

AC Line Rated Ceramic Disc Capacitors

Class X1, 400 V_{AC} / Class Y4, 125 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, Y4 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 0.050 μ F

RATED VOLTAGE

IEC 60384-14:

- 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)

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 Ω F

TOLERANCE ON CAPACITANCE

 $\pm 20\%$

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

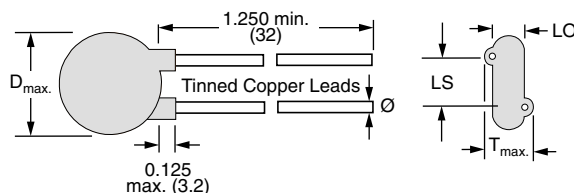
Y5V (Class 2)

CLIMATIC CATEGORY ACC. TO EN 60068-1

25/125/21

OPERATING TEMPERATURE RANGE

-30 °C to +125 °C

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

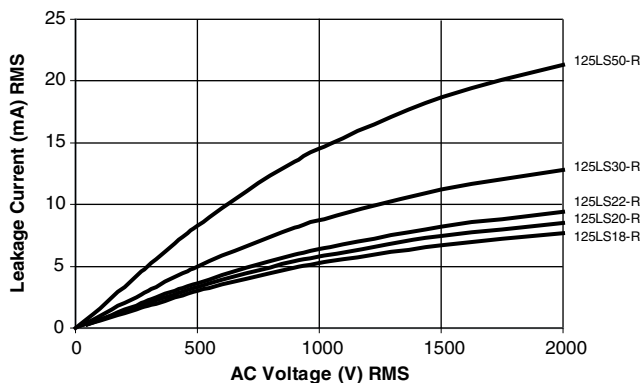
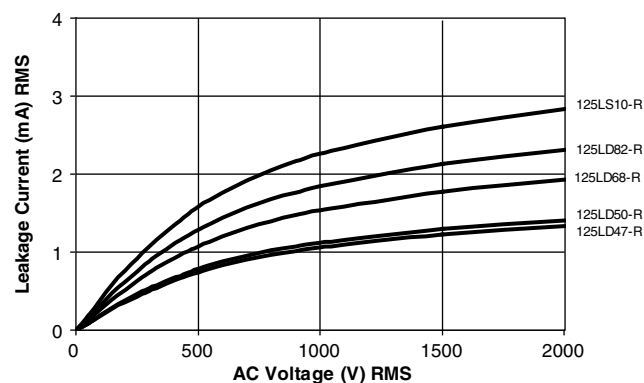
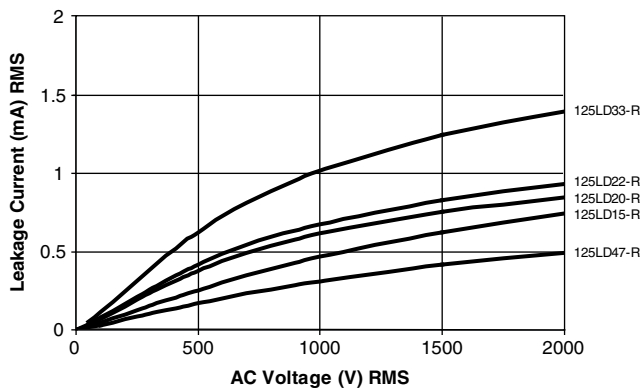
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

TAPE AND REEL OPTIONS

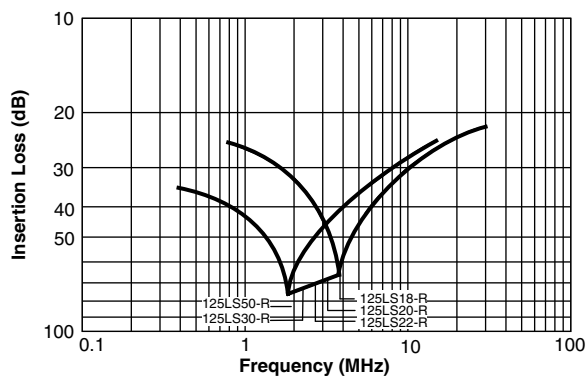
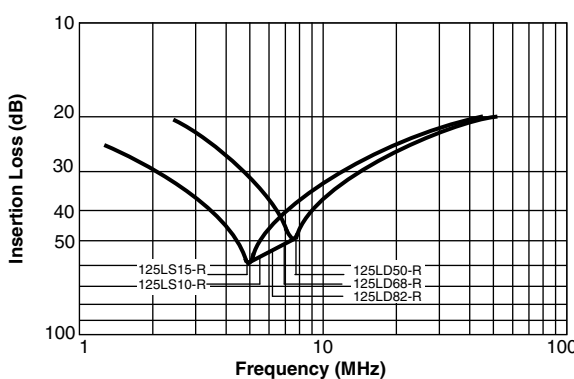
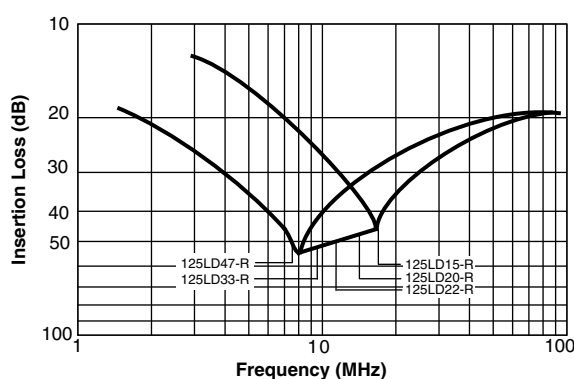
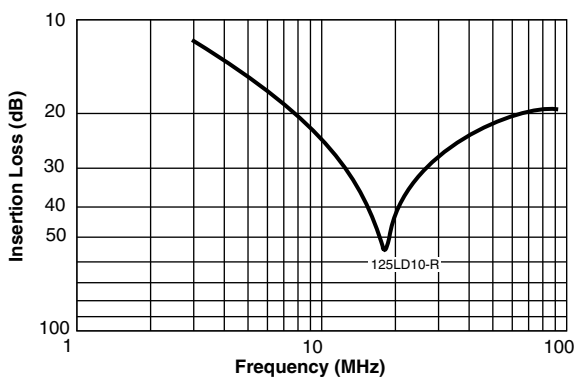
Part number codes and specifications for tape and reel packaging are found in the general information document - find web-link below.



LEAKAGE CURRENT VS. VOLTAGE (Typical)



INSERTION LOSS VS. FREQUENCY (Typical)



**APPROVALS**

IEC 60384-14 - 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 - 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}

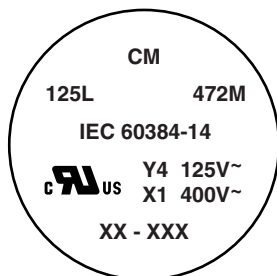


UL 60384-14, CSA E60384-1, CSA E60384-14

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

MARKING

Sample



PN:125LD68-R
Cap.:6800PF ± 20%
Ur.:Y4(125~),X1(400~)
Qty.:250
IEC 60384-14:2013:

LOT1:34810157 DC1:1949
LOT2: DC2:
BATCH NO.:201949CZ
R.C.:7032 S.L.:0010

PO:0034810157/0001

SN:29213292D006

**Notes**

- Marking IEC 60384-14 does not apply for $\varnothing \leq 9$ 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?22234
VDE Marks Approval	www.vishay.com/doc?22235
UL Test Certificate	www.vishay.com/doc?22236



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