

AC Line Rated Disc Capacitors
Class X1, 400 V_{AC} / Class Y2, 300 V_{AC} / 250 V_{AC}



| QUICK REFERENCE DATA | | | | | | |
|----------------------------|--------|-----|-----|--------|-----|-----|
| DESCRIPTION | VALUE | | | | | |
| Ceramic Class | 2 | | | | | |
| Ceramic Dielectric | Y5U | Y5U | Y5U | Y5V | Y5V | Y5V |
| Voltage (V _{AC}) | 250 | 300 | 400 | 250 | 300 | 400 |
| Min. Capacitance (pF) | 1000 | | | 4700 | | |
| Max. Capacitance (pF) | 10 000 | | | 10 000 | | |
| Mounting | Radial | | | | | |

INSULATION RESISTANCE

Min. 1000 ΩF

TOLERANCE ON CAPACITANCE

± 20 %

DISSIPATION FACTOR

2.0 % max. at 1 kHz; 1 V

CERAMIC DIELECTRIC

Y5U, Y5V (Class 2)

CLIMATIC CATEGORY ACC. TO EN 60068-1

25/125/21

OPERATING TEMPERATURE RANGE

-30 °C to +125 °C

FEATURES

- Complying with IEC 60384-14 3rd edition
- 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



RoHS
COMPLIANT

APPLICATIONS

- X1 / Y2 according to IEC 60384-14.3
- 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

1.0 nF to 0.01 μF

RATED VOLTAGE

IEC 60384-14.3:

- X1: 400 V_{AC}, 50 Hz
- Y2: 300 V_{AC}, 50 Hz (LS ≥ 5.5 mm)
- Y2: 250 V_{AC}, 50 Hz (LS < 5.5 mm)

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2500 V_{AC}, 50 Hz, 2 s

As repeated test admissible only once with:

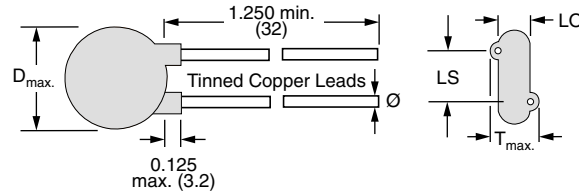
2250 V_{AC}, 50 Hz, 2 s

Random sampling test (destructive test):

2500 V_{AC}, 50 Hz, 60 s

DIELECTRIC STRENGTH OF BODY INSULATION

2300 V_{AC}, 50 Hz, 60 s (destructive test)

DIMENSIONS in inches (millimeters)

ORDERING INFORMATION, CERAMIC X1 / Y2 CAPACITORS 30LVS

| C (pF) | TOL. (%) | D _{max.} DIAMETER INCH (mm) | T _{max.} THICKNESS INCH (mm) | WIRE SIZE | | LS LEAD SPACE INCH (mm) ± 1 mm | LO LEAD OFFSET INCH (mm) ± 0.5 mm | ORDERING CODE |
|------------|-------------|--|---|-----------|--------------|---|--|------------------|
| | | | | AWG | INCH (mm) | | | |
| Y5U | | | | | | | | |
| 1000 | ± 20 | 0.330 (8.4) | 0.195 (5.0) | 22 | 0.025 (0.64) | 0.250 (6.4) | 0.098 (2.5) | 30LVSD10-R |
| 1500 | | 0.330 (8.4) | 0.185 (4.7) | | | | 0.091 (2.3) | 30LVSD15-R |
| 2000 | | 0.330 (8.4) | 0.180 (4.6) | | | | 0.083 (2.1) | 30LVSD20-R |
| 2200 | | 0.330 (8.4) | 0.170 (4.3) | | | | 0.079 (2.0) | 30LVSD22-R |
| 2700 | | 0.365 (9.3) | 0.180 (4.6) | | | | 0.083 (2.1) | 30LVSD27-R |
| 2800 | | 0.365 (9.3) | 0.175 (4.4) | | | | 0.079 (2.0) | 30LVSD28-R |
| 3000 | | 0.400 (10.2) | 0.180 (4.6) | | | | 0.083 (2.1) | 30LVSD30-R |
| 3200 | | 0.400 (10.2) | 0.180 (4.6) | | | | 0.091 (2.3) | 30LVSD32-R |
| 3300 | | 0.400 (10.2) | 0.175 (4.4) | | | | 0.083 (2.1) | 30LVSD33-R |
| 3900 | | 0.460 (11.7) | 0.185 (4.7) | | | | 0.098 (2.5) | 30LVSD39-R |
| 4000 | | 0.490 (12.4) | 0.190 (4.8) | | | | 0.102 (2.6) | 30LVSD40-R |
| 4700 | | 0.490 (12.4) | 0.185 (4.7) | | | | 0.094 (2.4) | 30LVSD47-R |
| 5000 | | 0.530 (13.5) | 0.190 (4.8) | | | | 0.098 (2.5) | 30LVSD50-R |
| 5500 | | 0.530 (13.5) | 0.180 (4.6) | | | | 0.091 (2.3) | 30LVSD55-R |
| 6800 | | 0.620 (15.7) | 0.200 (5.1) | | | | 0.098 (2.5) | 30LVSD68-R |
| 0.010 µF | | 0.720 (18.3) | 0.200 (5.1) | | | | 0.102 (2.6) | 30LVSS10-R |
| Y5V | | | | | | | | |
| 4700 | ± 20 | 0.430 (10.9) | 0.185 (4.7) | 22 | 0.025 (0.64) | 0.250 (6.4) | 0.091 (2.3) | 30LVSD47-R |
| 0.010 µF | ± 20 | 0.620 (15.7) | 0.200 (5.1) | 20 | 0.032 (0.81) | 0.375 (9.5) | 0.098 (2.5) | 30LVSVS10-R |

Notes

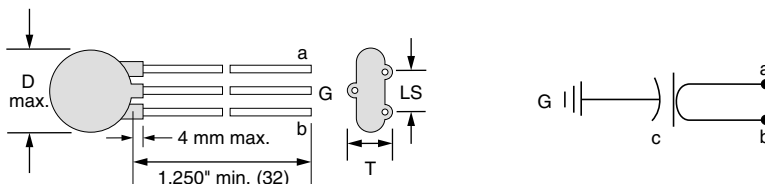
- Alternate lead spacings of 7.5 mm and 10 mm are available bulk or tape and reel on request.
- Minimum lead clearance according to IEC 60384-14: 0.118" (3 mm)

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.

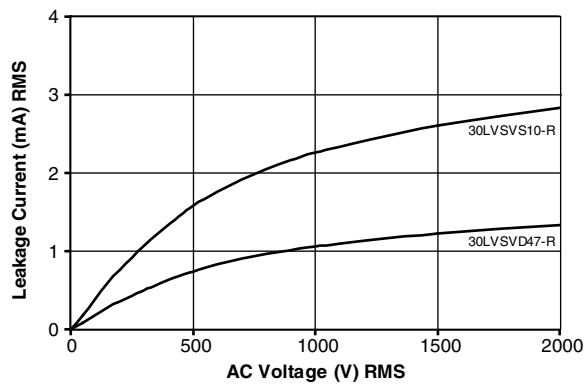
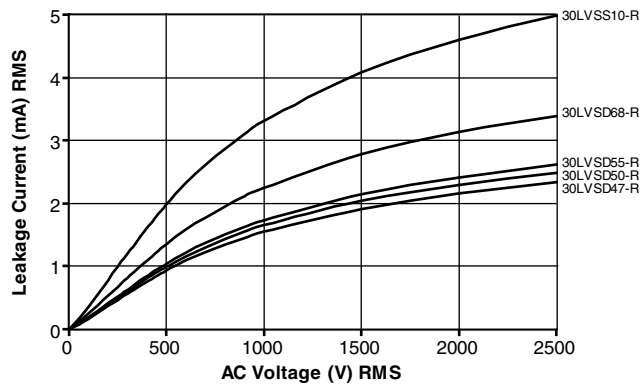
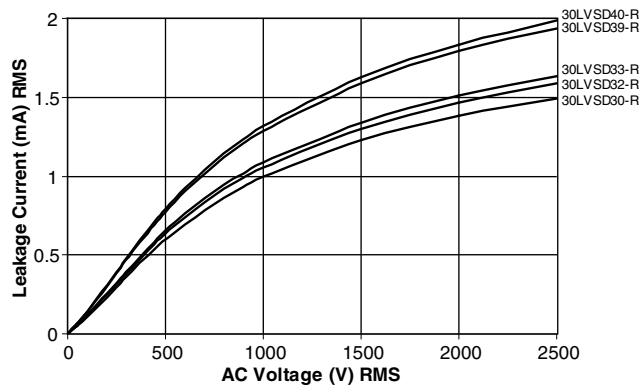
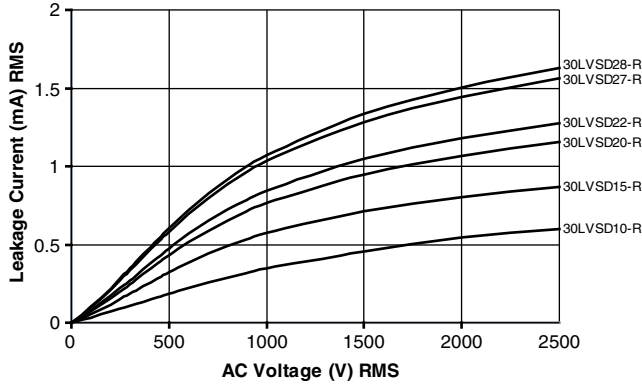
OPTIONAL 3-LEADED STYLE

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.

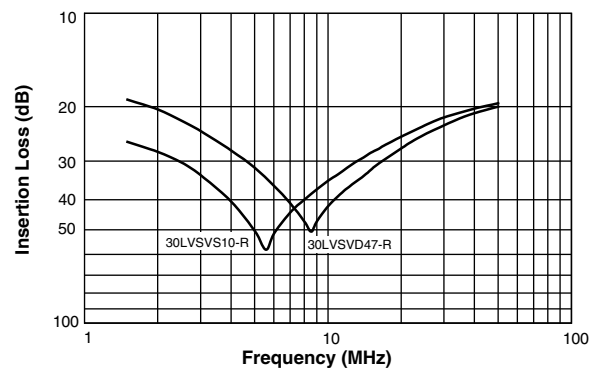
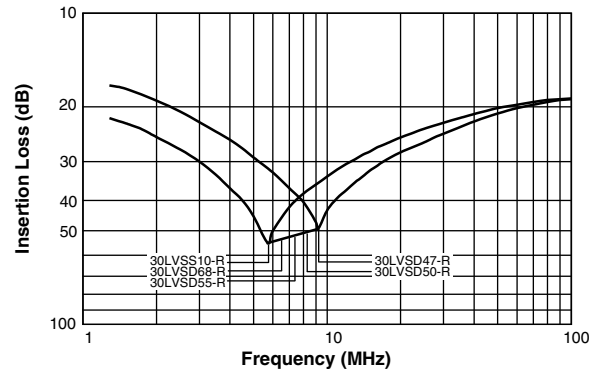
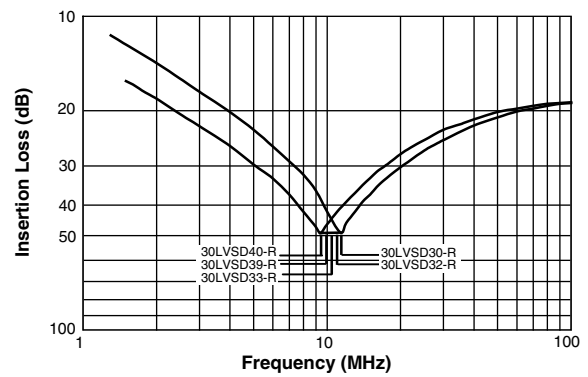
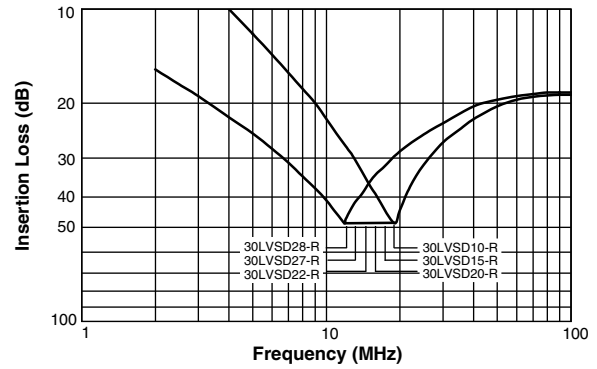




LEAKAGE CURRENT VS. VOLTAGE (Typical)



INSERTION LOSS VS. FREQUENCY (Typical)





| APPROVALS | | | | |
|---|--------------|---------------|------------------------------------|--|
| IEC 60384-14.3 - Safety tests This approval together with CB test certificate substitutes all national approvals. | | | | |
| CB Certificate | | | | |
| Y2-capacitor: CB test certificate: | CA/14038/CSA | 1 nF to 10 nF | 300 V _{AC} ⁽¹⁾ | |
| Y2-capacitor: CB test certificate: | CA/14038/CSA | 1 nF to 10 nF | 250 V _{AC} ⁽¹⁾ | |
| X1-capacitor: CB test certificate: | CA/14038/CSA | 1 nF to 10 nF | 400 V _{AC} | |
| VDE | | | | |
| Y2-capacitor: VDE marks approval: | 40003969 | 1 nF to 10 nF | 250 V _{AC} | |
| X1-capacitor: VDE marks approval: | 40003969 | 1 nF to 10 nF | 400 V _{AC} | |
| DIN EN 60384-14 VDE 0565-1-1:2006-04 - Safety tests | | | | |
| Underwriters Laboratories Inc. | | | | |
| Y2-capacitor: UL test certificate: | E99264 | 1 nF to 10 nF | 300 V _{AC} ⁽¹⁾ | |
| Y2-capacitor: UL test certificate: | E99264 | 1 nF to 10 nF | 250 V _{AC} ⁽¹⁾ | |
| X1-capacitor: UL test certificate: | E99264 | 1 nF to 10 nF | 400 V _{AC} | |
| UL 60384-14, CSA E60384-1:03, CSA E60384-14:09 Fixed capacitors for electromagnetic interference suppression and connection to the supply mains. | | | | |

Note

⁽¹⁾ LS ≥ 5.5 mm: 300 V_{AC}; LS < 5.5 mm: 250 V_{AC}

| MARKING | |
|---------------|--|
| <p>Sample</p> | <p>VISHAY</p> <p>Type: 019C085B251RR332MLA637 - R CM PN: 30LVSD33KA - R E3 Qty. : 1500 LOT1: 11642586 DC1: 0622 IEC 60384 - 14 / 2: LOT2: DC2: Y2 (250 ~), X1 (400 ~) R.C.: 7032 S.L.: 0010 Op.No.: 771 BATCH NO.: 200622GZ PN: 30LVSD33KA - R PO: 0011642586 / 0001</p> <p> LR62016 </p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">SN: 290B1A6DA001</p> |

| RELATED DOCUMENTS | |
|---------------------|--|
| General Information | www.vishay.com/doc?23140 |
| CB Test Certificate | www.vishay.com/doc?22231 |
| VDE Marks Approval | www.vishay.com/doc?22232 |
| UL Test Certificate | www.vishay.com/doc?22233 |



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