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	250	400
Min. Capacitance (pF)	1000		
Max. Capacitance (pF)	50 000		
Mounting	Through hole		

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

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
  Canadian standards association - CSA 22.2
  European EN132400 to IEC 60384-14 2nd edition
- Complete range of capacitance values
- Radial leads
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

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 0.050 µF

RATED VOLTAGE

IEC 60384-14.2:	(Y4): 125 V_{AC}, 50 Hz
IEC 60384-14.2:	(X1): 400 V_{AC}, 50 Hz
UL 1414:	250 V_{AC}, 60 Hz
CSA 22.2 No.1:	125 V_{AC}/250 V_{AC}, 60 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)

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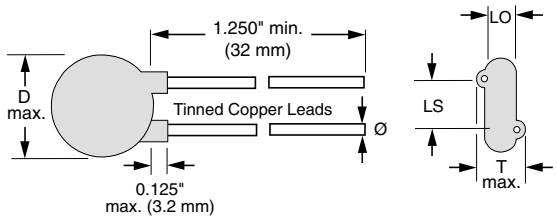
DIMENSIONS in inches (millimeters)



LO' = 0.132" (3.4 mm) typ.

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)	ORDERING CODE
				AWG	INCH (mm)		
Y5V							
1000	± 20 %	0.330 (8.4)	0.195 (5.0)	20	0.032 (0.81)	0.250 (6.4)	125LD10-R
1500		0.330 (8.4)	0.195 (5.0)				125LD15-R
2000		0.330 (8.4)	0.188 (4.8)				125LD20-R
2200		0.330 (8.4)	0.182 (4.7)				125LD22-R
3300		0.365 (9.3)	0.195 (5.0)				125LD33-R
4700		0.400 (10.2)	0.185 (4.7)				125LD47-R
5000		0.430 (11.0)	0.195 (5.0)			0.375 (9.5)	125LD50-R
6800		0.490 (12.5)	0.198 (5.1)				125LD68-R
8200		0.530 (13.5)	0.193 (5.0)				125LD82-R
0.010 µF		0.560 (14.3)	0.195 (5.0)				125LS10-R
0.015 µF		0.720 (18.3)	0.205 (5.3)				125LS15-R
0.018 µF		0.790 (20.1)	0.205 (5.3)				125LS18-R
0.020 µF		0.720 (18.3)	0.250 (6.4)	22	0.025 (0.64)		125LS20-R
0.022 µF		0.790 (20.1)	0.192 (4.9)	20	0.032 (0.81)		125LS22-R
0.030 µF		0.720 (18.3)	0.240 (6.1)	22	0.025 (0.64)		125LS30-R
0.050 µF		0.925 (23.5)	0.275 (7.0)	22	0.025 (0.64)		125LS50-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)

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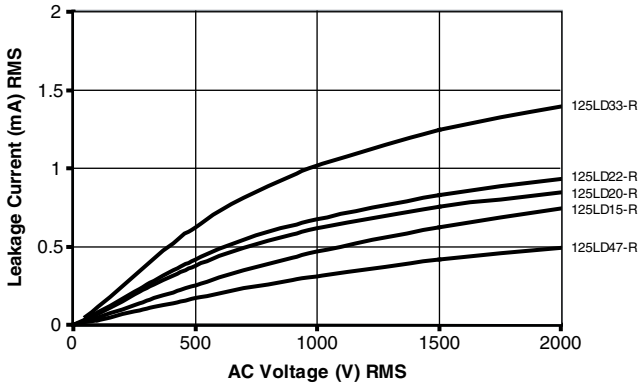
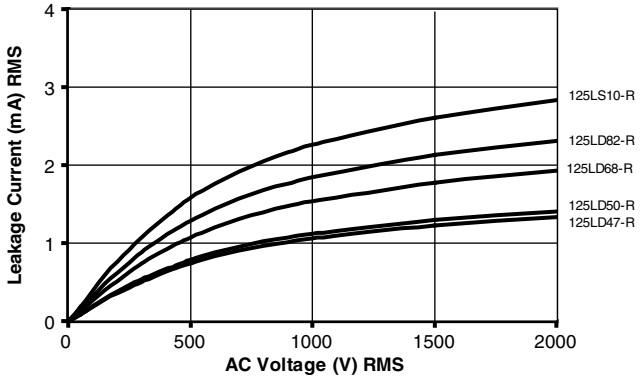
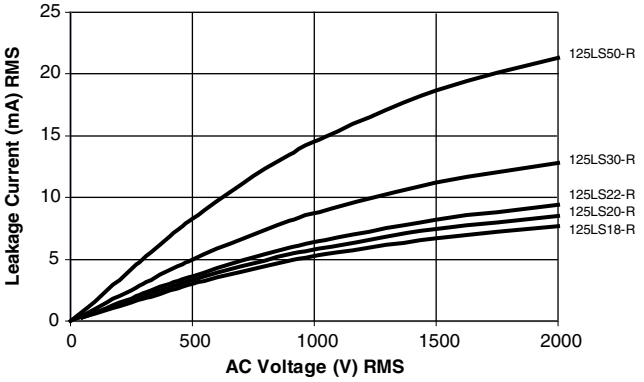
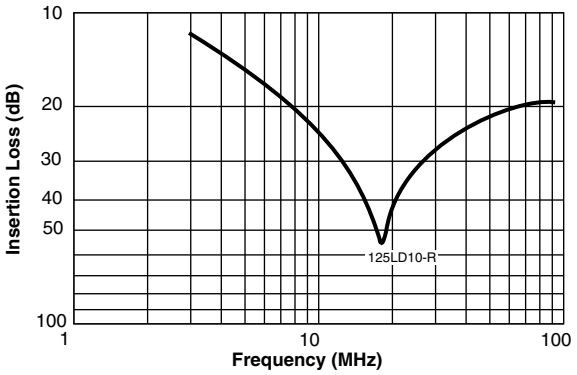
LEAKAGE CURRENT VS. VOLTAGE (TYPICAL)

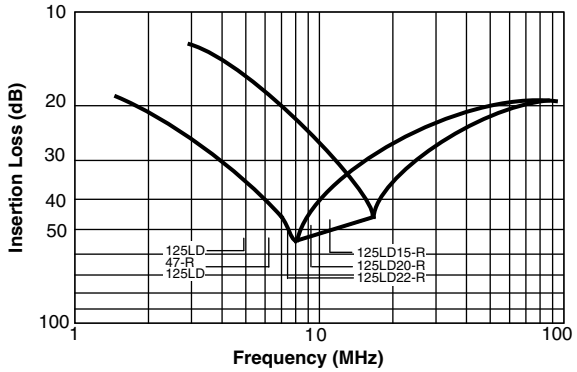


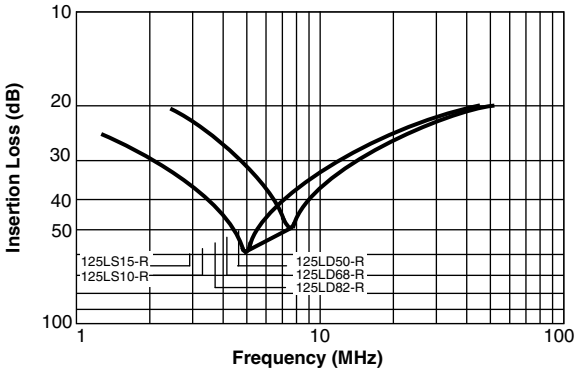


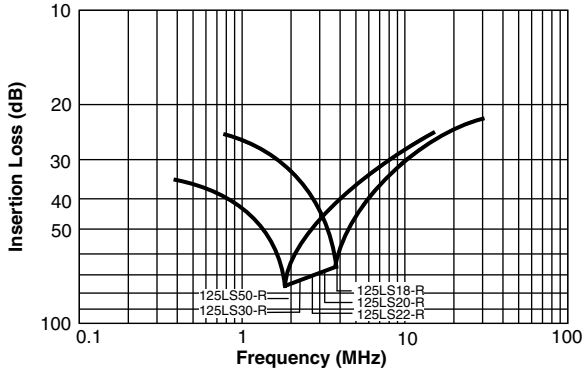


INSERTION LOSS VS. FREQUENCY (TYPICAL)









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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 1-19447	1000 pF to 0.05 µF	400 V_{AC}	
Y4 Capacitor: CB-Test Certificate:	DE 1-19447	1000 pF to 0.05 µF	125 V_{AC}	
UNDERWRITERS LABORATORIES INC.				
UL 1414	Line-by-pass component Agency File/License E99264	1000 pF to 0.05 µF	250 V_{AC}	
CANADIAN STANDARDS ASSOCIATION				
CSA C22.2 No. 1	Isolation component Agency File/License LR 62016	1000 pF to 0.05 µF	250 V_{AC}	

Notes

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.

IEC 60384-14 Subclass Y Capacitors:

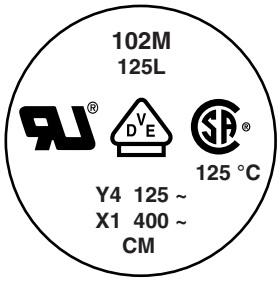
- A capacitor of a type suitable for use in situations where failure of the capacitor could lead to danger of electric shock.
- Class Y capacitors are divided into subclasses based on type of insulation bridged and voltage ranges.
- For definitions of basic, supplementary, double and reinforced insulation,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

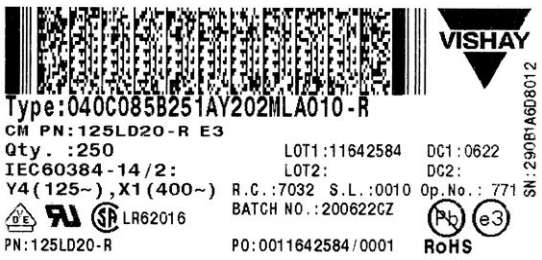
IEC 60384-14 Subclass X Capacitors:

- 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





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