AC Line Rated Ceramic Disc Capacitors
Class X1, 400 V_{AC} / Class Y4, 125 V_{AC}

QUICK REFERENCE DATA		
DESCRIPTION	VALUE	
Ceramic Class	2	
Ceramic Dielectric	Y5V	
Voltage (V_{AC})	125	400
Min. Capacitance (pF)	1000	
Max. Capacitance (pF)	50 000	
Mounting	Radial	

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

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, Y4 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 0.050 µF

RATED VOLTAGE

IEC 60384-14.3:

- X1: 400 V_{AC}, 50 Hz
- Y4: 125 V_{AC}, 50 Hz

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:
2000 V_{AC}, 50 Hz, 2 s

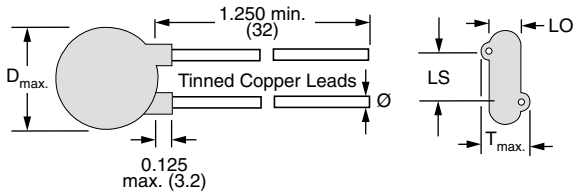
As repeated test admissible only once with:
1800 V_{AC}, 50 Hz, 2 s

Random sampling test (destructive test):
2000 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 / Y4 CAPACITORS 125L

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)			
1000	± 20	0.330 (8.4)	0.195 (5.0)	20	0.032 (0.81)	0.250 (6.4)	0.094 (2.4)	125LD10-R
1500		0.330 (8.4)	0.195 (5.0)				0.098 (2.5)	125LD15-R
2000		0.330 (8.4)	0.188 (4.8)				0.091 (2.3)	125LD20-R
2200		0.330 (8.4)	0.182 (4.7)				0.083 (2.1)	125LD22-R
3300		0.365 (9.3)	0.195 (5.0)				0.094 (2.4)	125LD33-R
4700		0.400 (10.2)	0.185 (4.7)				0.087 (2.2)	125LD47-R
5000		0.430 (11.0)	0.195 (5.0)			0.375 (9.5)	0.094 (2.4)	125LD50-R
6800		0.490 (12.5)	0.198 (5.1)				0.098 (2.5)	125LD68-R
8200		0.530 (13.5)	0.193 (5.0)				0.094 (2.4)	125LD82-R
0.010 µF		0.560 (14.3)	0.195 (5.0)				0.098 (2.5)	125LS10-R
0.015 µF		0.720 (18.3)	0.205 (5.3)				0.102 (2.6)	125LS15-R
0.018 µF		0.790 (20.1)	0.205 (5.3)				0.106 (2.7)	125LS18-R
0.020 µF		0.720 (18.3)	0.250 (6.4)	22	0.025 (0.64)		0.087 (2.2)	125LS20-R
0.022 µF		0.790 (20.1)	0.192 (4.9)	20	0.032 (0.81)		0.094 (2.4)	125LS22-R
0.030 µF		0.720 (18.3)	0.240 (6.1)	22	0.025 (0.64)		0.087 (2.2)	125LS30-R
0.050 µF		0.925 (23.5)	0.275 (7.0)	22	0.025 (0.64)		0.087 (2.2)	125LS50-R

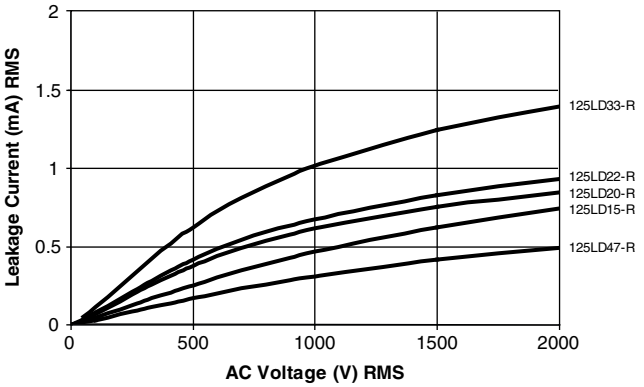
Notes

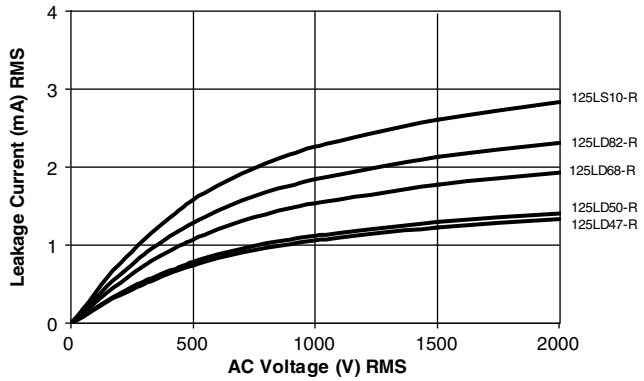
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

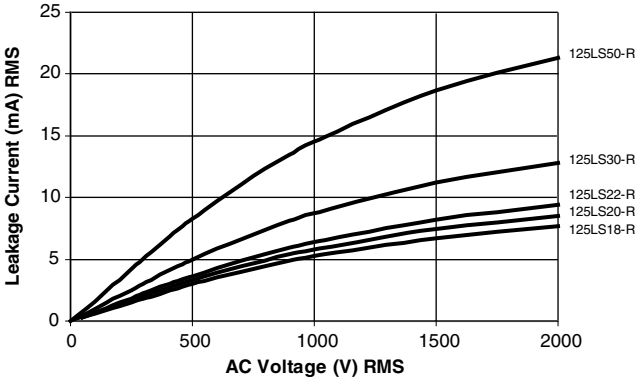
TAPE AND REEL OPTIONS

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

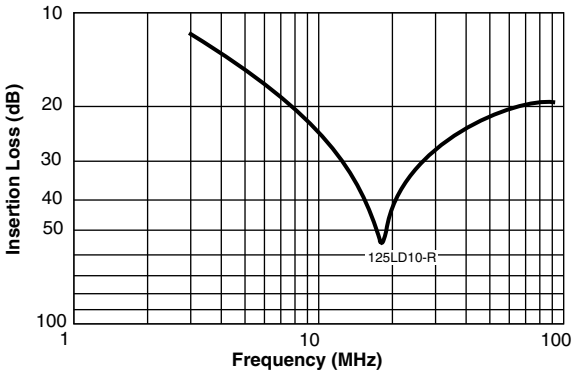
LEAKAGE CURRENT VS. VOLTAGE (Typical)

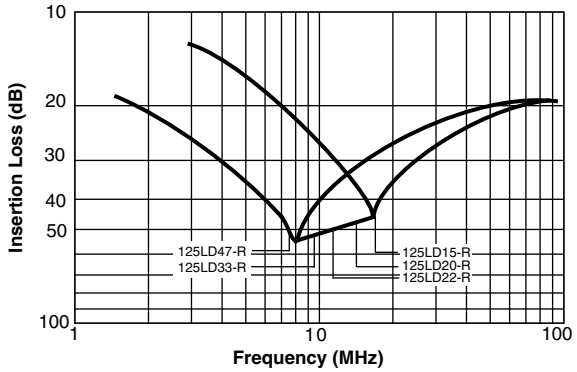


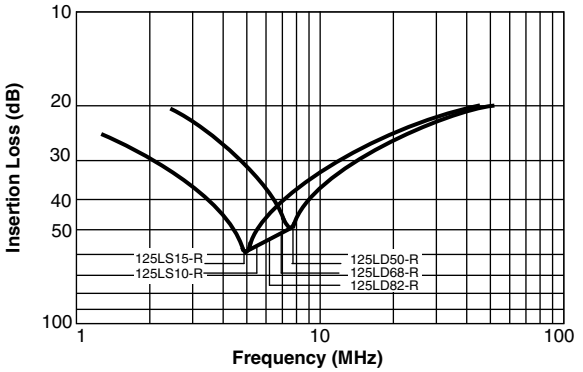


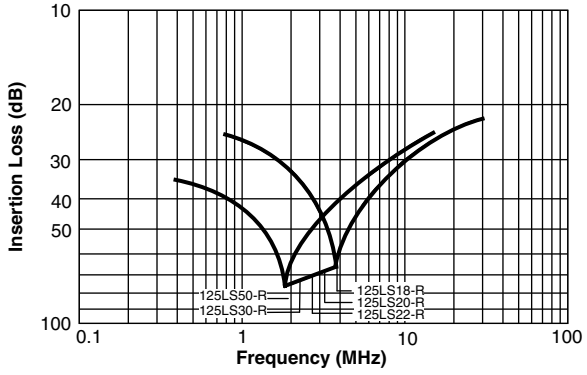


INSERTION LOSS VS. FREQUENCY (Typical)









APPROVALS

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

CB Certificate

Y4-capacitor: CB test certificate:	CA/13650/CSA	1 nF to 50 nF	125 V_{AC}	
X1-capacitor: CB test certificate:	CA/13650/CSA	1 nF to 50 nF	400 V_{AC}	

VDE

Y4-capacitor: VDE marks approval:	40003976	1 nF to 50 nF	125 V_{AC}	
X1-capacitor: VDE marks approval:	40003976	1 nF to 50 nF	400 V_{AC}	

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

Underwriters Laboratories Inc.

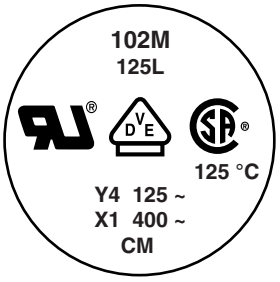
Y4-capacitor: UL test certificate:	E99264	1 nF to 50 nF	125 V_{AC}	
X1-capacitor: UL test certificate:	E99264	1 nF to 50 nF	400 V_{AC}	

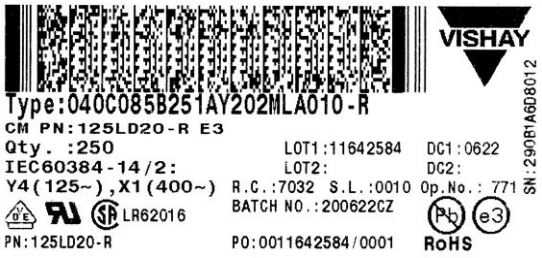
UL 60384-14, CSA E60384-1:03, CSA E60384-14:09

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

MARKING

Sample





RELATED DOCUMENTS

General Information	www.vishay.com/doc?23140
CB Test Certificate	www.vishay.com/doc?22234
VDE Marks Approval	www.vishay.com/doc?22235
UL Test Certificate	www.vishay.com/doc?22236

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.