	-20~+70
D-58C		1 core 16P/8 circuits Common mode	50	300	200	-20~+70

• Withstanding voltage: 200VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

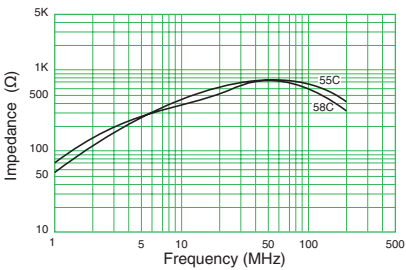
Shape and Dimensions



Model	Number of Circuits	ℓ	L
D-55C	5	10.16	18 max.
D-58C	8	17.78	25 max.

[mm]

Impedance vs. Frequency



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Noise Filters for Telephone Sets  
ST-101, 201, 202, 202S

[RoHS Compliant]

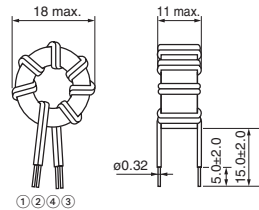


Model	Frequency range (MHz)	Impedance (kΩ) min.	Rated voltage DC (V)	Rated current (mA)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)	Remarks
ST-101	0.5~7	3 (at 0.5 MHz)	50	200	180	-20~+75	AM band
ST-201	7~40	1.5 (at 7 MHz)	50	200	100	-20~+75	FM band
ST-202	7~100	0.6 (at 100 MHz)	50	1000	40	-20~+75	FM band
ST-202S	7~100	0.6 (at 100 MHz)	50	1000	35	-20~+75	FM band

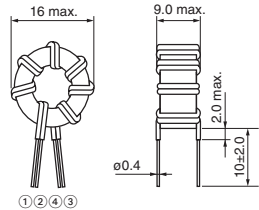
- Withstanding voltage: 500VDC (one minute, between lines)
- Insulation resistance: more than 10MΩ (250VDC, between lines)
- Recommended soldering conditions: 350±10°C, 2 to 3 sec.

Shape and Dimensions/Circuit Diagram

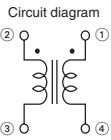
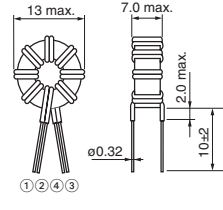
●ST-101, 201



●ST-202

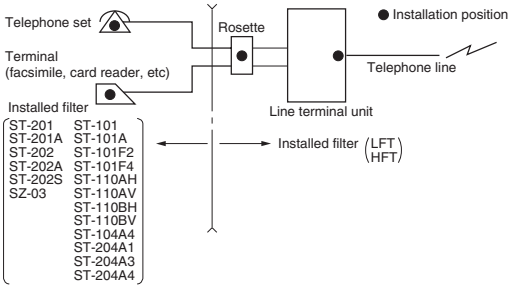


●ST-202S

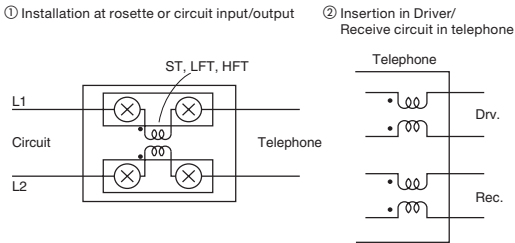


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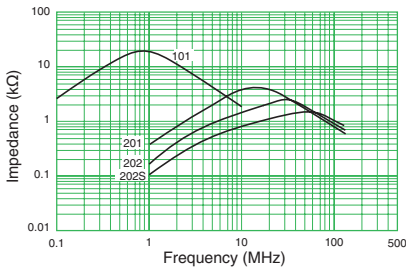
Installation Examples



Design Examples



Impedance vs. Frequency



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# Noise Filters for Telephone Sets

## ST-101A, 201A, 202A

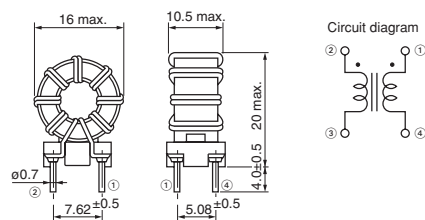
[RoHS Compliant]



Model	Frequency range (MHz)	Impedance (kΩ) min.	Rated voltage DC (V)	Rated current (mA)	DC resistance (mΩ/Line) max.	Operating temperature range (°C)	Remarks
<b>ST-101A</b>	0.5~7	3 (at 0.5 MHz)	50	200	250	-20~+65	AM band
<b>ST-201A</b>	7~40	1.5 (at 7 MHz)	50	200	150	-20~+65	FM band
<b>ST-202A</b>	7~100	0.6 (at 100 MHz)	50	1000	50	-20~+65	FM band

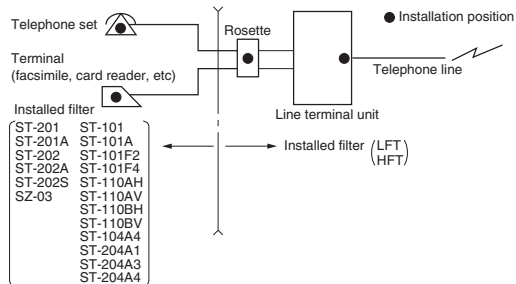
• Withstanding voltage: 500VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (100VDC, between lines)

### Shape and Dimensions/Circuit Diagram

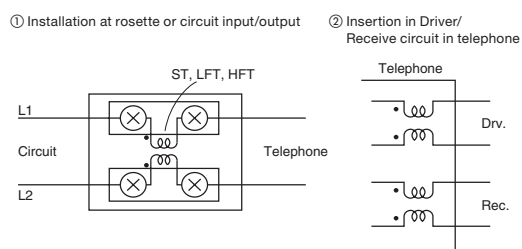


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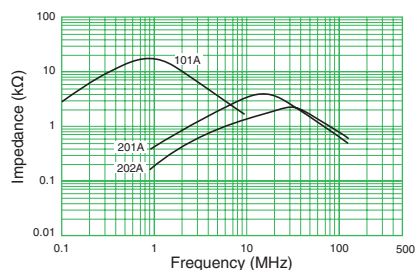
### Installation Examples



### Design Examples



### Impedance vs. Frequency



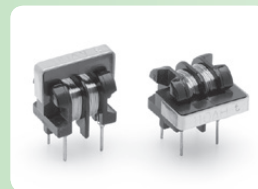
- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
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# Noise Filters for Telephone Sets

## ST-110AV, 110AH, 110BV, 110BH

[RoHS Compliant]

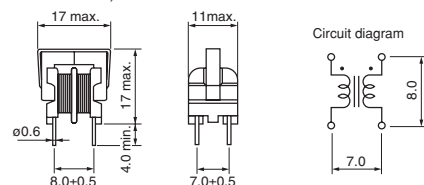


Model	Frequency range (MHz)	Impedance (kΩ) min.	Rated voltage DC (V)	Rated current (mA)	DC resistance (Ω/Line) max.	Operating temperature range (°C)	Remarks
ST-110AV	0.5~7	27 (at 0.5 MHz)	50	300	3	-20~+75	AM band
ST-110AH	0.5~7	27 (at 0.5 MHz)	50	300	3	-20~+75	AM band
ST-110BV	0.5~7	150 (Resonant)	50	150	7.5	-20~+75	AM band
ST-110BH	0.5~7	150 (Resonant)	50	150	7.5	-20~+75	AM band

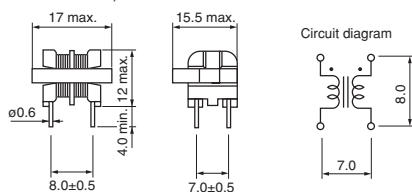
• Withstanding voltage: 500VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (250VDC, between lines)

### Shape and Dimensions/Circuit Diagram

#### ●ST-110AV, ST-110BV

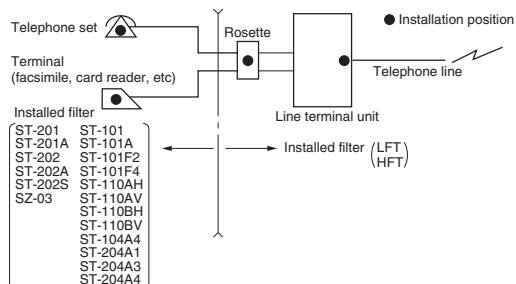


#### ●ST-110AH, ST-110BH



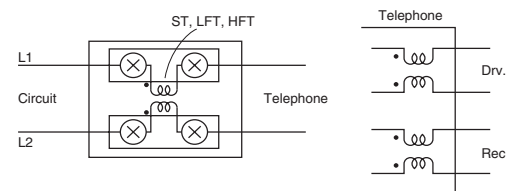
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### Installation Examples

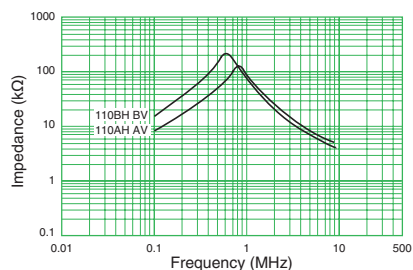


### Design Examples

- ① Installation at rosette or circuit input/output    ② Insertion in Driver/Receive circuit in telephone



### Impedance vs. Frequency



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# Noise Filters for Telephone Sets

## ST-101F2, 101F4

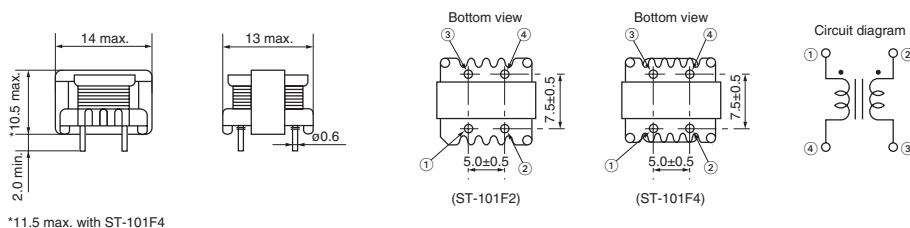
[RoHS Compliant]



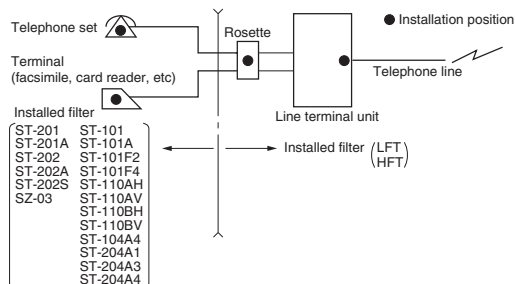
Model	Frequency range (MHz)	Impedance (kΩ) min.	Rated voltage DC (V)	Rated current (mA)	DC resistance (Ω/Line) max.	Operating temperature range (°C)	Remarks
<b>ST-101F2</b>	0.5~7	40 (at 600 kHz)	50	200	2.7	-20~+75	AM band
<b>ST-101F4</b>	0.5~7	60 (at 600 kHz)	50	200	3.5	-20~+75	AM band

- Withstanding voltage: 500VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (250VDC between lines)

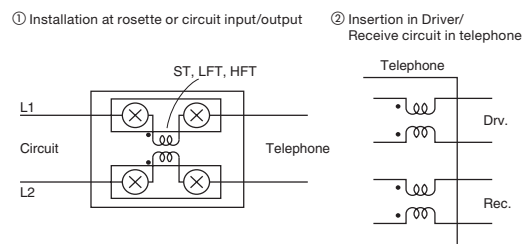
### Shape and Dimensions/Circuit Diagram



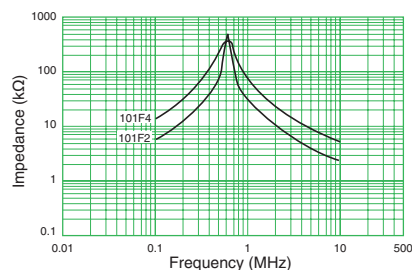
### Installation Examples



### Design Examples



### Impedance vs. Frequency



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Noise Filters for Telephone Sets  
ST-104A4, 204A Series

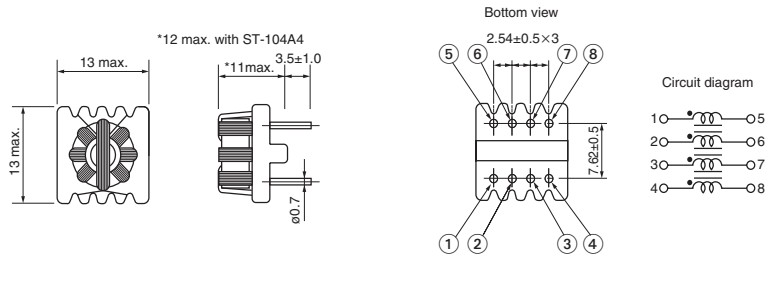
[RoHS Compliant]



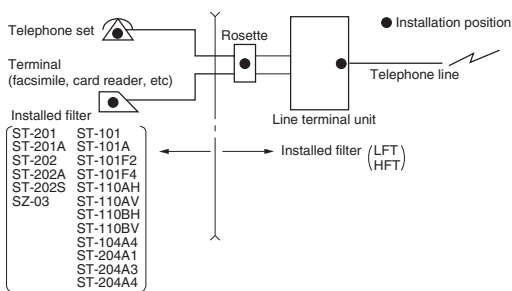
Model	Frequency range (MHz)	Impedance (kΩ) min.	Rated voltage DC (V)	Rated current (mA)	DC resistance (Ω/Line) max.	Operatings temperature range (°C)	Remarks
ST-104A4	0.5~7	3.0 (at 0.5 MHz)	50	500	0.36	-20~+75	AM band
ST-204A1	7~100	0.25 (at 10 MHz)	50	500	0.10	-20~+75	FM band
ST-204A3	7~40	1.0 (at 7 MHz)	50	500	0.17	-20~+75	FM band
ST-204A4	7~40	0.6 (at 7 MHz) REF	50	500	0.12	-20~+75	FM band

• Withstanding voltage: 500VDC (one minute, between lines) • Insulation resistance: more than 10MΩ (250VDC, between lines)

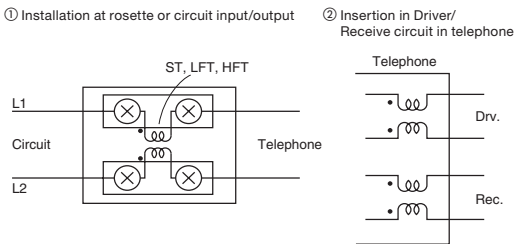
Shape and Dimensions/Circuit Diagram



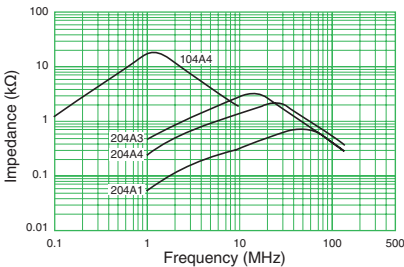
Installation Examples



Design Examples



Impedance vs. Frequency



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SBT Series

[RoHS Compliant]

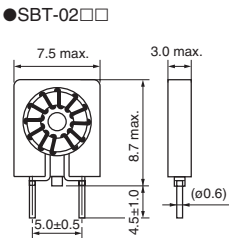


• Tape and Reel Dimensions (see page 28)

Model	Rated voltage DC (V)	Rated current (mA)	Inductance (1kHz, 70mA) (μH)	DC resistance (mΩ) max.	Operating temperature range (°C)	Packaging
SBT-0208□	50	500	8±50%	20	-25~+70	Bulk (100pcs.)
SBT-0210□	50	500	10±50%	20	-25~+70	
SBT-0240□	50	500	40±35%	34	-25~+70	
SBT-0260□	50	500	60±35%	50	-25~+70	

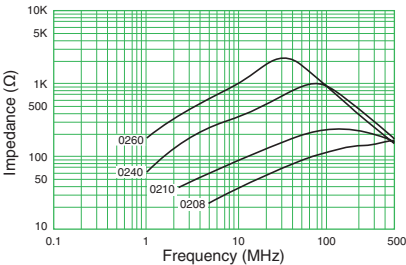
• □□Taping (2000 pcs./ reel x 6), □□□Flat taping (1000pcs./ box x 10)

Shape and Dimensions



[mm]

Impedance vs. Frequency



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# SNT Series

[RoHS Compliant]



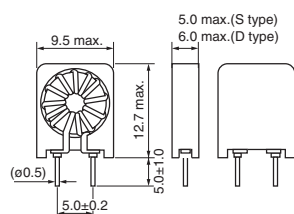
• Tape and Reel Dimensions (see page 28)

Model	Rated current* (A)	Inductance ( $\mu$ H) min.	DC resistance (m $\Omega$ ) max.	Operating temperature range (°C)	Packaging
<b>SNT-S10</b> □	3.0	1.5	25	-20~+60	Bulk (100pcs.)
<b>SNT-S20</b> □	1.5	6	35	-20~+60	
<b>SNT-S30</b> □	0.5	13	95	-20~+60	
<b>SNT-D10</b> □	3.0	2.5	25	-20~+60	
<b>SNT-D20</b> □	1.5	10	45	-20~+60	
<b>SNT-D30</b> □	0.5	20	98	-20~+60	

\*The rated current is for the wire and it is different from the inductance guaranteeing values.

• □ Taping (1000 pcs./ reel) • □ Flat taping (SNT-S type: 1000 pcs./ reel), (SNT-D type: 500 pcs./ reel)

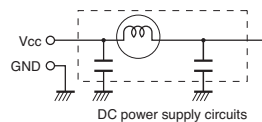
## Shape and Dimensions



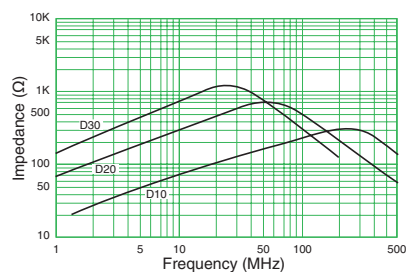
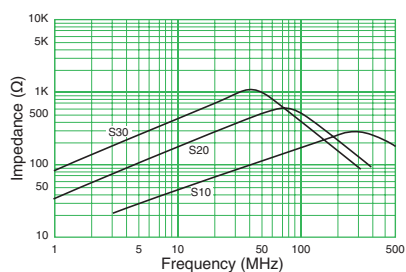
[mm]

## Design Examples

● For noise suppression in the secondary low-voltage power supply circuit



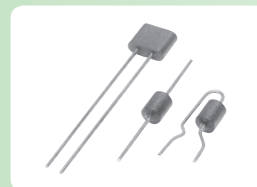
## Impedance vs. Frequency



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# Bead Inductors (Lead Type)

[RoHS Compliant]

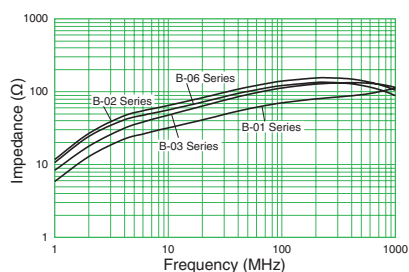


Model	Rated current DC (A)	Impedance ( $\Omega$ )	Operating temperature range (°C)
<b>B-01-Series</b>	5	2 (at 1 MHz)	-20~+70
<b>B-02-Series</b>		4 (at 1 MHz)	
<b>B-03-Series</b>		5 (at 1 MHz)	
<b>B-06-Series</b>		40 (at 10 MHz)	

Note: Rated current values are not guaranteed by impedance levels; these values are permissible levels when the lead wire temperature rise is 20°C.

Model	Shape	Packaging
<b>B-01-R</b>	Single-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-01-RT</b>	Single-bead, radial-lead	Tape type (2000 pcs./reel)
<b>B-01-RTF</b>	Single-bead, radial-lead	Tape type (2000 pcs./box)
<b>B-01-RS</b>	Single-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-01-RTS</b>	Single-bead, radial-lead	Tape type (2000 pcs./reel)
<b>B-01-RTSF</b>	Single-bead, radial-lead	Tape type (2000 pcs./box)
<b>B-01-A</b>	Single-bead, axial-lead	Bulk type (100 pcs./bag)
<b>B-01-A1</b>	Single-bead, axial-lead	Bulk type (250 pcs./bag)
<b>B-01-A2</b>	Single-bead, axial-lead	Bulk type (250 pcs./bag)
<b>B-01-AT</b>	Single-bead, axial-lead	Tape type (5000 pcs./reel)
<b>B-01-ATF</b>	Single-bead, axial-lead	Tape type (1500 pcs./box)
<b>B-01-AT1F</b>	Single-bead, axial-lead	Tape type (2000 pcs./box)
<b>B-02-R</b>	Double-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-02-RT</b>	Double-bead, radial-lead	Tape type (2000 pcs./reel)
<b>B-02-RTF</b>	Double-bead, radial-lead	Tape type (1500 pcs./box)
<b>B-03-R</b>	Double-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-03-RT</b>	Double-bead, radial-lead	Tape type (2000 pcs./reel)
<b>B-06-R-25</b>	Double-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-06-RTF-25</b>	Double-bead, radial-lead	Tape type (1500 pcs./reel)
<b>B-06-R-50</b>	Double-bead, radial-lead	Bulk type (100 pcs./bag)
<b>B-06-RTF-50</b>	Double-bead, radial-lead	Tape type (1500 pcs./box)

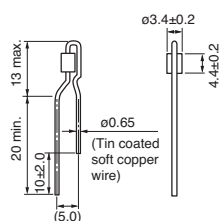
## Impedance Characteristics



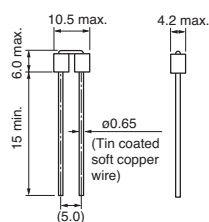
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## Shape and Dimensions

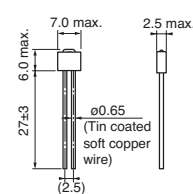
●B-01-R Series



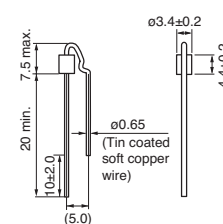
●B-02-R Series



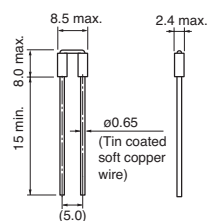
●B-06-R-25 Series



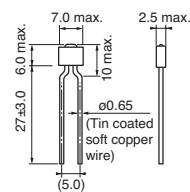
●B-01-RS Series



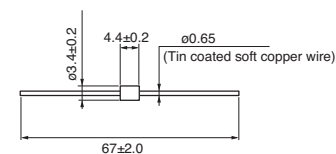
●B-03-R Series



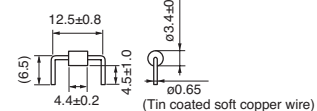
●B-06-R-50 Series



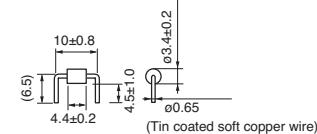
●B-01-A Series



●B-01-A1



●B-01-A2



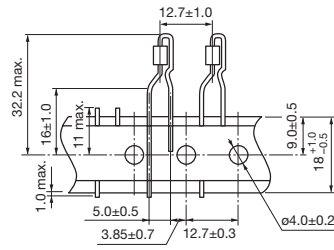
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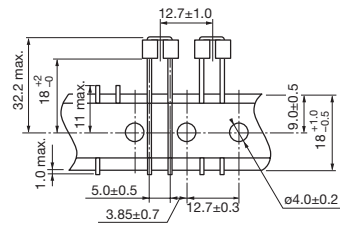
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**Tape and Reel Dimensions**

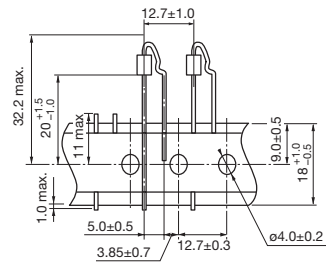
●B-01-RT • RTF



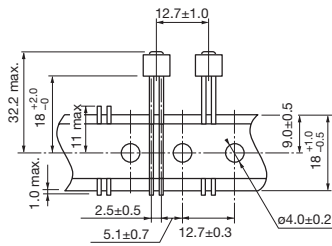
●B-02-RT • RTF/B-03-RT



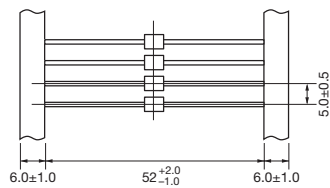
●B-01-RTS • RTSF



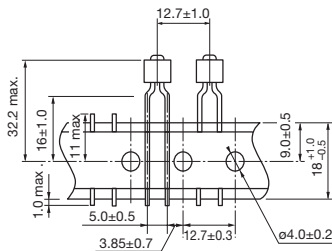
●B-06-RTF-25



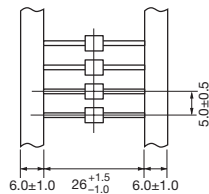
●B-01-AT • ATF



●B-06-RTF-50



●B-01-AT1F



[mm]

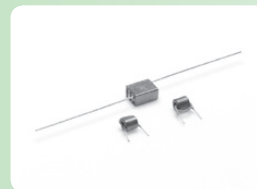


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# Bead Inductors (Winding Type)

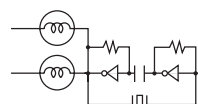
[RoHS Compliant]



Model	Rated current DC(A)	Core	Wire	No. of turns
<b>B-1</b>	1.5	B-20F-28	Teflon wire (ø0.26 : single) / Color: White	2T
<b>B-3</b>	3.5	B-20L-48B	Teflon wire (ø0.51 : single) / Color: Red	2T
<b>B-4</b>	1.5	B-20L-44	Teflon wire (ø0.26 : single) / Color: White	2T
<b>B-5</b>	1.5	B-20L-44	Teflon wire (ø0.26 : single) / Color: White	3T
<b>B-7</b>	2.5	B-20F-28	Teflon wire (ø0.32 : single) / Color: Green	2T
<b>B-8</b>	2.5	B-20L-48B	Teflon wire (ø0.4 : single) / Color: Blue	2T
<b>B-9</b>	2.5	B-20L-48B	Teflon wire (ø0.4 : single) / Color: Yellow	3T
<b>B-10</b>	2.5	B-20L-48B	Teflon wire (ø0.4 : single) / Color: Black	4T
<b>B-6-22B</b>	2.0	—	Soft copper wire (ø0.6)	—
<b>B-6-31B</b>	2.0	—	Soft copper wire (ø0.6)	—

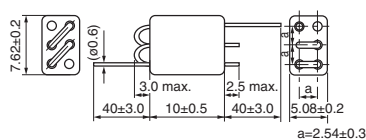
Note: Rated current values are not guaranteed by impedance levels; these values are permissible levels when the lead wire temperature rise is 20°C.

## Shape and Dimensions

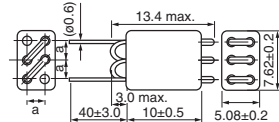


(Clock pulse oscillating section)

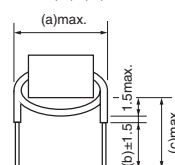
### ●B-6-22B



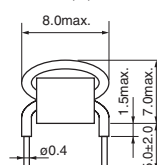
### ●B-6-31B



### ●B-1,3,4,5,7



### ●B-8,9,10



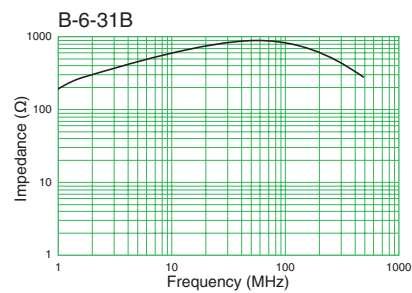
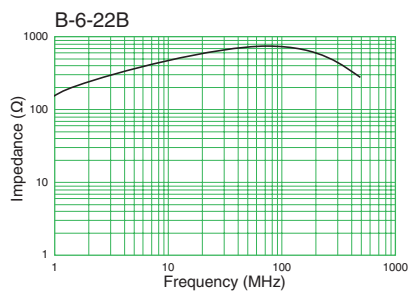
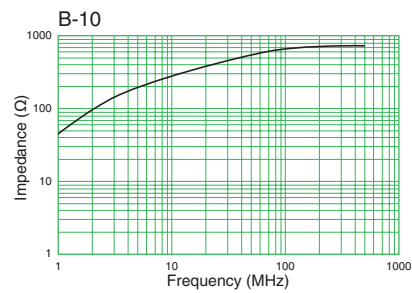
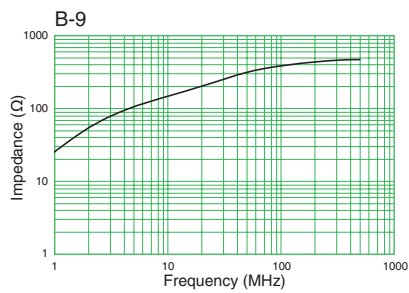
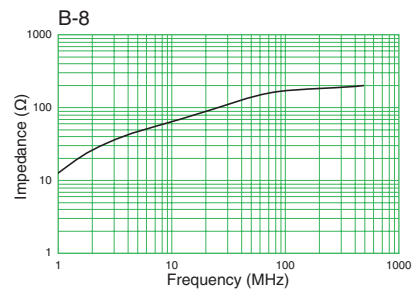
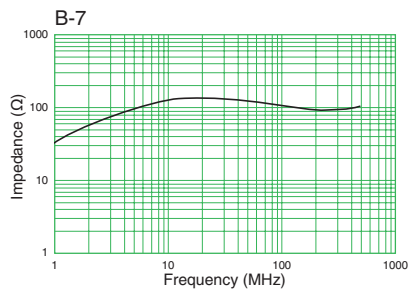
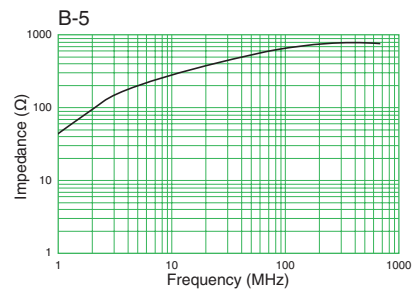
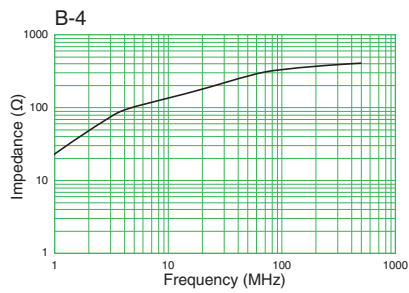
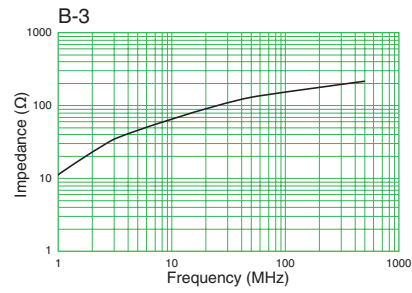
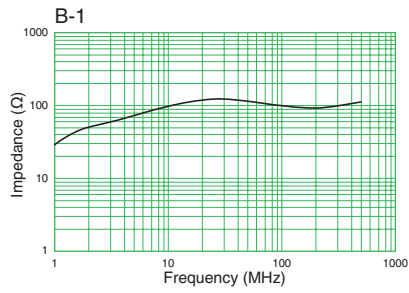
Model	(a)	(b)	(c)
<b>B-1</b>	5.5	5	9
<b>B-3</b>	9	5	10
<b>B-4</b>	10.5	5	9
<b>B-5</b>	11	5	9
<b>B-7</b>	6	5	9

[mm]



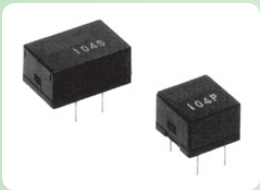
- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
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**Impedance vs. Frequency**



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**DFD Series**  
[RoHS Compliant]

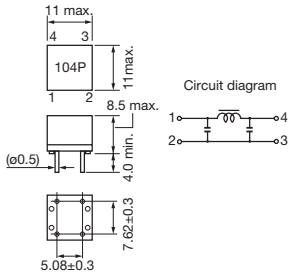


Model	Rated voltage DC (V)	Rated current DC (A)	DC resistance (mΩ) max.	Operating temperature range (°C)
<b>DFD-104P</b>	50	2.0	100	-25~+85
<b>DFD-104S</b>	50	2.0	100	-25~+85

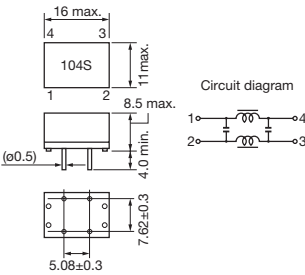
• Withstanding voltage: 125VDC, 5 sec. between terminal 1 and 2 • Insulation resistance: more than 500MΩ (100VDC, one minute)

Shape and Dimensions/Circuit Diagram

●DFD-104P

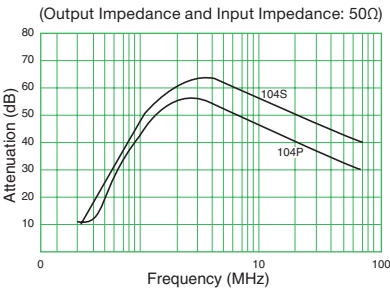


●DFD-104S



[mm]

Attenuation Characteristics

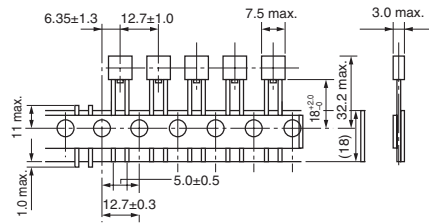


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## Tape and Reel Dimensions

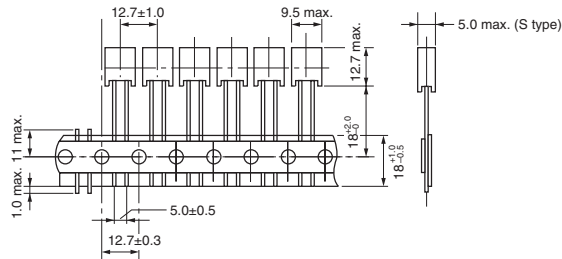
### SBT Series

#### Tape and Reel Dimensions



### SNT Series

#### Tape and Reel Dimensions



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SBS9080 Series

[RoHS Compliant]

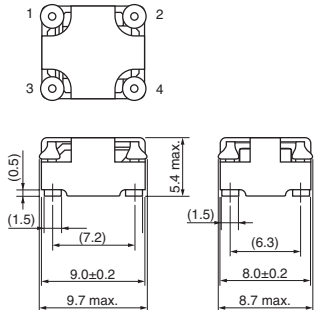


• Tape and Reel Dimensions (see page 36) • Precautions (see page 35)

Model	Rated voltage DC (V)	Rated current DC (A)	Inductance (at 100KHz) (μH) min.	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
SBS9080-509T	50	5.0	0.9	15	-25~+50
SBS9080-524T	50	5.0	2.4	15	-25~+50

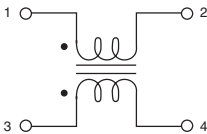
• Withstanding voltage: 125V DC for one minute between lines • Insulation resistance: More than 10MΩ (100V DC, between lines)

Shape and Dimensions

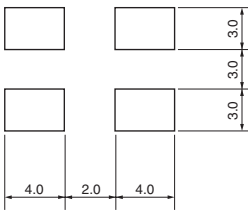


[mm]

Circuit Diagram

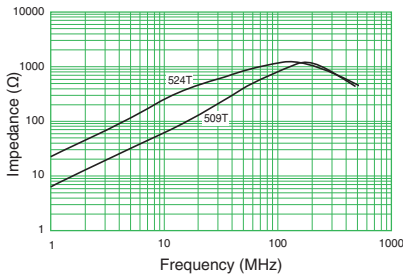


Recommended Land Pattern



[mm]

Impedance vs. Frequency



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# SBP Series

[RoHS Compliant]

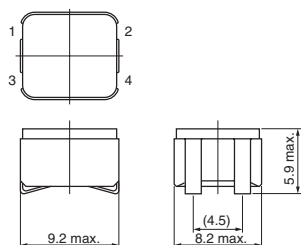


• Tape and Reel Dimensions (see page 36) • Precautions (see page 35)

Model	Rated voltage DC (V)	Rated current DC (A)	Impedance (at 100MHz) (Ω) min.	DC resistance (mΩ/Line) max.	Operating temperature range (°C)
<b>SBP-5001T</b>	50	5.0	500	7	-25~+70

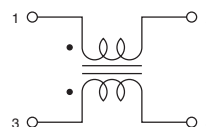
• Withstanding voltage: 200V DC for one minute between lines • Insulation resistance: More than 10MΩ (100V DC, between lines)

## Shape and Dimensions

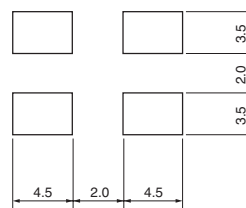


[mm]

## Circuit Diagram

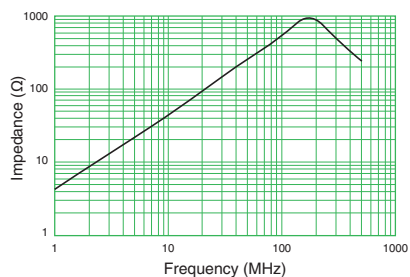


## Recommended Land Pattern



[mm]

## Impedance vs. Frequency



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DCM Series  
[RoHS Compliant]



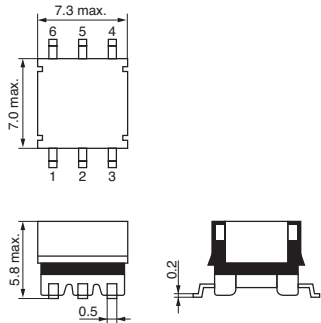
• Tape and Reel Dimensions (see page 36) • Precautions (see page 35)

Model	Rated voltage (V)	Rated current (A)	L(μH) min	Rdc(mΩ) max	Type
DCM5-01	50	0.2	2540	3180	EE5
DCM5-02	50	0.5	520	510	EE5
DCM5-03	50	1.0	210	180	EE5
DCM5-04	50	2.0	30	30	EE5

• Inductance measurement condition : f = 10KHZ 0.1V ※ • Insulation resistance : more than 100MΩ(250V DC, 1min, between lines)  
• Operating temperature(°C) : -20 to 110 (includes the selftemp. rise.)  
**Look** : By number-of-turns adjustment, to products other than the above-mentioned characteristic is also possible, please consult.  
• Common mode winding with section bobbin. ※ • Withstanding voltage : 250V DC for one minute between lines.

Shape and Dimensions

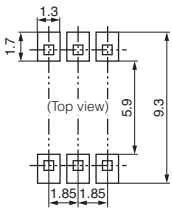
●DCM5 Series



[mm]

Recommended Land Pattern

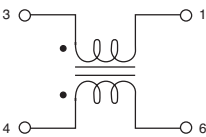
●DCM5 Series



[mm]

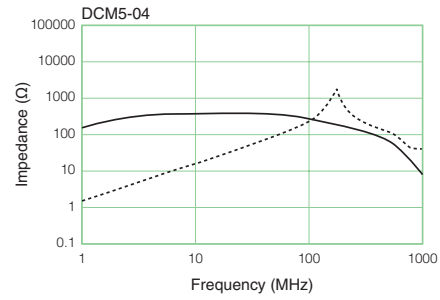
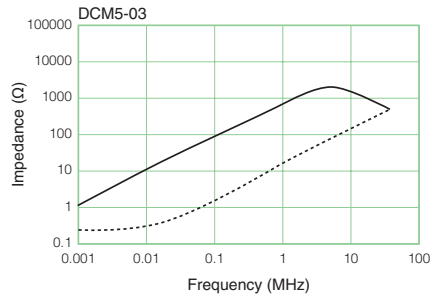
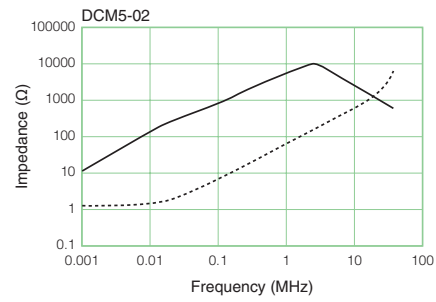
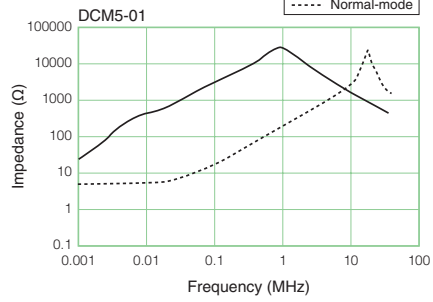
Circuit Diagram

●DCM5 Series



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**Impedance vs. Frequency**

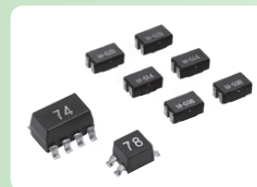


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# EMC Chip Filters M-500CT/M-600T Series

[RoHS Compliant]



• Tape and Reel Dimensions (see page 36-38) • Precautions (see page 35)

## M-500CT Series

Model	Rated voltage DC (V)	Rated current DC (A)	Impedance ( $\Omega$ ) min.	DC resistance (m $\Omega$ ) max.	Operating temperature range (°C)
M-521CT	50	1.0	700 (at 10 MHz)	100	-25~+85
M-522CT	50	1.0	200 (at 20 MHz)	100	-25~+85
M-523CT	50	1.5	200 (at 20 MHz)	65	-25~+85
M-524CT	80	0.5	700 (at 10 MHz)	100	-25~+85
M-532CT	50	0.5	450 (at 100 MHz)	90	-25~+85
M-538CT	50	0.1	800 (at 100 MHz)	220	-25~+70
M-542CT	50	0.5	200 (at 10 MHz)	120	-20~+75
M-543CT	50	1.0	700 (at 10 MHz)	100	-25~+85

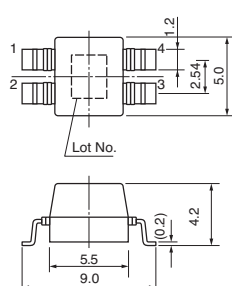
## M-600T Series

Model	Rated voltage DC (V)	Rated current DC (A)	Impedance ( $\Omega$ ) min.	DC resistance (m $\Omega$ ) max.	Operating temperature range (°C)
M-608T	50	0.1	300 (at 100 MHz)	80	-20~+80
M-614T	50	0.1	1000 (at 50 MHz)	120	-20~+80
M-620T	50	0.1	1000 (at 30 MHz)	160	-20~+80

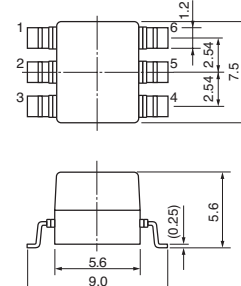
• Insulation resistance: more than 10M $\Omega$  (100V DC, between lines)

## Shape and Dimensions

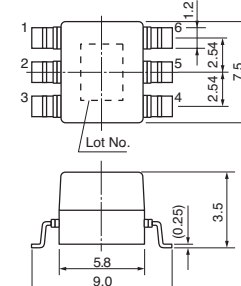
### ●M-521CT, M-522CT, M-523CT, M-524CT



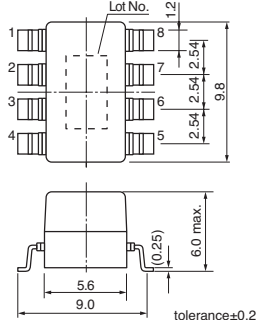
### ●M-532CT



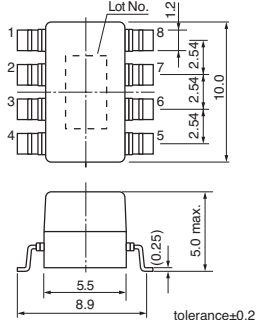
### ●M-538CT



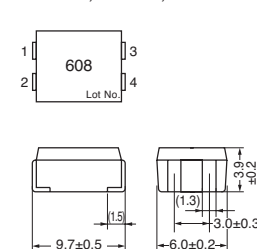
### ●M-542CT



### ●M-543CT



### ●M-608T, M-614T, M-620T



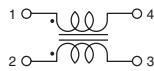
[mm]



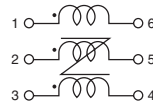
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**Circuit Diagram**

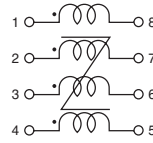
●M-521CT, M-522CT, M-523CT, M-524CT



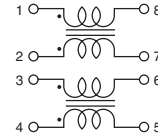
●M-532CT, M-538CT



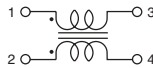
●M-542CT



●M-543CT

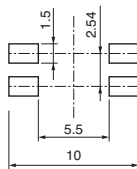


●M-608T, M-614T, M-620T

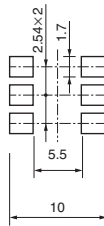


**Recommended Land Pattern**

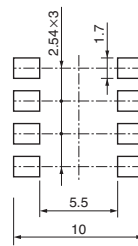
●M-521CT, M-522CT  
M-523CT, M-524CT



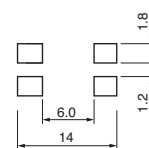
●M-538CT, M-532CT



●M-542CT, M-543CT



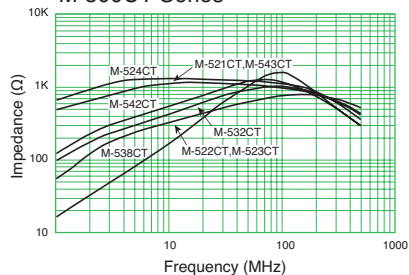
●M-608T, M-614T, M-620T



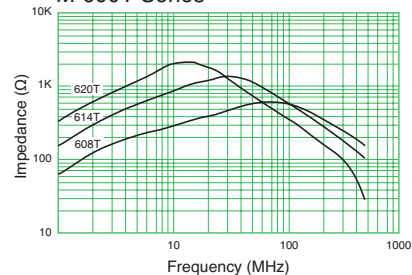
[mm]

**Impedance vs. Frequency**

**M-500CT Series**



**M-600T Series**



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Precautions

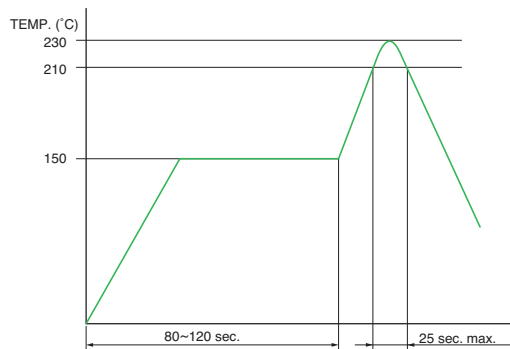
Shelf Life

Use within 6 months. If the product is used after a storage period of 6 months or longer, confirm its solderability before use.

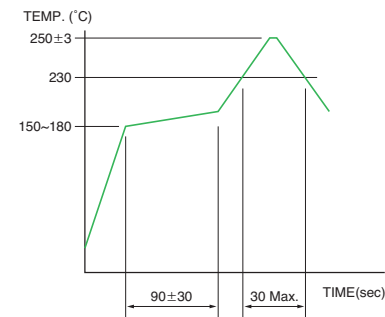
Recommended Soldering Conditions

- Soldering irons:  
Tip temperature:  $350\pm5^{\circ}\text{C}$   
Duration of heat: approx. 4 seconds
- Flow soldering: not suitable
- Reflow soldering: Refer to the following temperature profile.
- Standard thickness of cream Solder =  $150\mu\text{m} \sim 200\mu\text{m}$ .  
Recommended reflow profile shown below are data obtained from reflow equipment used at TOKIN. The Solderability may differ greatly depending on reflow equipment type, reflow condition, land pattern area and the amount of cream Solder. Please check the Solderability thoroughly before actual reflow operation.

Reflow Profile 1 (for SBP-5001T)



Reflow Profile 2 (for lead-free type)

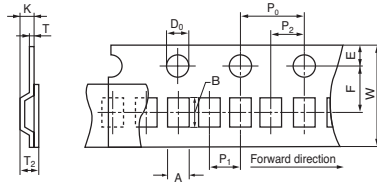


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Tape and Reel Dimensions

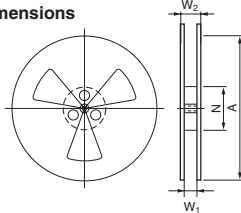
SBS9080 (1000pcs./reel)

Dimensions of indented square hole plastic tape



[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	0.6 $\geq$	7.2 $\geq$	7.0 $\geq$
9.5	10.3	16	7.5	1.75	12	2.0	4.0	1.5	0.6	7.2	7.0

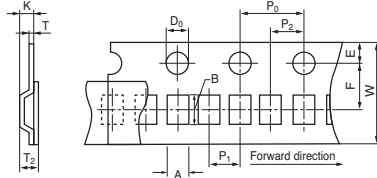
Reel dimensions



[mm]			
A	N	W <sub>1</sub>	W <sub>2</sub>
		±0.5	25 $\geq$
330	100	17.5	25

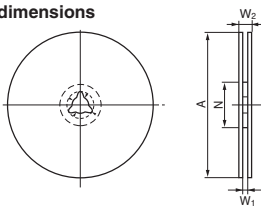
SBP-5001T (1000pcs./reel)

Dimensions of indented square hole plastic tape



[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	0.4 $\geq$	5.7 $\geq$	5.8 $\geq$
9.0	9.0	16	7.5	1.75	12	2.0	4.0	1.5	0.4	5.7	5.8

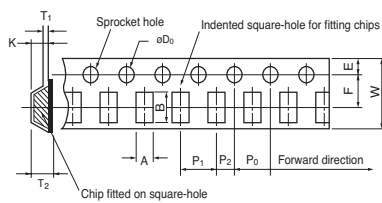
Reel dimensions



[mm]			
A	N	W <sub>1</sub>	W <sub>2</sub>
		+6, -0	25 $\geq$
330	79	16	25

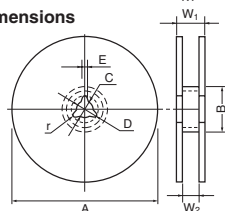
M-521CT/M-522CT/M-523CT/M-524CT (conforms to EIAJ RC-1009) (1500pcs./reel)

Dimensions of indented square hole plastic tape



[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	max.	max.	max.
5.3	9.5	16	7.5	1.75	8.0	2.0	4.0	1.5	0.6	6.5	6.4

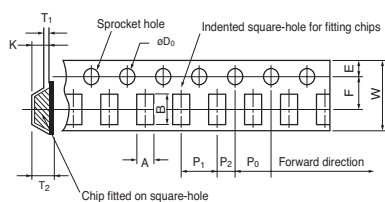
Reel dimensions



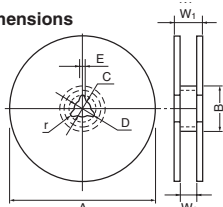
[mm]							
A	B	C	D	E	r	W <sub>1</sub>	W <sub>2</sub>
±3.0	±2.0	±0.2	±0.8	±0.5	—	max.	+6, -0
330	79	13	21	2.0	1.0	25	16



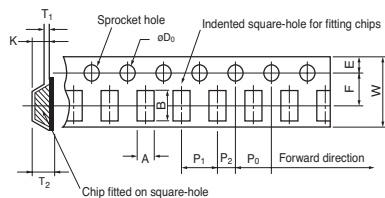
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**M-532CT (conforms to EIAJ RC-1009) (1000pcs./reel)****Dimensions of indented square hole plastic tape**

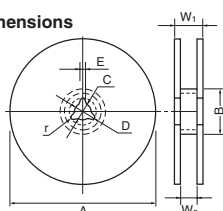
[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	max.	max.	max.
7.9	9.4	16.0	7.5	1.75	12.0	2.0	4.0	1.5	0.6	6.9	6.8

**Reel dimensions**

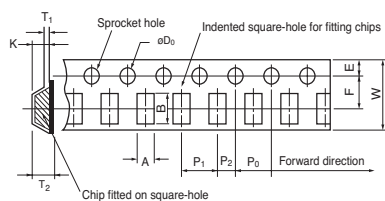
[mm]							
A	B	C	D	E	r	W <sub>1</sub>	W <sub>2</sub>
±3.0	±2.0	±0.2	±0.8	±0.5	—	max.	+6, -0
330	80	13.0	21.0	2.0	1.0	25.0	16.0

**M-538CT (conforms to EIAJ RC-1009) (1500pcs./reel)****Dimensions of indented square hole plastic tape**

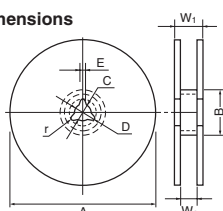
[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	max.	max.	max.
7.9	9.4	16.0	7.5	1.75	12.0	2.0	4.0	1.5	0.6	4.6	4.5

**Reel dimensions**

[mm]							
A	B	C	D	E	r	W <sub>1</sub>	W <sub>2</sub>
±3.0	±2.0	±0.2	±0.8	±0.5	—	max.	+6, -0
330	80	13.0	21.0	2.0	1.0	25.0	16.0

**M-542CT (conforms to EIAJ RC-1009) (1000pcs./reel)****Dimensions of indented square hole plastic tape**

[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1, -0	max.	max.	max.
9.5	10.5	16.0	7.5	1.75	12.0	2.0	4.0	1.5	0.6	7.2	7.0

**Reel dimensions**

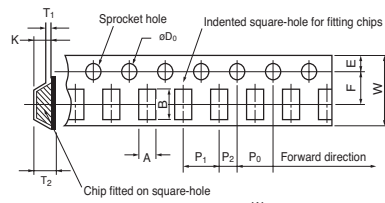
[mm]							
A	B	C	D	E	r	W <sub>1</sub>	W <sub>2</sub>
±3.0	±2.0	±0.2	±0.8	±0.5	—	max.	+6, -0
330	100	13.0	21.0	2.0	1.0	25.0	17.5±0.5



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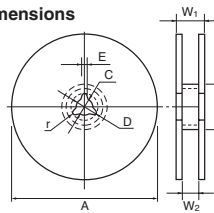
**M-608T/M-614T/M-620T (conforms to EIAJ RC-1009) (1500pcs./reel)**

**Dimensions of indented square hole plastic tape**



[mm]											
A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	D <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	K
±0.3	±0.3	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1,-0	max.	max.	max.
6.4	10.2	16.0	7.5	1.75	8.0	2.0	4.0	1.5	0.6	6.5	6.4

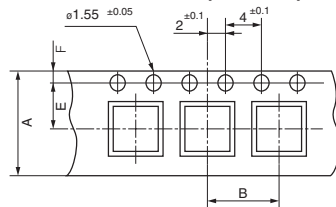
**Reel dimensions**



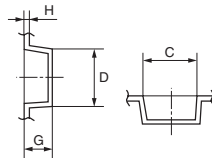
[mm]							
A	B	C	D	E	r	W <sub>1</sub>	W <sub>2</sub>
±3.0	±2.0	±0.2	±0.8	±0.5	—	max.	+6,-0
330	79	13.0	21.0	2.0	1.0	25.0	16.0

**DCM5 Series (2000pcs. /reel)**

**Dimensions of indented square hole plastic tape**



[mm]								
Model	A	B	C	D	E	F	G	H
DCM5 Series	16±0.3	8	6.3	8.3	7.5	1.75	5.2	0.38±0.05



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# Precautions



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- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these components, be sure to check the specifications with the component in question mounted on the products.
- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products that deviates from the characteristics, specifications, or conditions for use described in this catalog.
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