AC Line Rated Disc Capacitors
Class X1, 400 V_{AC}/Class Y2, 300 V_{AC}/250 V_{AC}

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 ΩF

TOLERANCE ON CAPACITANCE
± 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

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
1.0 nF to 0.01 µF

RATED VOLTAGE
IEC 60384-14.3:
- X1: 400 V_{AC}, 50 Hz
- Y2: 300 V_{AC}, 50 Hz (LS ≥ 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

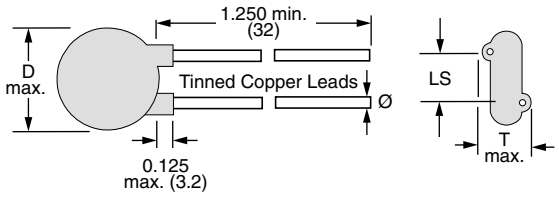
As repeated test admissible only once with:
2250 V_{AC}, 50 Hz, 2 s

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)

For technical questions, contact: ceramitesupport@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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)	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)	30LVSD10-R
1500		0.330 (8.4)	0.185 (4.7)				30LVSD15-R
2000		0.330 (8.4)	0.180 (4.6)				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)	0.175 (4.4)				30LVSD28-R
3000		0.400 (10.2)	0.180 (4.6)				30LVSD30-R
3200		0.400 (10.2)	0.180 (4.6)				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)	0.190 (4.8)				30LVSD40-R
4700		0.490 (12.4)	0.185 (4.7)				30LVSD47-R
5000		0.530 (13.5)	0.190 (4.8)				30LVSD50-R
5500		0.530 (13.5)	0.180 (4.6)				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)				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

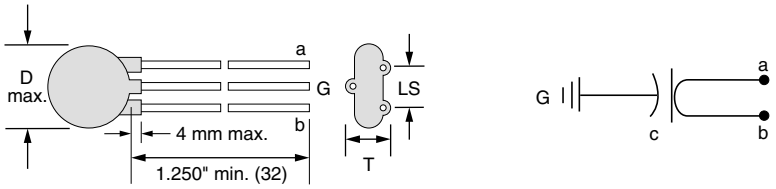
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

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.

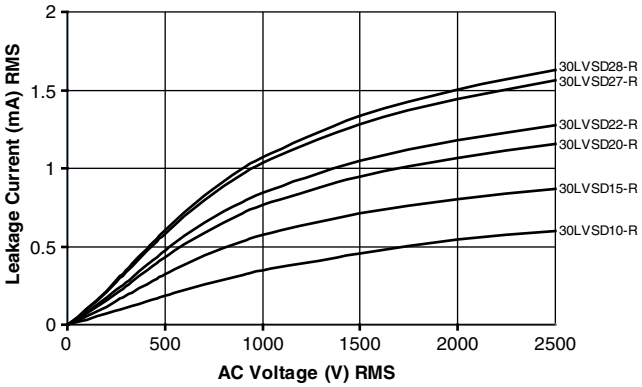
OPTIONAL 3-LEADED STYLE

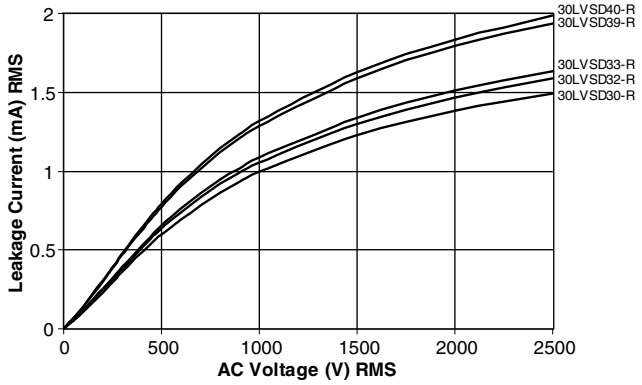
An optional 3-leaded construction is available. It consists of a single capacitor with the two outside leads attached to one electrode, and the center lead attached to the electrode. Used in feed-thru or line-to-ground applications, it allows a short ground lead for enhanced high frequency performance.

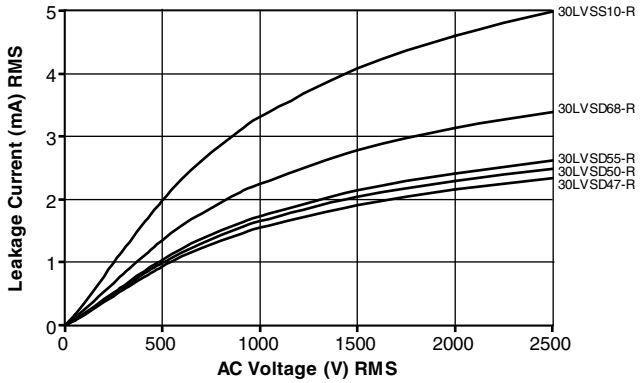


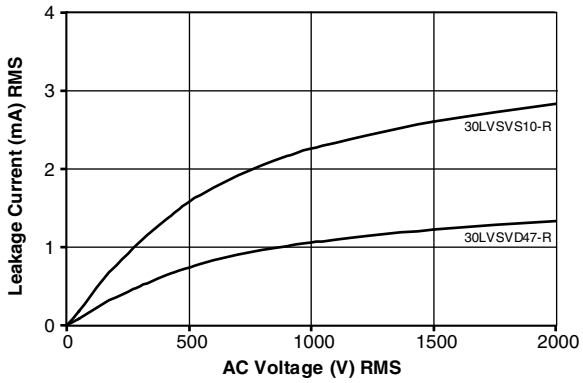
For technical questions, contact: ceramitesupport@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

LEAKAGE CURRENT VS. VOLTAGE (Typical)

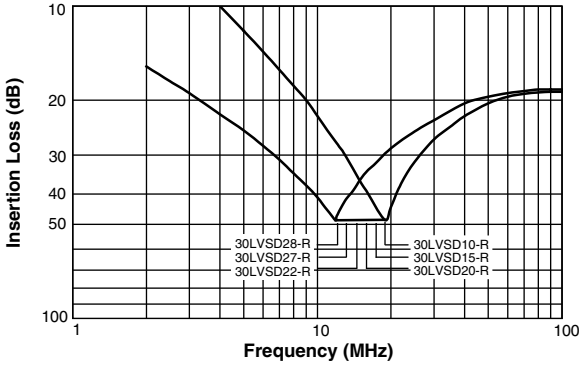


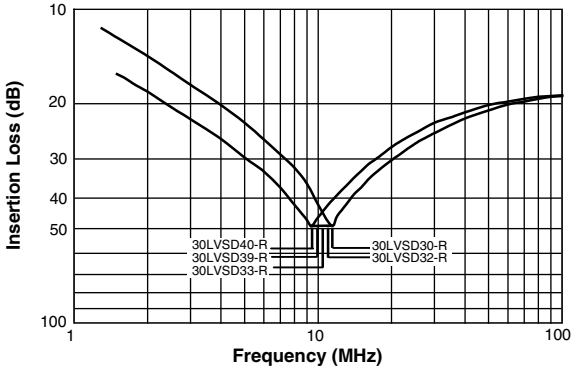


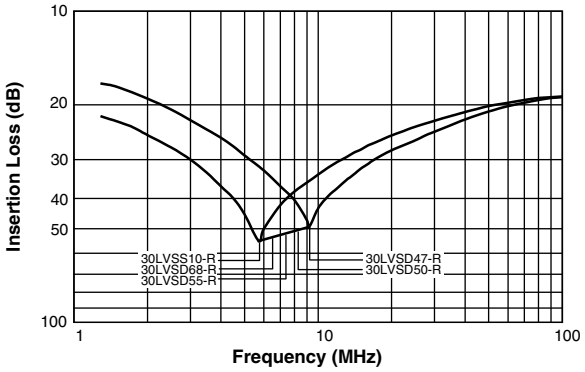


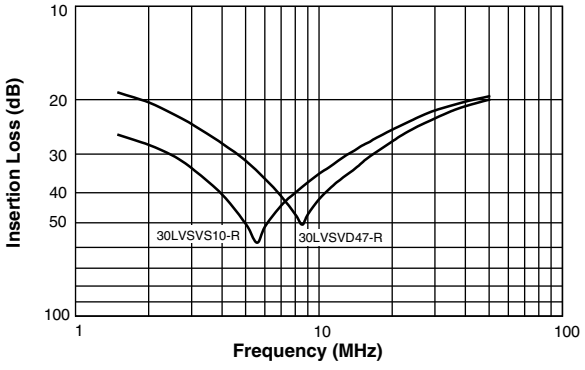


INSERTION LOSS VS. FREQUENCY (Typical)









For technical questions, contact: ceramitesupport@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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/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 0565-1-1:2006-04 - 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 E60384-1:03, CSA E60384-14:09

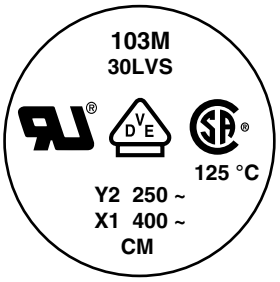
Fixed capacitors for electromagnetic interference suppression and connection to the supply mains.

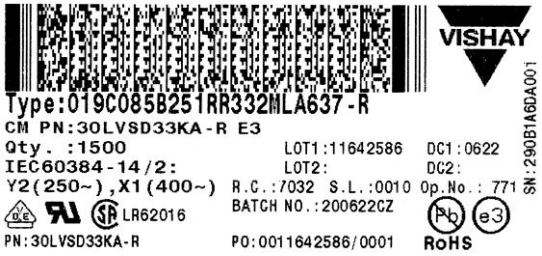
Note

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

MARKING

Sample





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

For technical questions, contact: ceramitesupport@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.