

AC Line Rated Ceramic Disc Capacitors

Class X1, 440 V_{AC}, Class Y2, 250 V_{AC}


RoHS
COMPLIANT

FEATURES

- Complying with IEC 60384-14 3rd edition
- 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 60384-14.3
- 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.

QUICK REFERENCE DATA

DESCRIPTION	VALUE	
Ceramic Class	2	
Ceramic Dielectric	Y5U	
Voltage (V _{AC})	440	250
Min. Capacitance (pF)	1000	
Max. Capacitance (pF)	12 000	
Mounting	Radial	

MARKING

Marking indicates series, AC rating, capacitance, tolerance code, and approvals.

OPERATING TEMPERATURE RANGE

-40 °C to +125 °C

TEMPERATURE CHARACTERISTICS

Class 2 Y5U

SECTIONAL SPECIFICATIONS

Climatic category (according to EN 60058-1)

Class 2 40/125/21

APPROVALS

IEC 60384-14.3

UL 60384-14.1

CSA E60384-1:03 2nd edition, CSA E60384-14:09 2nd edition

CAPACITANCE RANGE

1.0 nF to 12 nF

TOLERANCE ON CAPACITANCE

± 20 %

RATED VOLTAGE

- X1: 440 V_{AC}, 50 Hz (IEC 60384-14.3)
440 V_{AC}, 50 Hz/60 Hz (US/UL/CSA 60384-14)
- Y2: 250 V_{AC}, 50 Hz (IEC 60384-14.3)
250 V_{AC}, 50 Hz/60 Hz (US/UL/CSA 60384-14)

TEST VOLTAGE

- 2500 V_{AC}, 50 Hz, 2 s Component test (100 %)
- 1500 V_{AC}, 50 Hz, 60 s Random sampling test (destructive)
- 2000 V_{AC}, 60 Hz, 60 s Voltage proof of coating (destructive)

INSULATION RESISTANCE AT 500 V_{DC}

≥ 6000 MΩ (60 s)

DISSIPATION FACTOR

Class 2: max. 2.5 % (1 kHz)

DIMENSIONS in millimeters

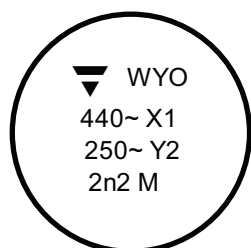
TECHNICAL DATA

TECHNICAL DATA							
CAPACITANCE C (pF)	CAPACITANCE TOLERANCE	BODY DIAMETER D _{MAX.} (mm)	BODY THICKNESS S _{MAX.} (mm)	LEAD SPACING ⁽¹⁾ F (mm) ± 1 mm	LEAD DIAMETER ⁽¹⁾ d (mm) ± 0.05 mm	WIDTH ⁽¹⁾ V (mm) ± 0.5 mm	PART NUMBER MISSING DIGITS SEE ORDERING CODE BELOW
Y5U (2E3)							
1000	± 20 %	6.5	4.5	5.0	0.6	1.4	WYO102#CM###KR
1500		8.0					WYO152#CM###KR
1800		8.0					WYO182#CM###KR
2200		9.0					WYO222#CM###KR
2500		9.0					WYO252#CM###KR
3300		11.0					WYO332#CM###KR
4700		12.0		7.5		1.6	WYO472#CM###KR
5000		12.0					WYO502#CM###KR
6800		17.0					WYO682#CM###KR
8200		17.0					WYO822#CM###KR
10 000		21.0					WYO103#CM###KR
12 000		21.0					WYO123#CP###KR

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

ORDERING CODE

#	7 th digit	Capacitance tolerance	± 10 % = K, ± 20 % = M
###	10 th to 12 th digit	Lead configuration	see "General Information"
Example	WYO	103	M
	Series	Capacitance value	Tolerance code
			CM
			Voltage code
			CF0
			Lead configuration
			K
			Internal code
			R
			RoHS compliant

MARKING


WYO 1.0 nF to 2.5 nF



WYO 3.3 nF to 12 nF



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:

US-19593-UL

1 nF to 12 nF

250 V_{AC}

X1-capacitor: CB test certificate:

US-19593-UL

1 nF to 12 nF

440 V_{AC}

Minimum thickness of insulation: 0.4 mm



VDE

Y2-capacitor: VDE marks approval:

133769

1 nF to 12 nF

250 V_{AC}

X1-capacitor: VDE marks approval:

133769

1 nF to 12 nF

440 V_{AC}

DIN EN 60384-14 VDE 0565-1-1:2006-04 - Safety tests

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 V_{AC}

X1-capacitor: UL-test certificate:

E183844

1 nF to 12 nF

440 V_{AC}

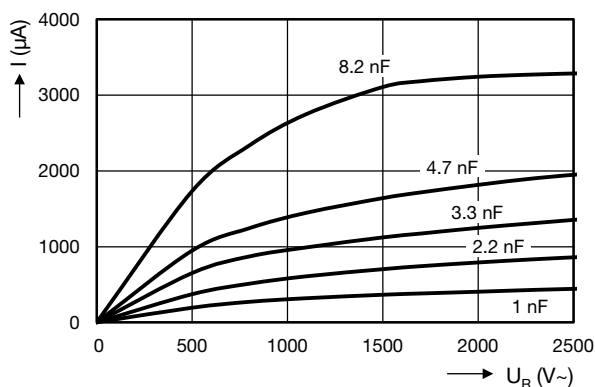
UL 60384-14.1, CSA E60384-1:03 2nd edition, CSA E60384-14:09 2nd edition

Across-the-line, antenna-coupling and line-by-pass component

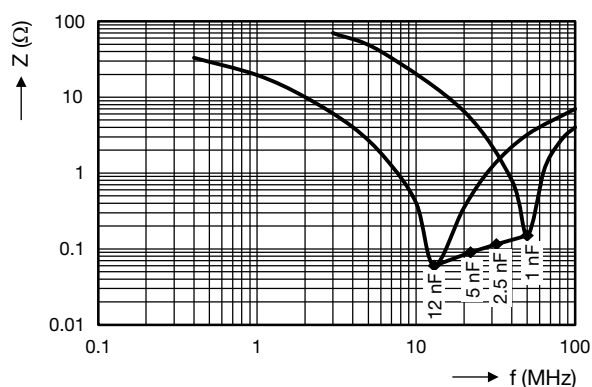
Minimum thickness of insulation: 0.4 mm



LEAKAGE CURRENT VS. VOLTAGE (typical)



IMPEDANCE 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
UL Test Certificate	www.vishay.com/doc?22226



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