

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


**RoHS
COMPLIANT**
FEATURES

- Worldwide safety agency recognition
Underwriters Laboratories UL 1283
Canadian Standards Association - CSA 22.2
European EN132400 to IEC 60384-14 second edition
- Complete range of capacitance values
- Radial leads
- Compliant to RoHS Directive 2002/95/EC

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 0.025" (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 | Z5U |
| Voltage (V _{AC}) | 250, 400 | 250, 400 |
| Min. Capacitance (pF) | 9000 | 10 000 |
| Max. Capacitance (pF) | 100 000 | 10 000 |
| Mounting | Through hole | |

INSULATION RESISTANCE

 Min. 1000 Ω F

TOLERANCE ON CAPACITANCE
 $\pm 20\%$
DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

Y5V, Z5U (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

CAPACITANCE RANGE

 9 nF to 0.1 μ F

RATED VOLTAGE

 IEC 60384-14.12: (X2): 400 V_{AC}, 50 Hz

 UL 1238: 250 V_{AC}, 60 Hz

 CSA 22.2 No.8: 250 V_{AC}, 60 Hz

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

 1250 V_{AC}, 50 Hz, 2 s

As repeated test admissible only once with:

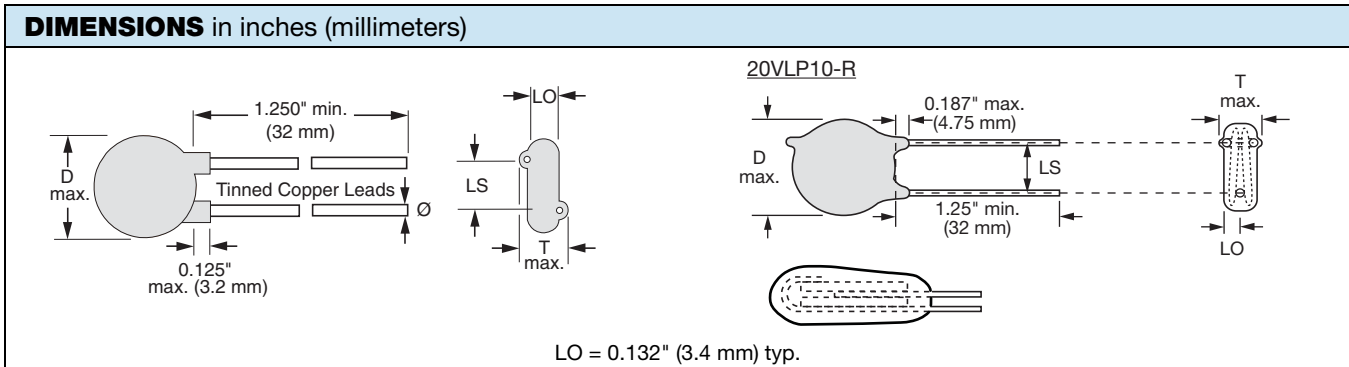
 1080 V_{AC}, 50 Hz, 2 s

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)



| ORDERING INFORMATION, CERAMIC X2 CAPACITORS 20VL | | | | | | | |
|--|-------------|----------------------------|-----------------------------|-----------|--------------|-------------------------------|--------------------------|
| C (μ F) | TOL. (%) | D DIAMETER INCH (mm) | T THICKNESS INCH (mm) | WIRE SIZE | | LS LEAD SPACE INCH (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) | 20VLD90-R |
| 0.010 | ± 20 | 0.620 (15.7) | 0.150 (3.8) | | | | 20VLS10-R |
| 0.020 | ± 20 | 0.720 (18.3) | 0.150 (3.8) | | | | 20VLS20-R |
| 0.100 | ± 20 | 0.940 (23.9) | 0.240 (6.1) | | | | 20VLP10-R ⁽¹⁾ |
| Z5U | | | | | | | |
| 0.010 | ± 20 | 0.530 (13.5) | 0.160 (4.1) | 22 | 0.025 (0.64) | 0.250 (6.4) | 20VLS10-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)
- ⁽¹⁾ 20VLP10-R not available with CSA 22.2 no. 8 recognition

TAPE AND REEL OPTIONS

- To specify tape and reel, add two letter suffix to the ordering code (details of the packaging code see general section of the catalog).

| 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 | |
| X2 Capacitor: CB-Test Certificate: | | DE 1-19450 | 9000 pF to 0.1 μ F | 400 V _{AC} | | |
| UNDERWRITERS LABORATORIES INC. | | | | | | |
| UL 1238 | EMI filters Agency File/ License | E128046 V1S1 | 9000 pF to 0.1 μ F | 250 V _{AC} | | |
| CANADIAN STANDARDS ASSOCIATION | | | | | | |
| CSA C22.8 | EMI filters Agency File/ License | LR 62016-3 | 9000 pF to 0.020 μ F | 250 V _{AC} | | |

Note

IEC 60384-14 subclass X capacitors:

- A capacitor of a type suitable for use in situations where failure of the capacitor would not lead to danger of electric shock.
- Class X capacitors are divided into sub-classes according to the peak impulse test voltage superimposed on the main voltage.



MARKING

Sample



Type: 055C140A251BY103ZLA203-R

| | | | |
|-----------------------------|-----------------------|---------------------|------------------|
| CM PN: 20VLSS10-R E3 | LOT1: 11642525 | DC1: 0622 | SN: 29081A69D001 |
| Qty.: 250 | LOT2: | DC2: | |
| IEC60384-14/2: | R.C.: 7032 S.L.: 0010 | Op.No.: 771 | |
| X2 (400~) | BATCH NO.: 200622CZ | Pb e3 | |
| UL SF LR62016 | PN: 20VLSS10-R | PO: 0011642525/0001 | |

RoHS



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- Техническая поддержка проекта;
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