

AC Line Rated Disc Capacitors
Class X1, 400 VAC/Class Y2, 250 VAC



LO' = 0.132" (3.4 mm) typ.

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

Y5S (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

FEATURES

- Worldwide safety agency recognition
Underwriters laboratories - UL 1414 and 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 0.032" (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 8.0 nF

RATED VOLTAGE

| | |
|-----------------|----------------------|
| IEC 60384-14.2: | (Y2): 250 VAC, 50 Hz |
| IEC 60384-14.2: | (X1): 400 VAC, 50 Hz |
| UL 1414: | 250 VAC, 60 Hz |
| UL 1283: | 250 VAC, 60 Hz |
| CSA 22.2 No.1: | 250 VAC, 60 Hz |
| CSA 22.2 No.8: | 400 VAC, 60 Hz |

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:
2500 VAC, 50 Hz, 2 s
As repeated test admissible only once with:
2250 VAC, 50 Hz, 2 s
Random sampling test (destructive test):
2500 VAC, 50 Hz, 60 s

DIELECTRIC STRENGTH OF BODY INSULATION

2300 VAC, 50 Hz, 60 s (destructive test)

ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 25Y

| C (pF) | TOL. (%) | D DIAMETER INCH (mm) | T THICKNESS INCH (mm) | WIRE SIZE | | LS LEAD SPACE INCH (mm) | ORDERING CODE |
|---|-------------|----------------------------|-----------------------------|-----------|--------------|-------------------------------|------------------|
| | | | | AWG | INCH (mm) | | |
| Y5S TEMPERATURE STABLE ($\pm 22\%$, - 30 °C to + 85 °C) | | | | | | | |
| 1000 | $\pm 20\%$ | 0.330 (8.4) | 0.170 (4.3) | 22 | 0.025 (0.64) | 0.250 (6.4) | 25YD10-R |
| 1500 | | 0.400 (10.2) | 0.175 (4.4) | | | | 25YD15-R |
| 2000 | | 0.430 (10.9) | 0.170 (4.3) | | | | 25YD20-R |
| 2200 | | 0.460 (11.7) | 0.170 (4.3) | | | | 25YD22-R |
| 2700 | | 0.490 (12.4) | 0.170 (4.3) | | | | 25YD27-R |
| 2800 | | 0.530 (13.5) | 0.175 (4.4) | | | | 25YD28-R |
| 3000 | | 0.530 (13.5) | 0.175 (4.4) | 25YD30-R | | | |
| 3200 | | 0.560 (14.2) | 0.185 (4.7) | 20 | 0.032 (0.81) | 0.375 (9.5) | 25YD32-R |
| 3300 | | 0.560 (14.2) | 0.185 (4.7) | | | | 25YD33-R |
| 3900 | | 0.620 (15.7) | 0.185 (4.7) | | | | 25YD39-R |
| 4000 | | 0.620 (15.7) | 0.185 (4.7) | | | | 25YD40-R |
| 4700 | | 0.680 (17.3) | 0.185 (4.7) | | | | 25YD47-R |
| 5000 | | 0.680 (17.3) | 0.185 (4.7) | | | | 25YD50-R |
| 5500 | | 0.720 (18.3) | 0.190 (4.7) | 25YD55-R | | | |
| 5600 | | 0.720 (18.3) | 0.190 (4.7) | 25YD56-R | | | |
| 6800 | | 0.790 (20.1) | 0.185 (4.7) | 25YD68-R | | | |
| 8000 | | 0.900 (22.9) | 0.200 (5.1) | 25YD80-R | | | |

Notes

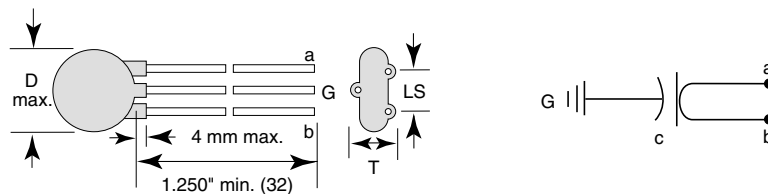
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- European required minimum lead clearance (prevents use of inside crimp) 0.118" (3 mm)

TAPE AND REEL OPTIONS

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

OPTIONAL 3-LEADED STYLE

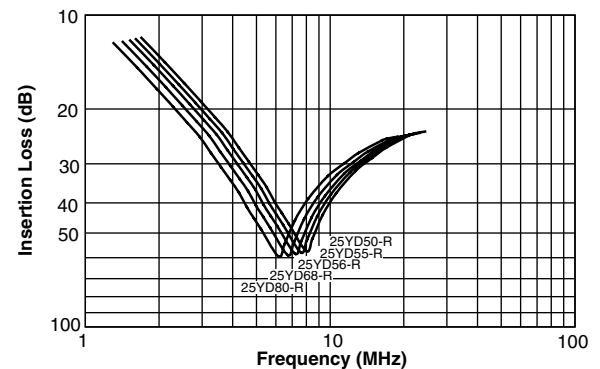
An optional 3-leaded construction is available. It consists of a single capacitor with the two outside leads attached to one electrode, and the center lead attached to the electrode. Used in feed-thru or line-to-ground applications, it allows a short ground lead for enhanced high frequency performance.





LEAKAGE CURRENT VS. VOLTAGE (TYPICAL)

INSERTION LOSS VS. FREQUENCY (TYPICAL)



25Y Series

Vishay Cera-Mite

AC Line Rated Disc Capacitors
Class X1, 400 VAC/Class Y2, 250 VAC



| APPROVALS | | | | | | |
|--|---|-------------|--------------------|-----------|---------------------|----------------|
| IEC 60384 - 14/2 nd 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 | |
| X1 Capacitor: CB-Test Certificate: | DE 1-19449 | | 1000 pF to 8000 pF | | 400 V _{AC} | |
| Y2 Capacitor: CB-Test Certificate: | DE 1-19449 | | 1000 pF to 8000 pF | | 250 V _{AC} | |
| UNDERWRITERS LABORATORIES INC. | | | | | | |
| UL 1414 | Line-by-pass component Agency File/License | E99264 V2S1 | 1000 pF to 8000 pF | | 250 V _{AC} | |
| UL 1283 | EMI Filters Agency File/License | E99264 V2S1 | 1000 pF to 8000 pF | | 250 V _{AC} | |
| CANADIAN STANDARDS ASSOCIATION | | | | | | |
| CSA C22.2 No. 1 | Isolation component Agency File/License | LR 62016-12 | 1000 pF to 8000 pF | | 250 V _{AC} | |
| CSA C22.2 No. 8 | EMI filter Agency File/License | LR 62016-3 | 1000 pF to 8000 pF | | 400 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 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 | |
|---------------|---|
| <p>Sample</p> | <p>VISHAY</p> <p>Type: 041C045A251AY802ML-R CM PN: 25YD80-R E3 Qty.: 125 IEC60384-14/2: Y2 (250~), X1 (400~) R.C.: 7032 S.L.: 0010 BATCH NO.: 200622CZ PN: 25YD80-R</p> <p>LOT1: 11647770 LOT2: R.C.: 7032 S.L.: 0010 BATCH NO.: 200622CZ PO: 0011647770/0001</p> <p>DC1: 0622 DC2: Op.No.: 771</p> <p>SN: 290B1B81A001</p> <p> LR62016 </p> |



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