AC Line Rated Ceramic Disc Capacitors
Class X1, 400 VAC / Class Y2, 300 VAC / 250 VAC

FEATURES
• Complying with IEC 60384-14
• High reliability
• Complete range of capacitance values
• Radial leads
• 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
• Across-the-line
• Line by-pass
• Antenna coupling

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.”

QUICK REFERENCE DATA

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic Class</td>
<td>2</td>
</tr>
<tr>
<td>Ceramic Dielectric</td>
<td>Y5S</td>
</tr>
<tr>
<td>Voltage (VAC)</td>
<td>250 300 400</td>
</tr>
<tr>
<td>Min. Capacitance (pF)</td>
<td>1000</td>
</tr>
<tr>
<td>Max. Capacitance (pF)</td>
<td>8000</td>
</tr>
<tr>
<td>Mounting</td>
<td>Radial</td>
</tr>
</tbody>
</table>

INSULATION RESISTANCE
Min. 1000 ΩF

TOLERANCE ON CAPACITANCE
± 20 %

DISSIPATION FACTOR
2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC
Y5S (Class 2)

CLIMATIC CATEGORY ACC. TO EN 60068-1
25/125/21

OPERATING TEMPERATURE RANGE
-30 °C to +125 °C

CAPACITANCE RANGE
1.0 nF to 8.0 nF

RATED VOLTAGE
IEC 60384-14:
• X1: 400 VAC, 50 Hz
• Y2: 300 VAC, 50 Hz (LS ≥ 5.5 mm)
• Y2: 250 VAC, 50 Hz (LS < 5.5 mm)

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)
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.

Revision: 25-May-2020
LEAKAGE CURRENT VS. VOLTAGE (Typical)

In the left-hand side of the image, you see a series of graphs showing leakage current versus voltage for different models of the 25Y Series. Each graph represents a different model, and the leakage current is plotted on the y-axis while the AC voltage is on the x-axis. The models are differentiated by their labels on the graph.

INSERTION LOSS VS. FREQUENCY (Typical)

On the right-hand side, there are graphs illustrating insertion loss versus frequency for the same models. The insertion loss is plotted on the y-axis and the frequency is on the x-axis. The graphs show how the insertion loss changes with frequency for each model.
### APPROVALS

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

**CB Certificate**

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Certificate</th>
<th>Voltage Range</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2-capacitor</td>
<td>DE1-63498</td>
<td>1 nF to 8 nF</td>
<td>250 VAC</td>
</tr>
<tr>
<td>X1-capacitor</td>
<td>DE1-63498</td>
<td>1 nF to 8 nF</td>
<td>400 VAC</td>
</tr>
</tbody>
</table>

**VDE**

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Certificate</th>
<th>Voltage Range</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2-capacitor</td>
<td>40003978</td>
<td>1 nF to 8 nF</td>
<td>250 VAC</td>
</tr>
<tr>
<td>X1-capacitor</td>
<td>40003978</td>
<td>1 nF to 8 nF</td>
<td>400 VAC</td>
</tr>
</tbody>
</table>

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

Underwriters Laboratories Inc.

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Certificate</th>
<th>Voltage Range</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2-capacitor</td>
<td>E99264</td>
<td>1 nF to 8 nF</td>
<td>300 VAC (1)</td>
</tr>
<tr>
<td>X1-capacitor</td>
<td>E99264</td>
<td>1 nF to 8 nF</td>
<td>250 VAC (1)</td>
</tr>
</tbody>
</table>

**Fixed capacitors for electromagnetic interference suppression and connection to the supply mains.**

**Note**

(1) LS ≥ 5.5 mm: 300 VAC; LS < 5.5 mm: 250 VAC

### MARKING

#### Sample

**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

<table>
<thead>
<tr>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
</table>
Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.