

AC Line Rated Ceramic Disc Capacitors Class X2, 400 V_{AC}



FEATURES

- Complying with IEC 60384-14
- High reliability
- Radial leads
- Singlelayer AC disc safety capacitors
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

APPLICATIONS

- X2 according to IEC 60384-14
- Across-the-line
- RFI filtering

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 0.025" (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."

QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Ceramic Class	2
Ceramic Dielectric	Y5V
Voltage (V _{AC})	400
Min. Capacitance (pF)	9000
Max. Capacitance (pF)	100 000
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

CATEGORY TEMPERATURE RANGE

-25 °C to +125 °C

CLIMATIC CATEGORY ACC. TO EN 60068-1

25 / 125 / 21

OPERATING TEMPERATURE RANGE

-30 °C to +125 °C

CAPACITANCE RANGE

9 nF to 0.1 μ F

RATED VOLTAGE

IEC 60384-14:

X2: 400 V_{AC}, 50 Hz

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

1250 V_{AC}, 50 Hz, 2 s

As repeated test admissible only once with:

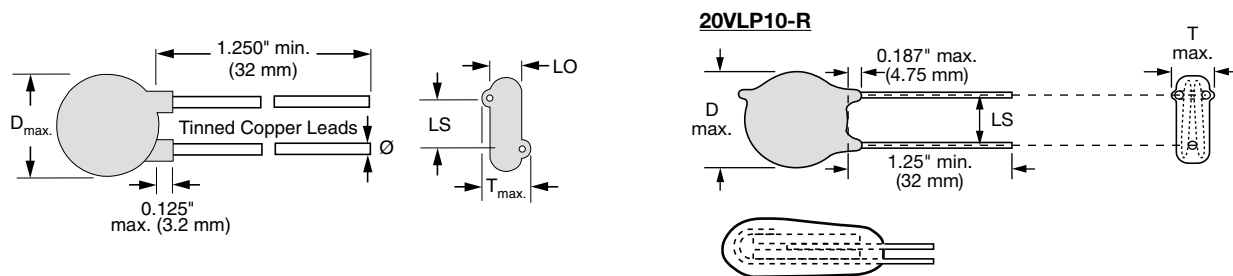
1080 V_{AC}, 50 Hz, 2 s

Random sampling test (destructive test):

1250 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 X2 CAPACITORS 20VL

C (μ F)	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)			
0.009	± 20	0.530 (13.5)	0.150 (3.8)	22	0.025 (0.64)	0.375 (9.5)	0.055 (1.4)	20VLD90-R
0.010	± 20	0.620 (15.7)	0.150 (3.8)				0.063 (1.6)	20VLS10-R
0.020	± 20	0.720 (18.3)	0.150 (3.8)				0.055 (1.4)	20VLS20-R
0.100	± 20	0.950 (24.1)	0.230 (5.8)				0.067 (1.7)	20VLP10-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.

APPROVALS

IEC 60384-14 - Safety tests

This approval together with CB test certificate substitutes all national approvals.

CB Certificate

X2-capacitor: CB test certificate:

DE 1 - 19450

9 nF to 0.1 μ F

400 V_{AC}


VDE

X2-capacitor: VDE marks approval:

40003982

9 nF to 0.1 μ F

400 V_{AC}

DIN EN 60384-14 VDE 0565-1-1 - Safety tests


Underwriters Laboratories Inc.

X2-capacitor: UL test certificate:

E99264

9 nF to 0.1 μ F

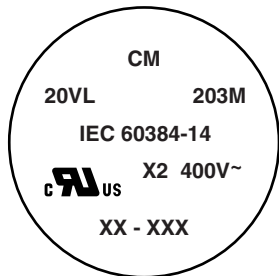
400 V_{AC}

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



MARKING

Sample


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?22247
VDE Marks Approval	www.vishay.com/doc?22246
UL Test Certificate	www.vishay.com/doc?22245



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