AC Line Rated Disc Capacitors
Class X1, 400 VAC/Class Y2, 300 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.”

**CAPACITANCE RANGE**
10 pF to 0.015 μF

**RATED VOLTAGE**
IEC 60384-14:
- **X1:** 400 VAC, 50 Hz
- **Y2:** 300 VAC, 50 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)
## DIMENSIONS in inches (millimeters)

![Diagram of capacitor dimensions](image)

### ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 30LV

<table>
<thead>
<tr>
<th>C (pF)</th>
<th>TOL. (%)</th>
<th>Dmax. Diam. (INCH (mm))</th>
<th>Tmax. Thickness (INCH (mm))</th>
<th>WIRE SIZE</th>
<th>LS Lead Space (INCH (mm))</th>
<th>ORDERING CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0G</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.190 (4.8)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ10-R</td>
</tr>
<tr>
<td>U2J</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.200 (5.1)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ15-R</td>
</tr>
<tr>
<td>P3K</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.185 (4.7)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ22-R</td>
</tr>
<tr>
<td>R3L</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.190 (4.8)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ33-R</td>
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<tr>
<td>S3L</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.175 (4.4)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ47-R</td>
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<tr>
<td>X7R</td>
<td>± 10</td>
<td>0.330 (8.4)</td>
<td>0.200 (5.1)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ10-R</td>
</tr>
<tr>
<td>Y5U</td>
<td>± 20</td>
<td>0.330 (8.4)</td>
<td>0.210 (5.3)</td>
<td>22</td>
<td>0.025 (0.64)</td>
<td>30LVQ68-R</td>
</tr>
</tbody>
</table>
ORDERING INFORMATION, CERAMIC X1/Y2 CAPACITORS 30LV

<table>
<thead>
<tr>
<th>C (pF)</th>
<th>TOL. (%)</th>
<th>Dmax. DIAMETER (inch)</th>
<th>Tmax. THICKNESS (inch)</th>
<th>WIRE SIZE</th>
<th>LS LEAD SPACE (inch)</th>
<th>ORDERING CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y5U</td>
<td>±20</td>
<td>0.620 (15.7)</td>
<td>0.230 (5.8)</td>
<td>20</td>
<td>0.032 (0.81)</td>
<td>30LVD47-R</td>
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<tr>
<td></td>
<td></td>
<td>0.620 (15.7)</td>
<td>0.225 (5.7)</td>
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<td></td>
<td>30LVD50-R</td>
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<tr>
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<td></td>
<td>0.560 (14.2)</td>
<td>0.195 (5.0)</td>
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<td>30LVD55-R</td>
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<tr>
<td></td>
<td></td>
<td>0.560 (14.2)</td>
<td>0.205 (5.2)</td>
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<td>30LVD6-R</td>
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<td></td>
<td>0.620 (15.7)</td>
<td>0.215 (5.5)</td>
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<td>30LVD68-R</td>
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<tr>
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<td>0.680 (17.3)</td>
<td>0.205 (5.2)</td>
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<td>30LVD80-R</td>
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<td>0.720 (18.3)</td>
<td>0.210 (5.3)</td>
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<td>30LVD90-R</td>
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<td>0.790 (20.1)</td>
<td>0.225 (5.7)</td>
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<td>30LV10-R</td>
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<tr>
<td></td>
<td></td>
<td>0.900 (22.9)</td>
<td>0.210 (5.3)</td>
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<td></td>
<td>30LV15-R</td>
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</tbody>
</table>

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.

LEAKAGE CURRENT VS. VOLTAGE

(Typical)
**INSERTION LOSS VS. FREQUENCY** (Typical)

![Graph of Insertion Loss vs. Frequency](image)

**APPROVALS**

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

**CB Certificate**
- Y2-capacitor: CB test certificate: DE1-63499 10 pF to 15 nF 300 VAC (1)
- Y2-capacitor: CB test certificate: DE1-63499 10 pF to 15 nF 250 VAC (1)
- X1-capacitor: CB test certificate: DE1-63499 10 pF to 15 nF 400 VAC

**VDE**
- Y2-capacitor: VDE marks approval: 40003992 10 pF to 15 nF 300 VAC (1)
- Y2-capacitor: VDE marks approval: 40003992 10 pF to 15 nF 250 VAC (1)
- X1-capacitor: VDE marks approval: 40003992 10 pF to 15 nF 400 VAC

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

**Underwriters Laboratories Inc.**
- Y2-capacitor: UL test certificate: E99264 10 pF to 15 nF 300 VAC
- X1-capacitor: UL test certificate: E99264 10 pF to 15 nF 400 VAC

UL 60384-14, CSA E60384-1, CSA E60384-14

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

**Note**

(1) LS ≥ 7.5 mm: 300 VAC; 5.0 mm ≤ LS < 7.5 mm: 250 VAC
MARKING

Sample

CM
30LV
222M
IEC 60384-14
Y2 300V~
X1 400V~
XX - XXX

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?22228 |
| VDE Marks Approval | www.vishay.com/doc?22229 |
| UL Test Certificate | www.vishay.com/doc?22230 |
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