

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



QUICK REFERENCE DATA		
DESCRIPTION	VALUE	
Ceramic Class	2	
Ceramic Dielectric	Y5V	Z5U
Voltage (V _{AC})	400	400
Min. Capacitance (pF)	9000	10 000
Max. Capacitance (pF)	100 000	10 000
Mounting	Radial	

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

Y5V

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

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
- EMI / RFI suppression

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 ± 20 %. Coating is made of flame retardant epoxy resin in accordance with "UL 94 V-0."

CAPACITANCE RANGE

9 nF to 0.1 μF

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:

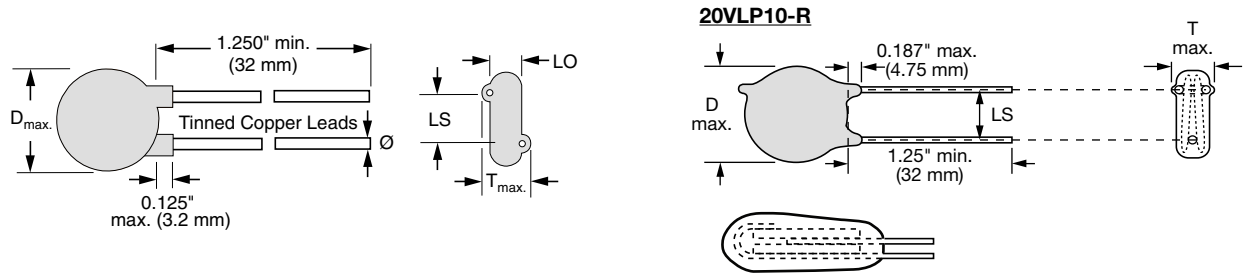
1080 V_{AC}, 50 Hz, 2 s

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)			
Y5V								
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
Z5U								
0.010	± 20	0.530 (13.5)	0.160 (4.1)	22	0.025 (0.64)	0.250 (6.4)	0.067 (1.7)	20VLS10-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: DE1-63496 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	
<p>Sample</p> <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; margin: 20px auto; text-align: center;"> <p>CM</p> <p>20VL 203M</p> <p>IEC 60384-14</p> <p> X2 400V~</p> <p>XX - XXX</p> </div>	<div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p>PN:20VLP10-R Cap.:100NF ±20% Ur.:X2(400~) Qty.:125 IEC 60384-14:2013: PO:0034761587/0001</p> </div> <div style="width: 45%;"> <p>LOT1:34761587 DC1:1949 LOT2: DC2: BATCH NO.:201949CZ R.C.:7032 S.L.:0010</p> <p>SN:292126873015</p> </div> </div> <div style="text-align: right; margin-top: 10px;"> </div>

Notes

- Marking IEC 60384-14 does not apply for Ø ≤ 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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