AC Line Rated Ceramic Disc Capacitors
Class X1, 440 VAC, Class Y2, 250 VAC

FEATURES
• Complying with IEC 60384-14 (edition 4)
• High reliability
• Wide range of capacitance values
• Wide range of different leadstyles
• Singlelayer AC disc safety capacitors
• Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

APPLICATIONS
• X1, Y2 according to IEC 60384-14 (edition 4)
• Line-by-pass

DESIGN
The capacitors consist of ceramic disc both sides of which are silver plated. Connection leads are made of tinned copper having diameters of 0.6 mm.

The capacitors may be supplied with straight or kinked leads having a lead spacing of 5.0 mm or 7.5 mm.

Coating is made of blue colored flame retardant epoxy resin in accordance with UL 94 V-0.

CAPACITANCE RANGE
1.0 nF to 12 nF

TOLERANCE ON CAPACITANCE
± 20 %

RATED VOLTAGE
• X1:  440 VAC, 50 Hz (IEC 60384-14)
  440 VAC, 50 Hz / 60 Hz (US/UL/CSA 60384-14)
• Y2:  250 VAC, 50 Hz (IEC 60384-14)
  250 VAC, 50 Hz / 60 Hz (US/UL/CSA 60384-14)

TEST VOLTAGE
• 2500 VAC, 50 Hz, 2 s  Component test (100 %)
• 1500 VAC, 50 Hz, 60 s  Random sampling test (destructive)
• 2000 VAC, 60 Hz, 60 s  Voltage proof of coating (destructive)

INSULATION RESISTANCE AT 500 VDC
≥ 6000 MΩ (60 s)

DISSIPATION FACTOR
Class 2: max. 2.5 % (1 kHz)
### DIMENSIONS in millimeters

![Image of component dimensions](image)

### TECHNICAL DATA

<table>
<thead>
<tr>
<th>CAPACITANCE C (pF)</th>
<th>CAPACITANCE TOLERANCE</th>
<th>BODY DIAMETER DMAX. (mm)</th>
<th>BODY THICKNESS SMAX. (mm)</th>
<th>LEAD SPACING (1) F (mm) ± 1 mm</th>
<th>LEAD DIAMETER (1) d (mm) ± 0.05 mm</th>
<th>WIDTH (1) V (mm) ± 0.5 mm</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>YSU (2E3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1000</td>
<td>± 20 %</td>
<td>6.5</td>
<td>4.5</td>
<td>5.0</td>
<td>0.6</td>
<td>1.4</td>
<td>WYO102#CM###KR</td>
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<td>1500</td>
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<td>± 20 %</td>
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<td>WYO252#CM###KR</td>
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<td>21.0</td>
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<td>WYO123#CM###KR</td>
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</table>

Note

(1) Standard lead configuration, other lead spacing and diameter available on request

### ORDERING CODE

<table>
<thead>
<tr>
<th>#</th>
<th>7th digit</th>
<th>Capacitance tolerance</th>
<th>± 10 % = K, ± 20 % = M</th>
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</thead>
<tbody>
<tr>
<td>###</td>
<td>10th to 12th digit</td>
<td>Lead configuration</td>
<td>see “General Information”</td>
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</table>

Example

<table>
<thead>
<tr>
<th>Series</th>
<th>Capacitance value</th>
<th>Tolerance code</th>
<th>Voltage code</th>
<th>Lead configuration</th>
<th>Internal code</th>
<th>RoHS compliant</th>
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<tbody>
<tr>
<td>WYO</td>
<td>103</td>
<td>M</td>
<td>CM</td>
<td>CF0</td>
<td>K</td>
<td>R</td>
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</tbody>
</table>

### STANDARD EXAMPLE FOR MARKING

- **440~X1**
  - WYO 2n2 M
  - 250~Y2
  - WYO 1.0 nF to 2.5 nF

- **440~X1**
  - WYO 4n7 M
  - IEC 384-14
  - 440 X1 250 Y2
  - 250~250
  - WYO 3.3 nF to 12 nF

### STANDARD EXAMPLE FOR LABEL PRINTING

- **Type:** WYO222KMC#CM###KR
  - **Cap.:** 2220μF ±20%
  - **Ur.:** 250/440VAC
  - **QTY:** 1800
  - **IEC:** 60384-14:2013
  - **Region:** EU
  - **RoHS compliant:** Yes
  - **Regulation:** 2011/65/EU
  - **Reference:** 00343252160011

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For technical questions, contact: slcap@vishay.com

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APPROVALS

IEC 60384-14 (edition 4) - Safety tests
This approval together with CB test certificate substitutes all national approvals.

CB Certificate
- Y2-capacitor: CB test certificate: US-26154-UL 1 nF to 12 nF 250 VAC
- X1-capacitor: CB test certificate: US-26154-UL 1 nF to 12 nF 440 VAC
Minimum thickness of insulation: 0.4 mm

VDE
- Y2-capacitor: VDE marks approval: 133769 1 nF to 12 nF 250 VAC
- X1-capacitor: VDE marks approval: 133769 1 nF to 12 nF 440 VAC
Minimum thickness of insulation: 0.4 mm

Underwriters Laboratories Inc. / Canadian Standards Association
- Y2-capacitor: UL-test certificate: E183844 1 nF to 12 nF 250 VAC
- X1-capacitor: UL-test certificate: E183844 1 nF to 12 nF 440 VAC
Across-the-line, antenna-coupling and line-by-pass component
Minimum thickness of insulation: 0.4 mm

LEAKAGE CURRENT VS. VOLTAGE (typical)

IMPEDEANCE VS. FREQUENCY (typical)

RELATED DOCUMENTS

- General Information: www.vishay.com/doc?22001
- CB Test Certificate: www.vishay.com/doc?22225
- VDE Marks Approval: www.vishay.com/doc?22227
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