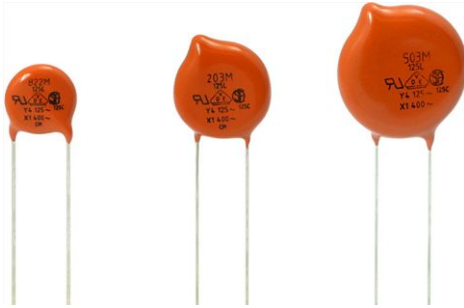


## AC Line Rated Ceramic Disc Capacitors Class X1, 400 V<sub>AC</sub> / Class Y4, 125 V<sub>AC</sub>



QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Ceramic Class	2
Ceramic Dielectric	Y5V
Voltage (V <sub>AC</sub> )	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 3<sup>rd</sup> 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](http://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<sub>AC</sub>, 50 Hz
- Y4:            125 V<sub>AC</sub>, 50 Hz

### DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2000 V<sub>AC</sub>, 50 Hz, 2 s

As repeated test admissible only once with:

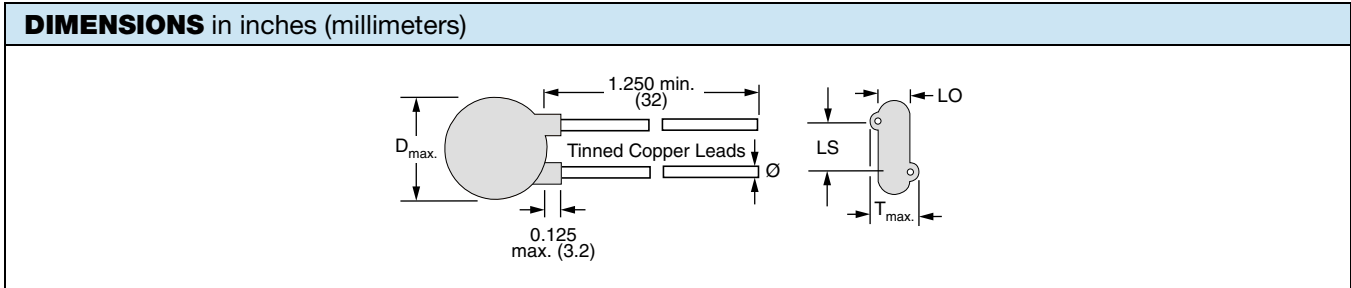
1800 V<sub>AC</sub>, 50 Hz, 2 s

Random sampling test (destructive test):

2000 V<sub>AC</sub>, 50 Hz, 60 s

### DIELECTRIC STRENGTH OF BODY INSULATION

2300 V<sub>AC</sub>, 50 Hz, 60 s (destructive test)



ORDERING INFORMATION, CERAMIC X1 / Y4 CAPACITORS 125L								
C (pF)	TOL. (%)	D <sub>max.</sub> DIAMETER INCH (mm)	T <sub>max.</sub> 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)			0.094 (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)			0.087 (2.2)	125LS20-R	
0.022 μF		0.790 (20.1)	0.192 (4.9)			0.094 (2.4)	125LS22-R	
0.030 μF		0.720 (18.3)	0.240 (6.1)			0.087 (2.2)	125LS30-R	
0.050 μF		0.925 (23.5)	0.275 (7.0)			0.087 (2.2)	125LS50-R	

**Notes**

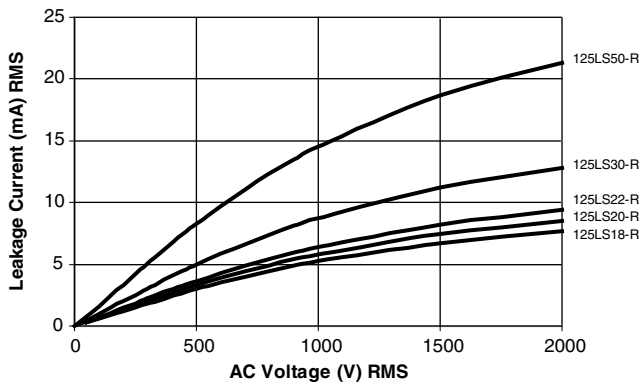
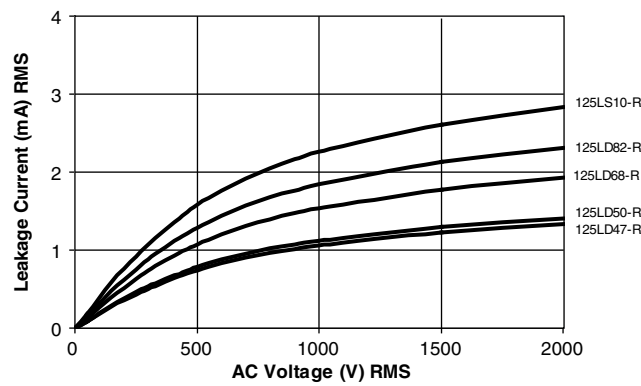
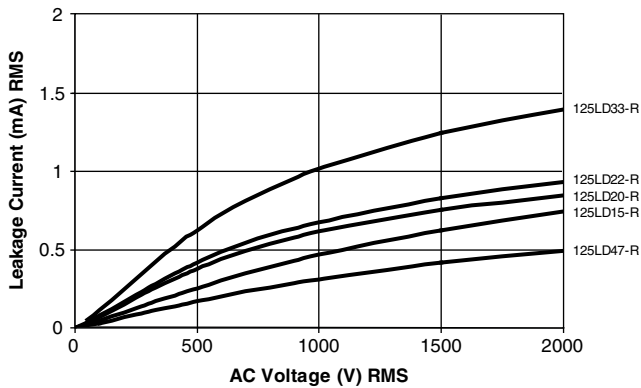
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

**TAPE AND REEL OPTIONS**

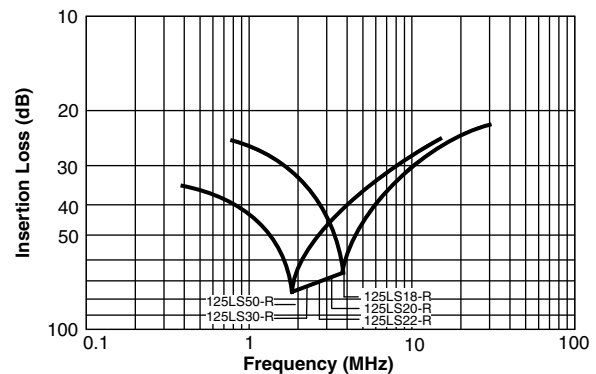
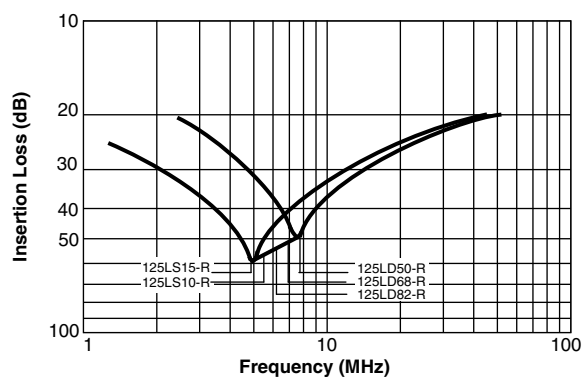
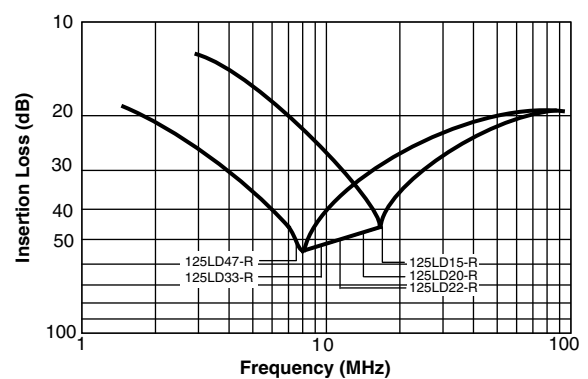
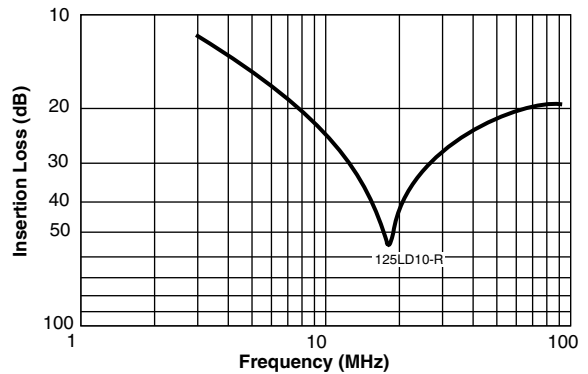
Part number codes and specifications for tape and reel packaging are found in the general information document - find web-link below.



### 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.				
<b>CB Certificate</b>				
Y4-capacitor: CB test certificate:	CA/13650/CSA	1 nF to 50 nF	125 V <sub>AC</sub>	
X1-capacitor: CB test certificate:	CA/13650/CSA	1 nF to 50 nF	400 V <sub>AC</sub>	
<b>VDE</b>				
Y4-capacitor: VDE marks approval:	40003976	1 nF to 50 nF	125 V <sub>AC</sub>	
X1-capacitor: VDE marks approval:	40003976	1 nF to 50 nF	400 V <sub>AC</sub>	
DIN EN 60384-14 VDE 0565-1-1:2006-04 - Safety tests				
<b>Underwriters Laboratories Inc.</b>				
Y4-capacitor: UL test certificate:	E99264	1 nF to 50 nF	125 V <sub>AC</sub>	
X1-capacitor: UL test certificate:	E99264	1 nF to 50 nF	400 V <sub>AC</sub>	
UL 60384-14, CSA E60384-1:03, CSA E60384-14:09				
Fixed capacitors for electromagnetic interference suppression and connection to the supply mains.				

MARKING	
<p>Sample</p>	<p>Type: 040C085B251AY202MLA010-R  CM PN: 125LD20-R E3      LOT1: 11642584      DC1: 0622  Qty. : 250      LOT2:      DC2:  IEC60384-14 / 2:      R.C.: 7032 S.L.: 0010      Op.No.: 771  Y4 (125~), X1 (400~)      BATCH NO.: 200622CZ   LR62016            RoHS  PN: 125LD20-R      PO: 0011642584/0001</p>

RELATED DOCUMENTS	
General Information	<a href="http://www.vishay.com/doc?23140">www.vishay.com/doc?23140</a>
CB Test Certificate	<a href="http://www.vishay.com/doc?22234">www.vishay.com/doc?22234</a>
VDE Marks Approval	<a href="http://www.vishay.com/doc?22235">www.vishay.com/doc?22235</a>
UL Test Certificate	<a href="http://www.vishay.com/doc?22236">www.vishay.com/doc?22236</a>



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