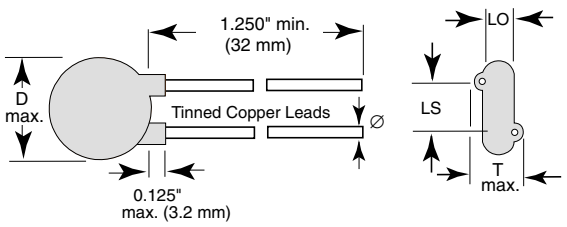
AC Line Rated Disc Capacitors
Class X1, 400 VAC/Class Y2, 250 VAC



LO' = 0.125" (3.2 mm) typ.

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

Y5U, Y5V (Class 2)

CATEGORY TEMPERATURE RANGE

- 25 °C to + 125 °C

CLIMATIC CATEGORY ACC. TO EN60068-1

25/125/21

OPERATING TEMPERATURE RANGE

- 30 °C to + 125 °C

FEATURES

RoHS COMPLIANT

- Worldwide safety agency recognition
  Underwriters laboratories - UL 1414 and UL 1283
  Canadian standards association - CSA 22.2
  European EN132400 to IEC 60384-14 second edition
- Complete range of capacitance values
- Radial leads
- Compliant to RoHS directive 2002/95/EC

APPLICATIONS

- Required in AC Power Supply and Filter Applications
- Specific Industry Requirements

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

1.0 nF to 0.01 µF

RATED VOLTAGE

IEC 60384-14.2:	(Y2): 250 VAC, 50 Hz
IEC 60384-14.2:	(X1): 400 VAC, 50 Hz
UL 1414:	250 VAC, 60 Hz
UL 1283:	250 VAC, 60 Hz
CSA 22.2 No.1:	250 VAC, 60 Hz
CSA 22.2 No.8:	400 VAC, 60 Hz

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2500 VAC, 50 Hz, 2 s

As repeated test admissible only once with:

2250 VAC, 50 Hz, 2 s

Random sampling test (destructive test):

2500 VAC, 50 Hz, 60 s

DIELECTRIC STRENGTH OF BODY INSULATION

2300 VAC, 50 Hz, 60 s (destructive test)

ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 30LVS							
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	WIRE SIZE AWG	WIRE SIZE INCH (mm)	LS LEAD SPACE INCH (mm)	ORDERING CODE
Y5U							
1000	± 20 %	0.330 (8.4)	0.195 (5.0)	22	0.025 (0.64)	0.250 (6.4)	30LVSD10-R
1500		0.330 (8.4)	0.185 (4.7)				30LVSD15-R
2000		0.330 (8.4)	0.175 (4.4)				30LVSD20-R
2200		0.330 (8.4)	0.170 (4.3)				30LVSD22-R
2700		0.365 (9.3)	0.180 (4.6)				30LVSD27-R
2800		0.365 (9.3)	0.180 (4.6)				30LVSD28-R
3000		0.400 (10.2)	0.180 (4.6)				30LVSD30-R
3200		0.400 (10.2)	0.175 (4.4)				30LVSD32-R
3300		0.400 (10.2)	0.175 (4.4)				30LVSD33-R
3900		0.460 (11.7)	0.185 (4.7)				30LVSD39-R
4000		0.490 (12.4)	0.185 (4.7)				30LVSD40-R
4700		0.490 (12.4)	0.180 (4.6)				30LVSD47-R
5000		0.530 (13.5)	0.180 (4.6)				30LVSD50-R
5500		0.530 (13.5)	0.185 (4.7)				30LVSD55-R
6800		0.620 (15.7)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	30LVSD68-R
0.010 µF		0.720 (18.3)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	30LVSS10-R
Y5V							
4700	± 20 %	0.430 (10.9)	0.185 (4.7)	22	0.025 (0.64)	0.250 (6.4)	30LVSVD47-R
0.010 µF	± 20 %	0.620 (15.7)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	30LVSVS10-R

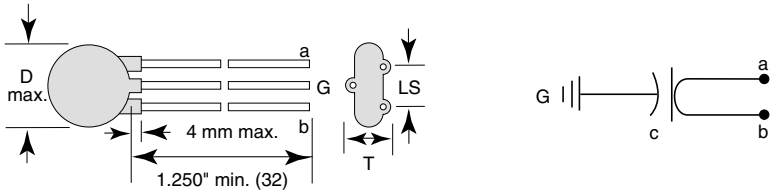
Notes
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- European required minimum lead clearance (prevents use of inside crimp) 0.118" (3 mm)

TAPE AND REEL OPTIONS

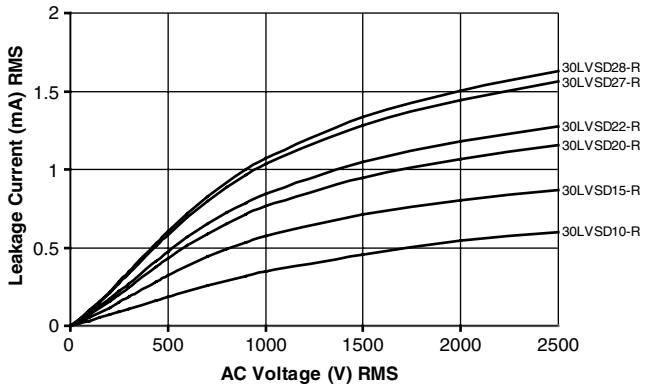
- To specify tape and reel, add two letter suffix to the ordering code (for details of the packaging code see general section of the catalog)

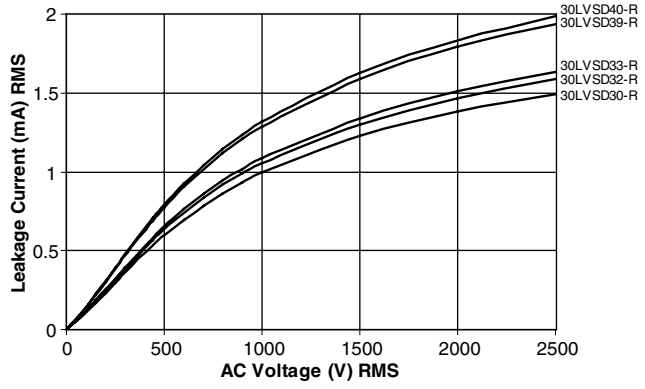
OPTIONAL 3-LEADED STYLE

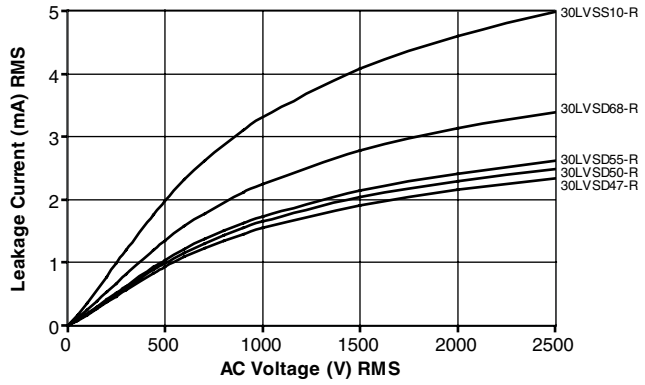
An optional 3-leaded construction is available. It consists of a single capacitor with the two outside leads attached to one electrode, and the center lead attached to the electrode. Used in feed-thru or line-to-ground applications, it allows a short ground lead for enhanced high frequency performance.

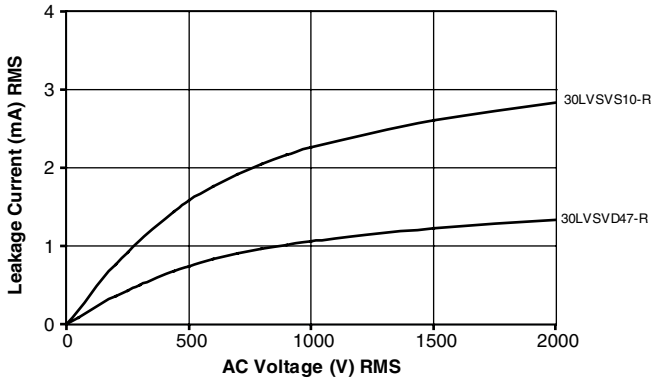


LEAKAGE CURRENT VS. VOLTAGE (TYPICAL)

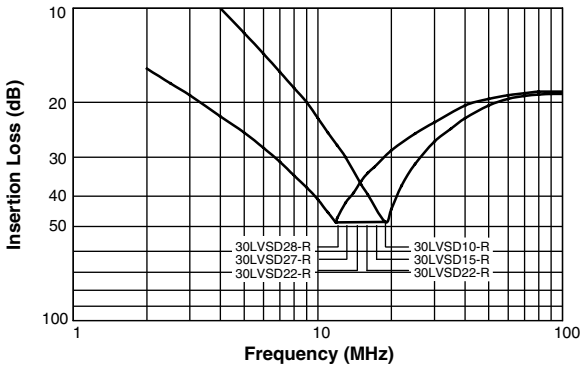


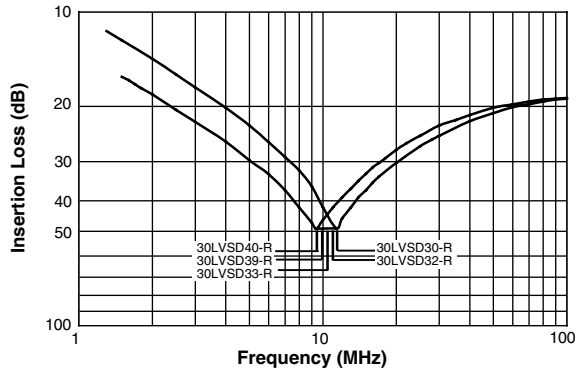


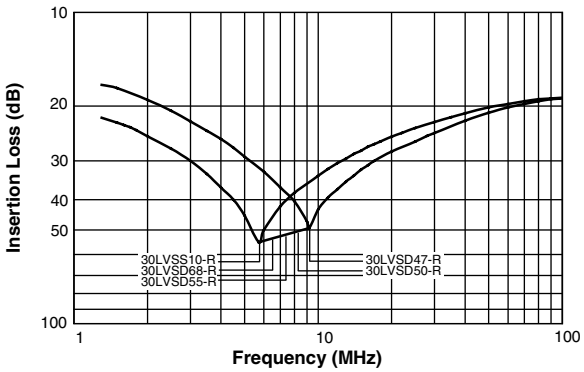


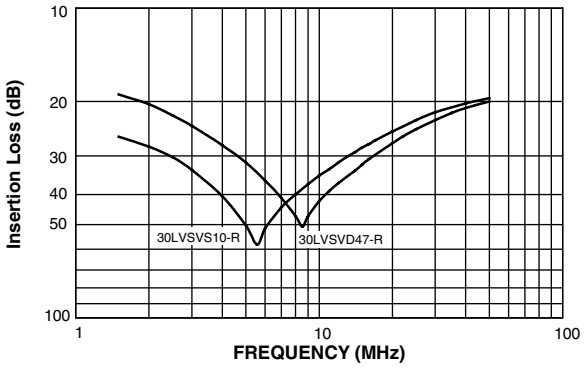


INSERTION LOSS VS. FREQUENCY (TYPICAL)









APPROVALS

IEC 60384 - 14/2nd Issue (1993) incl. Am.1 (1995) - Safety Tests
EN132400 (1994) - Safety Tests

That approval together with CB Test Certificate substitutes the national approval of the following nations:

Belgium	France	Italy	Austria	China	Japan	Spain
Denmark	Greece	Luxembourg	Portugal	Singapore	Poland	United Kingdom
Germany	Ireland	Netherlands	Sweden	Slovenia	Hungaria	Czech Republic
Finland	Iceland	Norway	Switzerland	Korea	Israel	

X1 Capacitor: CB-Test Certificate:	DE 1-19445	1000 pF... 0.010 µF	400 V_{AC}
Y2 Capacitor: CB-Test Certificate:	DE 1-19445	1000 pF... 0.010 µF	250 V_{AC}

UNDERWRITERS LABORATORIES INC.

UL 1414	Line-by-pass component Agency File/License	E99264 V2S3	1000 pF... 0.010 µF	250 V_{AC}
UL 1283	EMI Filters Agency File/License	E99264 V1S1	1000 pF... 0.010 µF	250 V_{AC}

CANADIAN STANDARDS ASSOCIATION

CSA C22.2 No. 1	Isolation component Agency File/License	LR 62016-12	1000 pF... 0.010 µF	250 V_{AC}
CSA C22.2 No. 8	Line-to-ground, EMI filter Agency File/License	LR 62016-3	1000 pF... 0.010 µF	400 V_{AC}

Note 1

UL1414 Across-The-Line, Antenna Coupling, and Line-By-Pass Capacitors:

- Across-The-Line - A capacitor connected either across a supply circuit or between one side of a supply circuit and a conductive part that may be connected to earth ground.
- Antenna-Coupling - A capacitor connected from an antenna terminal to circuits within an appliance.
- Line-By-Pass - A capacitor connected between one side of a supply circuit and an accessible conductive part

Note 2

IEC 60384-14 Subclass Y Capacitors:

- A capacitor of a type suitable for use in situations where failure of the capacitor could lead to danger of electric shock.
- Class Y capacitors are divided into sub- classes based on type of insulation bridged and voltage ranges.
- For definitions of basic, supplementary, double and reinforced insulation, see IEC Publication 536.
- Subclass Y capacitors may be used in applications which require a Subclass X rating.

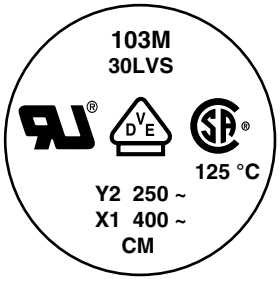
Note 3

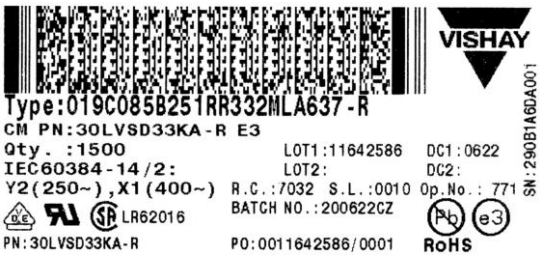
IEC 60384-14 Subclass X Capacitors:

- A capacitor of a type suitable for use in situations where failure of the capacitor in situations where failure of the capacitor would not lead to danger of electric shock.
- Class X capacitors are divided into subclasses according to the peak impulse test voltage superimposed on the main voltage

MARKING

Sample





Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.