AC Line Rated Disc Capacitors
Class X1, 400 V_{AC}/Class Y2, 300 V_{AC}

QUICK REFERENCE DATA				
DESCRIPTION	VALUE			
Ceramic Class	1		2	
Ceramic Dielectric	C0G, U2J, P3K, R3L, S3L	C0G, U2J, P3K, R3L, S3L	X7R, Y5U	X7R, Y5U
Voltage (V_{AC})	300	400	300	400
Min. Capacitance (pF)	10		100	
Max. Capacitance (pF)	68		15 000	
Mounting	Radial			

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 10 %; ± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

C0G, U2J, P3K, R3L (Class 1)
X7R, Y5U (Class 2)

CLIMATIC CATEGORY ACC. TO EN 60068-1

25/125/21

OPERATING TEMPERATURE RANGE

-30 °C to +125 °C

FEATURES

- Complying with IEC 60384-14 3rd edition
- 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

RoHS COMPLIANT

APPLICATIONS

- X1/Y2 according to IEC 60384-14.3
- 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 ± 20 %. Coating is made of flame retardant epoxy resin in accordance with “UL 94 V-0.”

CAPACITANCE RANGE

10 pF to 0.015 µF

RATED VOLTAGE

IEC 60384-14.3:

- X1: 400 V_{AC}, 50 Hz
- Y2: 300 V_{AC}, 50 Hz

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:
2500 V_{AC}, 50 Hz, 2 s

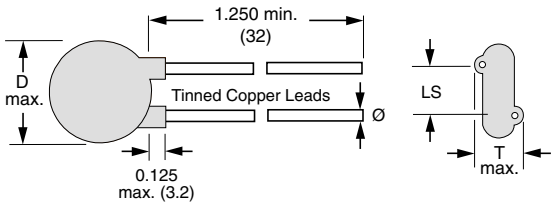
As repeated test admissible only once with:
2250 V_{AC}, 50 Hz, 2 s

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)

DIMENSIONS in inches (millimeters)



ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 30LV

C (pF)	TOL. (%)	$D_{max.}$ DIAMETER INCH (mm)	$T_{max.}$ THICKNESS INCH (mm)	WIRE SIZE		LS LEAD SPACE INCH (mm)	ORDERING CODE
				AWG	INCH (mm)		
C0G							
10	± 10	0.330 (8.4)	0.190 (4.8)	22	0.025 (0.64)	0.250 (6.4)	30LVQ10-R
U2J							
15	± 10	0.330 (8.4)	0.200 (5.1)	22	0.025 (0.64)	0.250 (6.4)	30LVQ15-R
P3K							
22	± 10	0.330 (8.4)	0.185 (4.7)	22	0.025 (0.64)	0.250 (6.4)	30LVQ22-R
R3L							
33	± 10	0.330 (8.4)	0.190 (4.8)	22	0.025 (0.64)	0.250 (6.4)	30LVQ33-R
47	± 10	0.330 (8.4)	0.170 (4.3)	22	0.025 (0.64)	0.250 (6.4)	30LVQ47-R
S3L							
68	± 10	0.330 (8.4)	0.175 (4.4)	22	0.025 (0.64)	0.250 (6.4)	30LVQ68-R
X7R							
100	± 10	0.330 (8.4)	0.200 (5.1)	22	0.025 (0.64)	0.250 (6.4)	30LVT10-R
150		0.330 (8.4)	0.180 (4.6)				30LVT15-R
220		0.330 (8.4)	0.190 (4.8)				30LVT22-R
330		0.330 (8.4)	0.210 (5.3)				30LVT33-R
470		0.330 (8.4)	0.180 (4.6)				30LVT47-R
560		0.330 (8.4)	0.190 (4.8)				30LVT56-R
680		0.330 (8.4)	0.180 (4.6)				30LVTT68-R
1000		0.365 (9.3)	0.185 (4.7)				30LVTD10-R
1500		0.460 (11.7)	0.180 (4.6)				30LVTD15-R
Y5U							
680	± 20	0.330 (8.4)	0.210 (5.3)	22	0.025 (0.64)	0.250 (6.4)	30LVT68-R
1000		0.330 (8.4)	0.215 (5.5)				30LVD10-R
1500		0.330 (8.4)	0.195 (5.0)				30LVD15-R
2000		0.400 (10.2)	0.210 (5.3)				30LVD20-R
2200		0.400 (10.2)	0.200 (5.1)				30LVD22-R
2700		0.430 (10.9)	0.200 (5.1)				30LVD27-R
2800		0.430 (10.9)	0.200 (5.1)				30LVD28-R
3000		0.460 (11.7)	0.200 (5.1)				30LVD30-R
3200		0.430 (10.9)	0.200 (5.1)				30LVD32-R
3300		0.460 (11.7)	0.195 (5.0)				30LVD33-R
3900		0.490 (12.4)	0.200 (5.1)				30LVD39-R
4000		0.530 (13.5)	0.210 (5.3)				30LVD40-R

ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 30LV							
C (pF)	TOL. (%)	$D_{max.}$ DIAMETER INCH (mm)	$T_{max.}$ THICKNESS INCH (mm)	WIRE SIZE		LS LEAD SPACE INCH (mm)	ORDERING CODE
				AWG	INCH (mm)		
Y5U							
4700	± 20	0.620 (15.7)	0.230 (5.8)	20	0.032 (0.81)	0.375 (9.5)	30LVD47-R
5000		0.620 (15.7)	0.225 (5.7)				30LVD50-R
5500		0.560 (14.2)	0.195 (5.0)				30LVD55-R
5600		0.560 (14.2)	0.205 (5.2)				30LVD56-R
6800		0.620 (15.7)	0.215 (5.5)				30LVD68-R
8000		0.680 (17.3)	0.205 (5.2)				30LVD80-R
9000		0.720 (18.3)	0.210 (5.3)				30LVD90-R
0.010 µF		0.790 (20.1)	0.225 (5.7)				30LVS10-R
0.015 µF		0.900 (22.9)	0.210 (5.3)				30LVS15-R

Notes

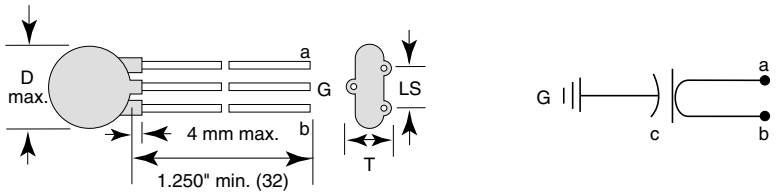
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

TAPE AND REEL OPTIONS

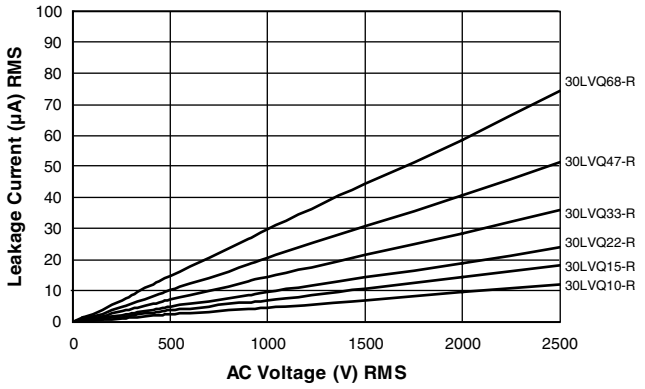
Part number codes and specifications for tape and reel packaging are found in the general information document - find web-link below.

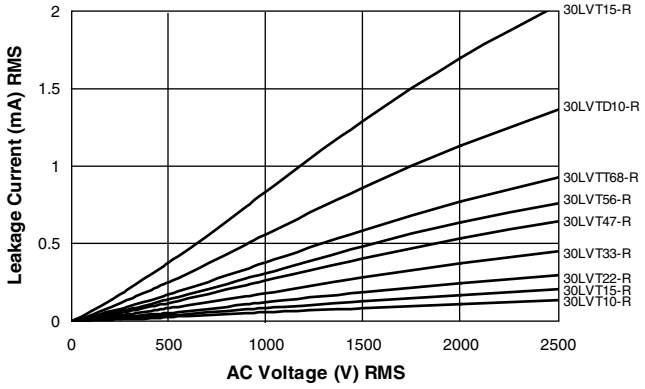
OPTIONAL 3-LEADED STYLE

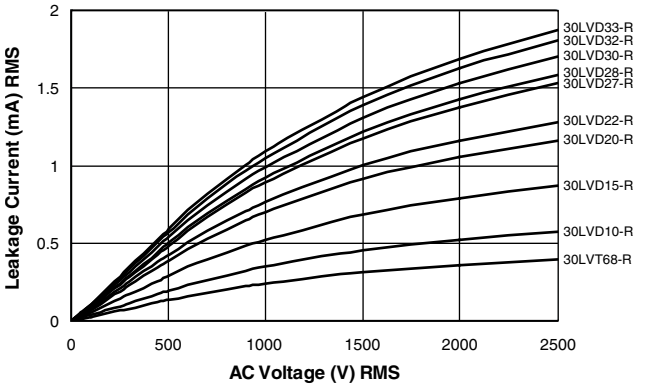
An optional 3-leaded construction is available. It consists of a single capacitor with the two outside leads attached to one electrode, and the center lead attached to the electrode. Used in feed-thru or line-to-ground applications, it allows a short ground lead for enhanced high frequency performance.

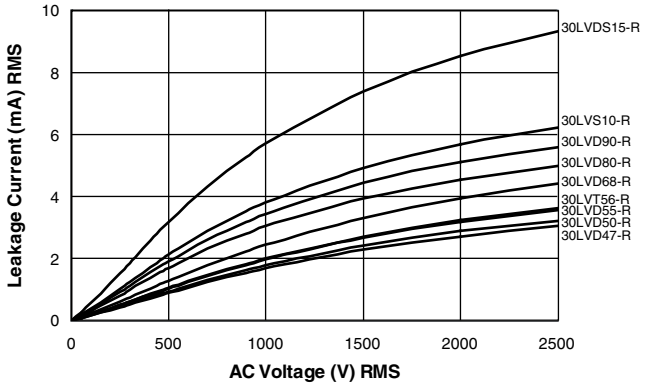


LEAKAGE CURRENT VS. VOLTAGE (Typical)

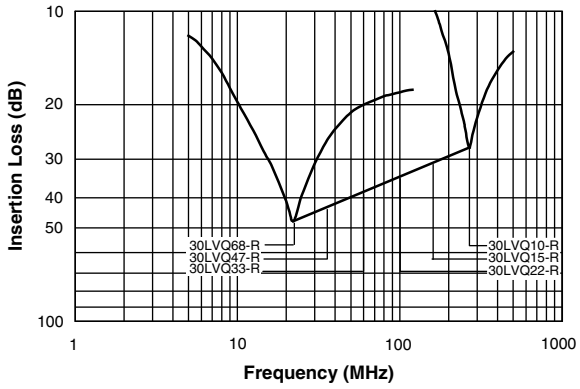


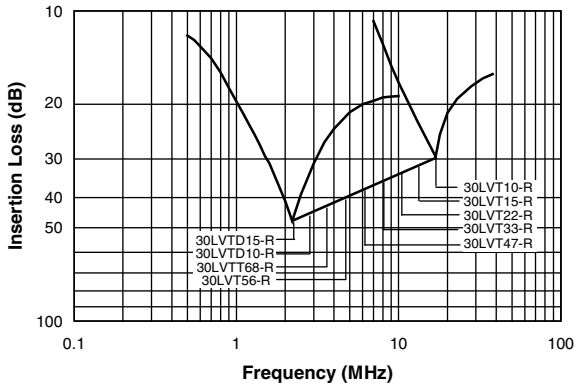


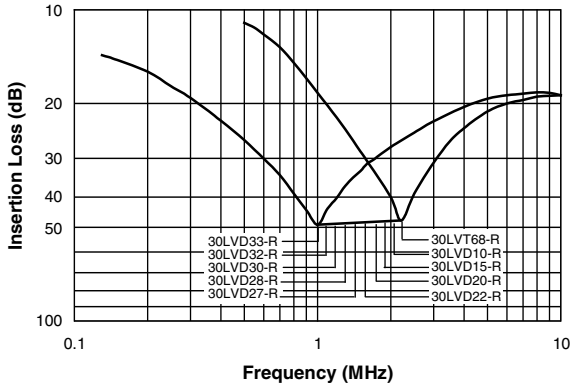


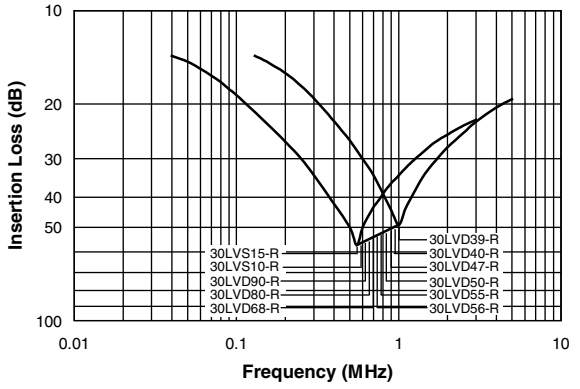


INSERTION LOSS VS. FREQUENCY (Typical)









APPROVALS

IEC 60384-14.3 - Safety tests
This approval together with CB test certificate substitutes all national approvals.

CB Certificate

Y2-capacitor: CB test certificate:	CA/14037/CSA	10 pF to 15 nF	300 V_{AC}
X1-capacitor: CB test certificate:	CA/14037/CSA	10 pF to 15 nF	400 V_{AC}

VDE

Y2-capacitor: VDE marks approval:	40003992	10 pF to 15 nF	300 V_{AC} (1)
Y2-capacitor: VDE marks approval:	40003992	10 pF to 15 nF	250 V_{AC} (1)
X1-capacitor: VDE marks approval:	40003992	10 pF to 15 nF	400 V_{AC}

DIN EN 60384-14 VDE 0565-1-1:2006-04 - Safety tests

Underwriters Laboratories Inc.

Y2-capacitor: UL test certificate:	E99264	10 pF to 15 nF	300 V_{AC}
X1-capacitor: UL test certificate:	E99264	10 pF to 15 nF	400 V_{AC}

UL 60384-14, CSA E60384-1:03, CSA E60384-14:09

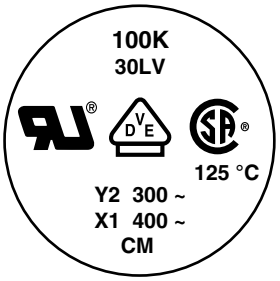
Fixed capacitors for electromagnetic interference suppression and connection to the supply mains.

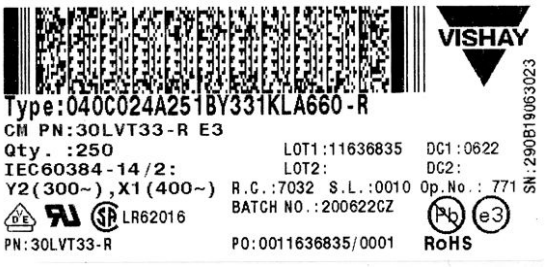
Note

(1) LS ≥ 7.5 mm: 300 V_{AC}; 5.0 mm ≤ LS < 7.5 mm: 250 V_{AC}

MARKING

Sample





RELATED DOCUMENTS

General Information	www.vishay.com/doc?23140
CB Test Certificate	www.vishay.com/doc?22228
VDE Marks Approval	www.vishay.com/doc?22229
UL Test Certificate	www.vishay.com/doc?22230

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