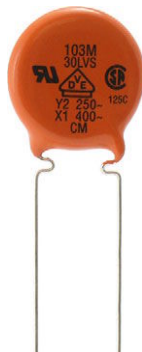


AC Line Rated Disc Capacitors

Class X1, 400 V_{AC} / Class Y2, 300 V_{AC} / 250 V_{AC}


RoHS
COMPLIANT

FEATURES

- Complying with IEC 60384-14
- High reliability
- Complete range of capacitance values
- Radial leads
- Singlelayer AC disc safety capacitors
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

APPLICATIONS

- X1 / Y2 according to IEC 60384-14
- Across-the-line
- Line by-pass
- Antenna coupling

DESIGN

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper having a diameter of 0.032" (0.81 mm) or 0.025" (0.64 mm). The capacitors may be supplied with radial kinked or straight leads having a lead spacing of 0.375" (9.5 mm) or 0.250" (6.4 mm). The standard tolerance is $\pm 20\%$. Coating is made of flame retardant epoxy resin in accordance with "UL 94 V-0."

CAPACITANCE RANGE

1.0 nF to 0.01 μ F

RATED VOLTAGE

IEC 60384-14:

- X1: 400 V_{AC}, 50 Hz
- Y2: 300 V_{AC}, 50 Hz (LS $\geq$ 5.5 mm)
- Y2: 250 V_{AC}, 50 Hz (LS < 5.5 mm)

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2500 V_{AC}, 50 Hz, 2 s

As repeated test admissible only once with:

2250 V_{AC}, 50 Hz, 2 s

Random sampling test (destructive test):

2500 V_{AC}, 50 Hz, 60 s

DIELECTRIC STRENGTH OF BODY INSULATION

2300 V_{AC}, 50 Hz, 60 s (destructive test)

QUICK REFERENCE DATA

DESCRIPTION	VALUE					
Ceramic Class	2					
Ceramic Dielectric	Y5U	Y5U	Y5U	Y5V	Y5V	Y5V
Voltage (V _{AC})	250	300	400	250	300	400
Min. Capacitance (pF)	1000			4700		
Max. Capacitance (pF)	10 000			10 000		
Mounting	Radial					

INSULATION RESISTANCE

Min. 1000 Ω F

TOLERANCE ON CAPACITANCE

 $\pm 20\%$

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

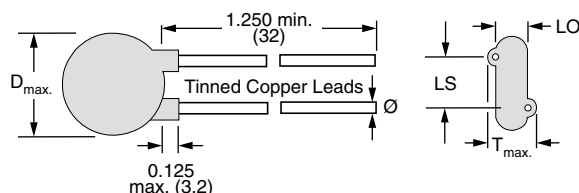
Y5U, Y5V (Class 2)

CLIMATIC CATEGORY ACC. TO EN 60068-1

25/125/21

OPERATING TEMPERATURE RANGE

-30 °C to +125 °C

DIMENSIONS in inches (millimeters)

ORDERING INFORMATION, CERAMIC X1 / Y2 CAPACITORS 30LVS

C (pF)	TOL. (%)	D _{max.} DIAMETER INCH (mm)	T _{max.} THICKNESS INCH (mm)	WIRE SIZE		LS LEAD SPACE INCH (mm) ± 1 mm	LO LEAD OFFSET INCH (mm) ± 0.5 mm	ORDERING CODE
				AWG	INCH (mm)			
Y5U								
1000	± 20	0.330 (8.4)	0.195 (5.0)	22	0.025 (0.64)	0.250 (6.4)	0.098 (2.5)	30LVSD10-R
1500		0.330 (8.4)	0.185 (4.7)				0.091 (2.3)	30LVSD15-R
2000		0.330 (8.4)	0.180 (4.6)				0.083 (2.1)	30LVSD20-R
2200		0.330 (8.4)	0.170 (4.3)				0.079 (2.0)	30LVSD22-R
2700		0.365 (9.3)	0.180 (4.6)				0.083 (2.1)	30LVSD27-R
2800		0.365 (9.3)	0.175 (4.4)				0.079 (2.0)	30LVSD28-R
3000		0.400 (10.2)	0.180 (4.6)				0.083 (2.1)	30LVSD30-R
3200		0.400 (10.2)	0.180 (4.6)				0.091 (2.3)	30LVSD32-R
3300		0.400 (10.2)	0.175 (4.4)				0.083 (2.1)	30LVSD33-R
3900		0.460 (11.7)	0.185 (4.7)				0.098 (2.5)	30LVSD39-R
4000		0.490 (12.4)	0.190 (4.8)				0.102 (2.6)	30LVSD40-R
4700		0.490 (12.4)	0.185 (4.7)				0.094 (2.4)	30LVSD47-R
5000		0.530 (13.5)	0.190 (4.8)				0.098 (2.5)	30LVSD50-R
5500		0.530 (13.5)	0.180 (4.6)				0.091 (2.3)	30LVSD55-R
6800		0.620 (15.7)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	0.098 (2.5)	30LVSD68-R
0.010 μF		0.720 (18.3)	0.200 (5.1)				0.102 (2.6)	30LVSS10-R
Y5V								
4700	± 20	0.430 (10.9)	0.185 (4.7)	22	0.025 (0.64)	0.250 (6.4)	0.091 (2.3)	30LVSD47-R
0.010 μF	± 20	0.620 (15.7)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	0.098 (2.5)	30LVSVS10-R

Notes

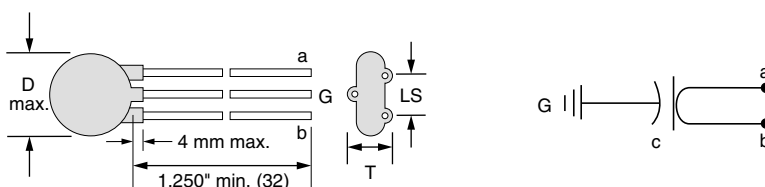
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

TAPE AND REEL OPTIONS

Part number codes and specifications for tape and reel packaging are found in the general information document - find web-link below.

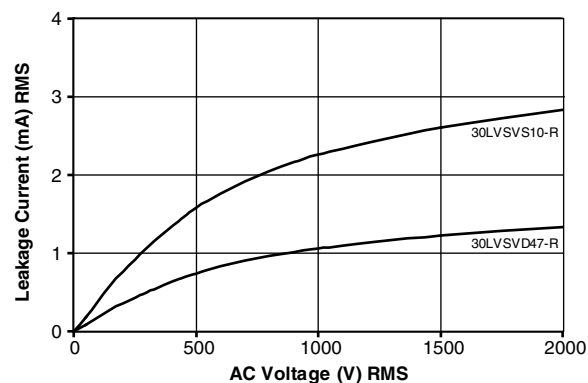
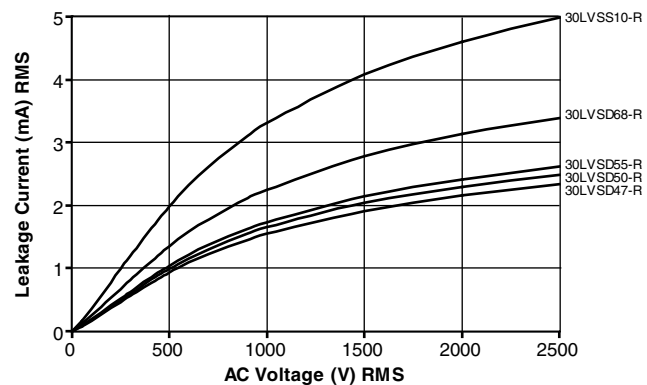
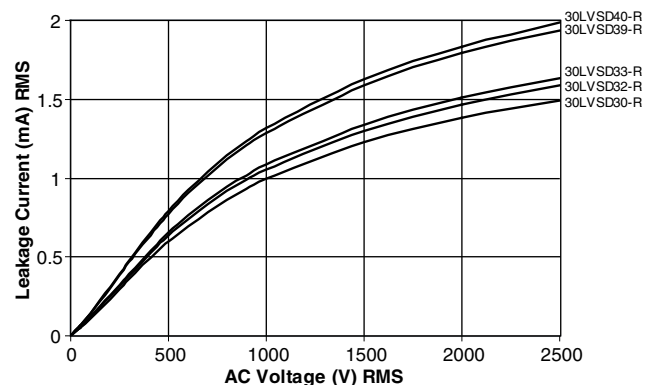
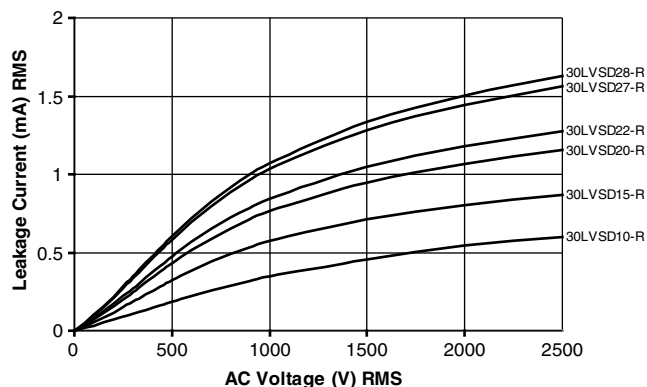
OPTIONAL 3-LEADED STYLE

An optional 3-leaded construction is available. It consists of a single capacitor with the two outside leads attached to one electrode, and the center lead attached to the electrode. Used in feed-thru or line-to-ground applications, it allows a short ground lead for enhanced high frequency performance.

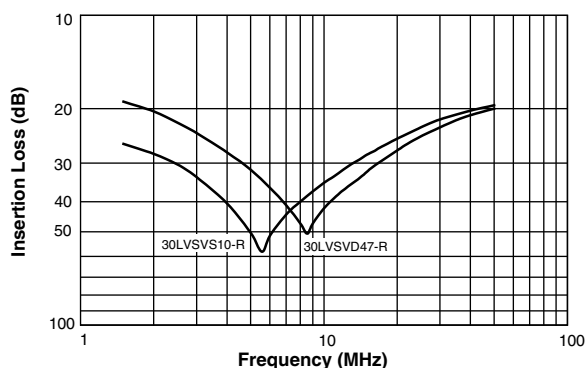
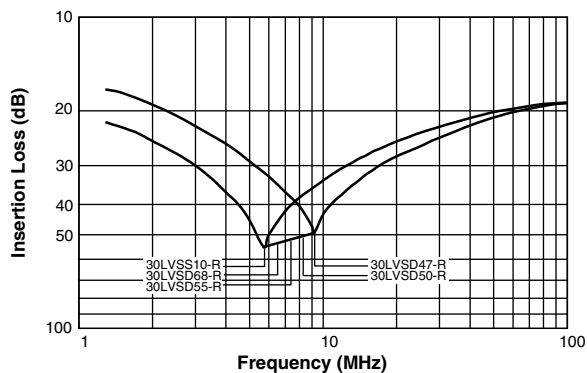
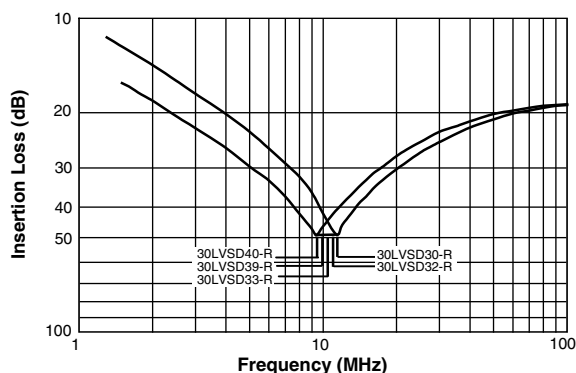
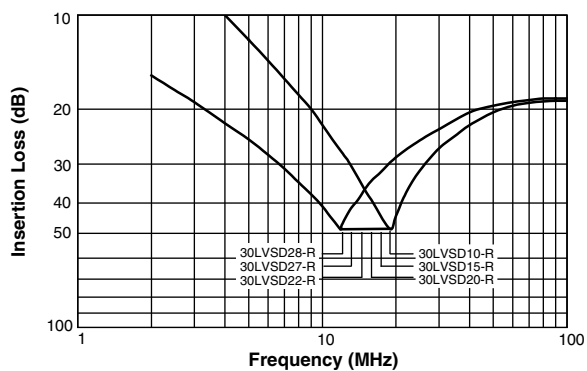




LEAKAGE CURRENT VS. VOLTAGE (Typical)



INSERTION LOSS VS. FREQUENCY (Typical)



APPROVALS

IEC 60384-14 - Safety tests

This approval together with CB test certificate substitutes all national approvals.

CB Certificate

Y2-capacitor: CB test certificate:	CA/14038/CSA	1 nF to 10 nF	300 V _{AC} ⁽¹⁾
Y2-capacitor: CB test certificate:	CA/14038/CSA	1 nF to 10 nF	250 V _{AC} ⁽¹⁾
X1-capacitor: CB test certificate:	CA/14038/CSA	1 nF to 10 nF	400 V _{AC}



VDE

Y2-capacitor: VDE marks approval:	40003969	1 nF to 10 nF	250 V _{AC}
X1-capacitor: VDE marks approval:	40003969	1 nF to 10 nF	400 V _{AC}



DIN EN 60384-14 VDE 0565-1-1 - Safety tests

Underwriters Laboratories Inc.

Y2-capacitor: UL test certificate:	E99264	1 nF to 10 nF	300 V _{AC} ⁽¹⁾
Y2-capacitor: UL test certificate:	E99264	1 nF to 10 nF	250 V _{AC} ⁽¹⁾
X1-capacitor: UL test certificate:	E99264	1 nF to 10 nF	400 V _{AC}



UL 60384-14, CSA E60384-1, CSA E60384-14

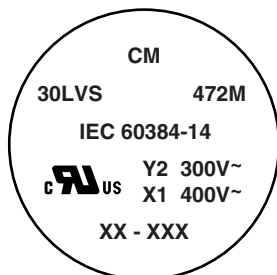
Fixed capacitors for electromagnetic interference suppression and connection to the supply mains.

Note

⁽¹⁾ LS ≥ 5.5 mm: 300 V_{AC}; LS < 5.5 mm: 250 V_{AC}

MARKING

Sample



Notes

- Marking IEC 60384-14 does not apply for Ø ≤ 9 mm
- Coding is as follows: 1st figure indicates the year and 2nd figure indicates the month according to IEC 60062. The 3rd to 5th figure indicate the last three digits of the lot number

RELATED DOCUMENTS

General Information	www.vishay.com/doc?23140
CB Test Certificate	www.vishay.com/doc?22231
VDE Marks Approval	www.vishay.com/doc?22232
UL Test Certificate	www.vishay.com/doc?22233



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