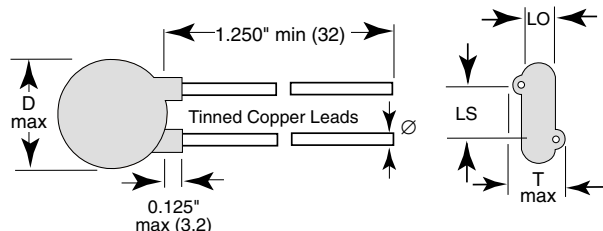


AC Line Rated Disc Capacitors Class X1, 400 VAC/Class Y1, 500 VAC



LO' = 0.158" (4.0) typ.

INSULATION RESISTANCE:

min. 1000 Ω F

TOLERANCE ON CAPACITANCE:

$\pm 10\%$; $\pm 20\%$

DISSIPATION FACTOR:

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC:

C0G, U2J, P3K, R3L (Class 1)
X7R, Y5U (Class 2)

CATEGORY TEMPERATURE RANGE:

(- 25 to + 125) °C

OPERATING TEMPERATURE RANGE:

(- 30 to + 125) °C

CLIMATIC CATEGORY ACC. TO EN60068-1:

25/125/21

FEATURES

- Worldwide Safety Agency Recognition
Underwriters Laboratories - UL1414 & UL1283
Canadian Standards Association - CSA 22.2
European EN132400 to IEC 60384-14
Second Edition
- Complete Range of Capacitance Values



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). The capacitors may be supplied with radial kinked or straight leads having a lead spacing of 0.375" (9.5 mm). The standard tolerances are $\pm 10\%$ or $\pm 20\%$. Coating is made of flame retardant epoxy resin in accordance with "UL94V-0".

CAPACITANCE RANGE:

10 pF to 0.01 μ F

RATED VOLTAGE U_R :

IEC 60384-14.2	(Y1): 500 VAC, 50 Hz
IEC 60384-14.2	(X1): 400 VAC, 50 Hz
UL 1414:	250 VAC, 60 Hz
UL 1283:	600 VAC, 60 Hz
CSA 22.2:	250 VAC, 60 Hz

DIELECTRIC STRENGTH BETWEEN LEADS:

Component test:
4000 VAC, 50 Hz, 2 seconds
As repeated test admissible only once with:
3600 VAC, 50 Hz, 2 seconds
Random sampling test (destructive test):
4000 VAC, 50 Hz, 60 seconds

DIELECTRIC STRENGTH OF BODY INSULATION:

4000 VAC, 50 Hz, 60 seconds (destructive test)

440L Series

Vishay Cera-Mite

AC Line Rated Disc Capacitors
Class X1, 400 VAC/Class Y1, 500 VAC



ORDERING INFORMATION, CERAMIC X1/Y1 CAPACITORS 440L							
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	WIRE SIZE		LS LEAD SPACE INCH (mm)	ORDERING CODE
				AWG	INCH (mm)		
C0G							
10	± 10 %	0.330 (8.4)	0.195 (5.0)	20	0.032 (0.81)	0.375 (9.5)	440LQ10-R
U2J							
15	± 10 %	0.330 (8.4)	0.210 (5.3)	20	0.032 (0.81)	0.375 (9.5)	440LQ15-R
P3K							
22	± 10 %	0.330 (8.4)	0.190 (4.8)	20	0.032 (0.81)	0.375 (9.5)	440LQ22-R
R3L							
33	± 10 %	0.330 (8.4)	0.200 (5.1)	20	0.032 (0.81)	0.375 (9.5)	440LQ33-R
47	± 10 %	0.330 (8.4)	0.180 (4.6)	20	0.032 (0.81)	0.375 (9.5)	440LQ47-R
X7R							
68	± 10 %	0.330 (8.4)	0.220 (5.6)	20	0.032 (0.81)	0.375 (9.5)	440LQ68-R
100			0.220 (5.6)				440LT10-R
150			0.235 (6.0)				440LT15-R
220			0.235 (6.0)				440LT22-R
330			0.225 (5.7)				440LT33-R
Y5U							
470	± 20 %	0.330 (8.4)	0.230 (5.8)	20	0.032 (0.81)	0.375 (9.5)	440LT47-R
560		0.330 (8.4)	0.230 (5.8)				440LT56-R
680		0.330 (8.4)	0.235 (6.0)				440LT68-R
1000		0.365 (9.3)	0.220 (5.6)				440LD10-R
1500		0.365 (9.3)	0.220 (5.6)				440LD15-R
2000		0.400 (10.2)	0.220 (5.6)				440LD20-R
2200		0.430 (10.9)	0.225 (5.7)				440LD22-R
2700		0.460 (11.7)	0.225 (5.7)				440LD27-R
2800		0.460 (11.7)	0.220 (5.6)				440LD28-R
3000		0.490 (12.4)	0.225 (5.7)				440LD30-R
3200		0.490 (12.4)	0.220 (5.6)				440LD32-R
3300		0.490 (10.9)	0.215 (5.5)				440LD33-R
3900		0.530 (13.5)	0.220 (5.6)				440LD39-R
4000		0.530 (13.5)	0.220 (5.6)				440LD40-R
4700		0.620 (15.7)	0.230 (5.8)				440LD47-R
5000		0.620 (15.7)	0.225 (5.7)				440LD50-R
5500		0.680 (17.3)	0.230 (5.8)				440LD55-R
5600		0.680 (17.3)	0.230 (5.8)				440LD56-R
6800		0.720 (18.3)	0.235 (6.0)				440LD68-R
8000		0.720 (18.3)	0.220 (5.6)				440LD80-R
9000		0.790 (20.1)	0.225 (5.7)				440LD90-R
0.01 µF			0.850 (21.6)				0.230 (5.8)

Note:

1. Alternate Lead Spacings are available bulk or tape & reel on request.
2. European Required Minimum Lead Clearance (Prevents Use of Inside Crimp) 0.315" (8 mm)

TAPE & REEL OPTIONS

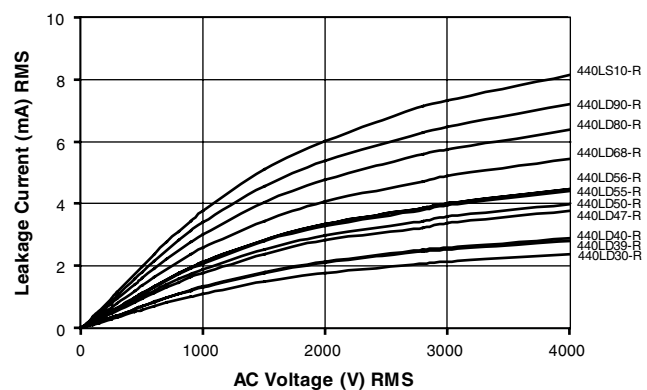
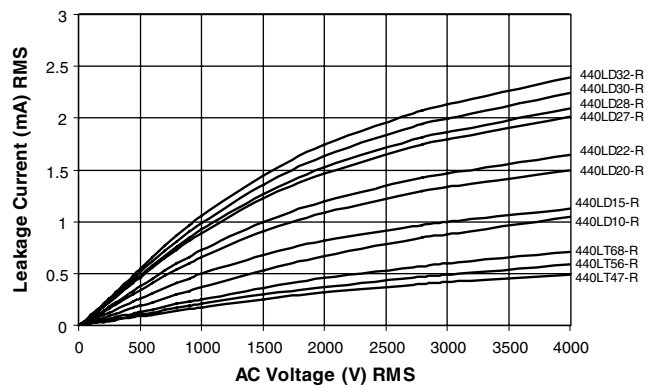
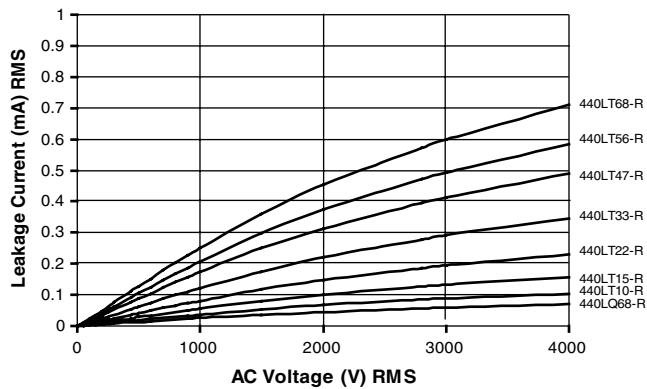
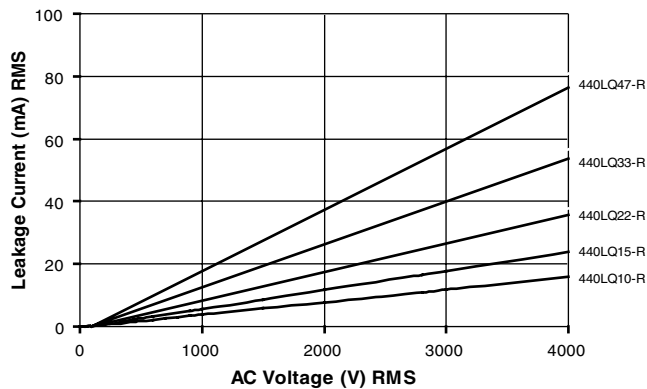
To specify T & R, add two letter suffix to the ordering code (Details of the packaging code see general section of the catalog)



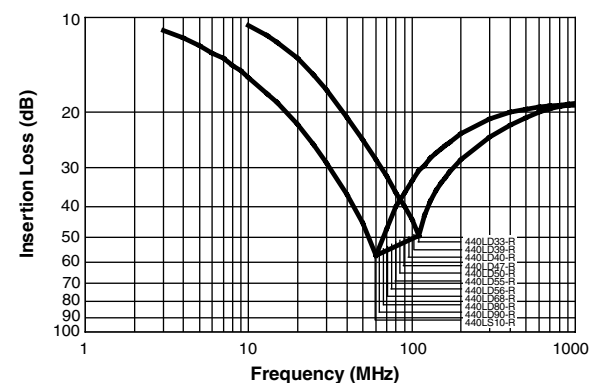
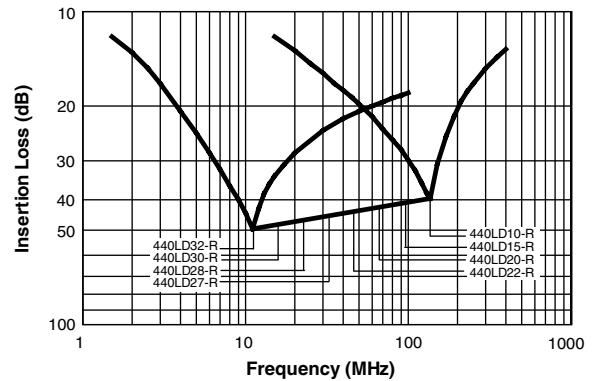
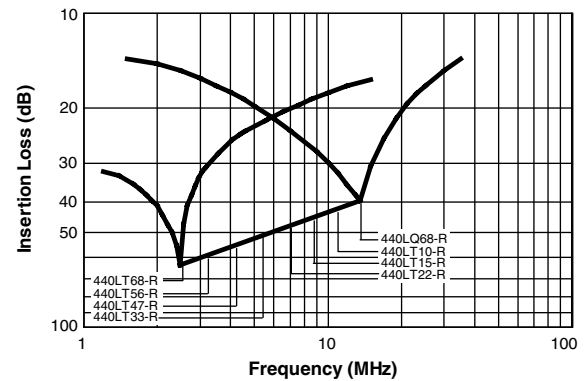
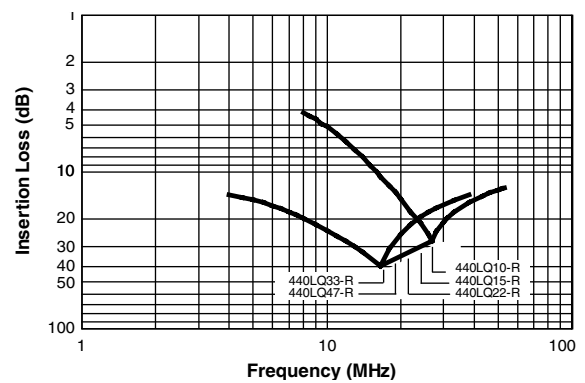
AC Line Rated Disc Capacitors Class X1, 400 VAC/Class Y1, 500 VAC

440L Series Vishay Cera-Mite

LEAKAGE CURRENT VS. VOLTAGE (TYPICAL)



INSERTION LOSS VS. FREQUENCY (TYPICAL)



**APPROVALS**

IEC 60384 - 14/2nd Issue (1993) incl. Am. 1 (1995) - Safety Tests
EN 132 400 (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	

Y1- Capacitor: CB-Test Certificate: DE 1-19452

10 pF... 0.01 μ F

500 V_{AC}



X1- Capacitor: CB-Test Certificate: DE 1-19452

10 pF... 0.01 μ F

400 V_{AC}

UNDERWRITERS LABORATORIES

UL 1414 Across-the-line, Antenna-coupling and Line-by-pass component. 10 pF... 0.01 μ F
Agency File/License E99264 V2S2

250 V_{AC}



UL 1283 EMI Filters
Agency File/License E128046 V1S2

10 pF... 0.01 μ F

600 V_{AC}

CANADIAN STANDARDS ASSOCIATION

CSA C22.2 Across-the-line, Isolation capacitor
No. 1-98 Agency File/License LR 62016-12

10 pF... 0.01 μ F

250 V_{AC}



No. 1-94 Across-the-line, Line to ground, Isolation capacitor
Agency File/License LR 62016-1

100 pF... 0.01 μ F

250 V_{AC}

Note 1

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.

Note 2

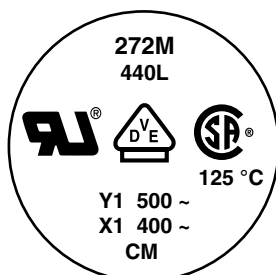
IEC 60384-14 Subclass Y Capacitors:

- 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 sub- classes 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.

Note 3

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



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