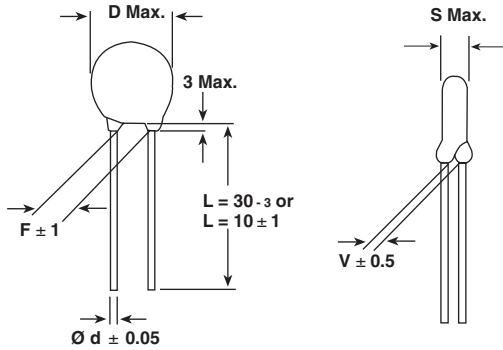


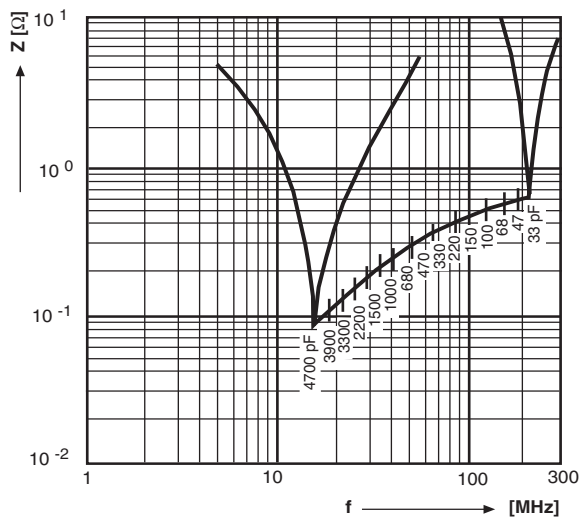
Ceramic AC Capacitors

Class X1, 440 V_{AC}/Class Y2, 300 V_{AC}

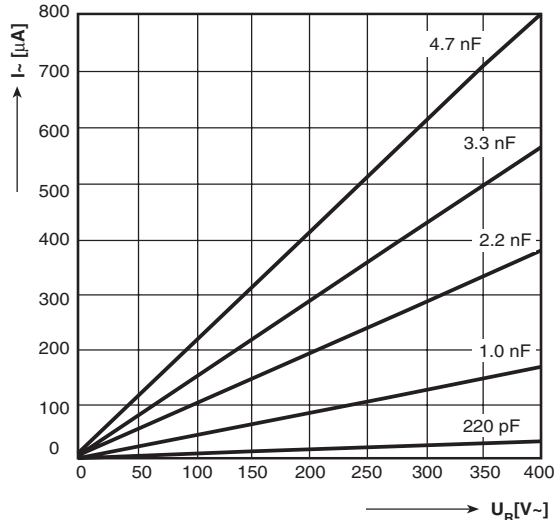


• Dimensions in mm

Impedance (Z) as a function of frequency (f) at Ta = 20 °C (average). Measurement with lead length 50 mm.



I = f (U_R) (typ.)



DESIGN:

Disc capacitors with epoxy coating



RoHS
COMPLIANT

RATED VOLTAGE U_R:

- (X1): 440 V_{AC}, 50 Hz (IEC 60384-14.2)
- (Y2): 300 V_{AC}, 50 Hz (IEC 60384-14.2)
- 250 V_{AC}, 60 Hz (UL1414, CSA C22.2)

DIELECTRIC STRENGTH BETWEEN LEADS:

- Component test:
- 2600 V_{AC}, 50 Hz, 2 s
- As repeated test admissible only once with 2340 V_{AC}, 50 Hz, 2 s
- Random sampling test (destructive test):
- 2600 V_{AC}, 50 Hz, 60 s

DIELECTRIC STRENGTH OF BODY INSULATION:

- 2600 V_{AC}, 50 Hz, 60 s (destructive test)

DISSIPATION FACTOR tan δ:

≤ 25 • 10⁻³

INSULATION RESISTANCE R_{is}:

≥ 6 • 10⁹ Ω

CATEGORY TEMPERATURE RANGE θ_A:

(- 40 to + 125) °C

CLIMATIC CATEGORY ACC. TO EN60068-1:

40/125/21

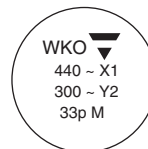
COATING:

Epoxy, dipped, insulating, flame retarding acc. to UL 94V-0

TAPING AND SPECIAL LEAD CONFIGURATIONS:

On request

MARKING:



WKO 33 pF to 1.0 nF

WKO 1.5 nF to 4.7 nF

All approval marks are also shown on the label.



Ceramic AC Capacitors
Class X1, 440 V_{AC}/Class Y2, 300 V_{AC}

Vishay Draloric

| ORDERING INFORMATION, CERAMIC X1 / Y2 CAPACITORS WKO | | | | | | |
|---|----------------|---------------|----------------|-------------------|------------------|----------------|
| CAPACITANCE** (pF) | TOL. (%) | D x s (mm) | F ± 1* (mm) | d ± 0.05* (mm) | V ± 0.5* (mm) | ORDERING CODE |
| CLASS 1 N750 | | | | | | |
| 33 | ± 10 %, ± 20 % | 8.0 x 5.0 | 7.5 | 0.6 | 1.6 | WKO330□CP□□□KR |
| 47 | | 8.0 x 5.0 | | | | WKO470□CP□□□KR |
| CLASS 2 K1200 | | | | | | |
| 68 | ± 10 %, ± 20 % | 8.0 x 5.0 | 7.5 | 0.6 | 1.9 | WKO680□CP□□□KR |
| CLASS 2 K1500 | | | | | | |
| 100 | ± 10 %, ± 20 % | 8.0 x 5.0 | 7.5 | 0.6 | 1.9 | WKO101□CP□□□KR |
| CLASS 2 K2000 | | | | | | |
| 150 | ± 10 %, ± 20 % | 8.0 x 5.0 | 7.5 | 0.6 | 1.9 | WKO151□CP□□□KR |
| 220 | | 8.0 x 5.0 | | | | WKO221□CP□□□KR |
| 330 | | 8.0 x 5.0 | | | | WKO331□CP□□□KR |
| CLASS 2 K4000 | | | | | | |
| 470 | ± 10 %, ± 20 % | 8.0 x 5.0 | 7.5 | 0.6 | 2.0 | WKO471□CP□□□KR |
| 680 | | 9.0 x 5.0 | | | | WKO681□CP□□□KR |
| 1000 | | 10.0 x 5.0 | | | | WKO102□CP□□□KR |
| 1500 | | 0.8 | | 12.0 x 5.0 | 1.6 | WKO152□CP□□□KR |
| 2200 | | | | 13.0 x 5.0 | | WKO222□CP□□□KR |
| 3300 | | | | 15.0 x 5.0 | | WKO332□CP□□□KR |
| 3900 | | | | 16.0 x 5.0 | | WKO392□CP□□□KR |
| 4700 | | | | 18.0 x 5.0 | | WKO472□CP□□□KR |
| | | | | 12.5 | | |

* Standard lead configuration, other lead spacing and diameter available on request.

** Capacitance values from 1000 pF to 4700 pF: The alternative usage of smaller WKO series is recommended for new application.

| ORDERING CODE | | | |
|----------------------|--------------------|--|--------------------------|
| □ | 7th digit | Capacitance Tolerance: | ± 10 % = K ± 20 % = M |
| □□□ | 10th to 12th digit | Lead Configuration (see General Information) | |
| R | 14th digit | RoHS Compliant Component | |

| APPROVALS | | | | | | |
|---|--|-------------|-------------|-----------------|------------------|----------------|
| IEC 60384 - 14 / 2nd Issue (1993) incl. Am. 1 (1995) - Safety Tests | | | | | | |
| EN 132 400 (1994) - Safety Tests | | | | | | |
| That approval together with the 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 | |
| Y2 - Capacitor: CB-Test Certificate: X1 - Capacitor: CB-Test Certificate: Minimum thickness of insulation: 0.4 mm | | | | DE-1-11134-A1 | 33 pF ... 4.7 nF | 300 Vac |
| | | | | DE-1-11134-A1 | 33 pF ... 4.7 nF | 440 Vac |
| | | | | | | |
| Underwriters Laboratories Inc. | | | | | | |
| UL 1414 | Line-by-pass component. Agency Files / Licences | | | E 183 844 V1 S3 | 33 pF ... 4.7 nF | 250 Vac |
| | | | | | | |
| Canadian Standards Association | | | | | | |
| CSA C22.2 | Line-by-pass component. Agency Files / Licences | | | E 183 844 V1 S3 | 33 pF ... 4.7 nF | 250 Vac |
| No 1-98 | | | | | | |
| | | | | | | |

| ORDERING INFORMATION | | | | | | |
|-----------------------------|------------|-----------|---------------|--------------------|---------------|----------------|
| WKO | 392 | K | CP | CJ0 | K | R |
| SERIES | CAP. VALUE | TOLERANCE | RATED VOLTAGE | LEAD CONFIGURATION | INTERNAL CODE | RoHS COMPLIANT |



Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.