

Automotive Grade AC Line Rated Ceramic Disc Capacitors Class X1, 440 V_{AC}, Class Y2, 300 V_{AC}



KEY BENEFITS

- AEC-Q200 qualified
- Withstands 85 / 85 / 1000 h test
- Can pass 3000 temperature cycles (from -55 °C to +125 °C)
- X1, Y2 according to IEC 60384-14.4
- High electrical and mechanical robustness suitable for automotive applications

APPLICATIONS

- AC line filtering
- On-board chargers and battery management of e-cars and PHEVs
- Also ideally suited for high-quality industrial applications

RESOURCES

- Datasheet: AY2 Series - www.vishay.com/doc?28550
- For technical questions contact cdc@vishay.com
- Material categorization: for definitions, please see www.vishay.com/doc?99912



Automotive Grade AC Line Rated Ceramic Disc Capacitors Class X1, 440 V_{AC}, Class Y2, 300 V_{AC}



FEATURES

- AEC-Q200 qualified
- Withstands 85 / 85 / 1000 h test
- Can pass 3000 temperature cycles (from -55 °C to +125 °C)
- Complying with IEC 60384-14 4th edition
- High reliability
- Vertical (inline) kinked or straight leads
- Singlelayer AC disc safety capacitors
- PPAP (AIAG version) is available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

QUICK REFERENCE DATA				
DESCRIPTION	VALUE			
Ceramic Class	1		2	
Ceramic Dielectric	U2J	U2J	Y5S, Y5U	Y5S, Y5U
Voltage (V _{AC})	300	440	300	440
Min. Capacitance (pF)	10		68	
Max. Capacitance (pF)	47		4700	
Mounting	Radial			

OPERATING TEMPERATURE RANGE

-55 °C to +125 °C

TEMPERATURE CHARACTERISTICS

Class 1: N750 (U2J)

Class 2: Y5S, Y5U

SECTIONAL SPECIFICATIONS

Climatic category (according to EN 60058-1)

Class 1 and class 2: 40/125/21

COATING

According to UL 94 V-0

Epoxy resin, isolating, flame retardant

APPROVALS

IEC 60384-14.4

UL 60384-14

DIN EN 60384-14

CSA E60384-1:03, CSA E60384-14:09

PACKAGING

Bulk, tape and reel, taped ammpack

APPLICATIONS

- X1, Y2 according to IEC 60384-14.4
- Application as Y capacitors for AC line filter and primary-secondary coupling on battery chargers for PHEV/EV
- Application as filter capacitors on DC/DC converters for PHEV/EV and HEV

DESIGN

The capacitor consists of a ceramic disc which is silver plated on both sides. Connection leads are made of tin plated copper-clad steel having a diameter of 0.6 mm.

The capacitors may be supplied with straight or kinked leads having a lead spacing of 5 mm, 7.5 mm, or 10.0 mm. Encapsulation is made of flame retardant epoxy resin in accordance with UL 94 V-0.

CAPACITANCE RANGE

10 pF to 4700 pF

RATED VOLTAGE U_R

IEC 60384-14.4:

(X1): 440 V_{AC}, 50 Hz

(Y2): 300 V_{AC}, 50 Hz

TEST VOLTAGE

Component test (100 %):

2600 V_{AC}, 50 Hz, 2 s

Random sampling test (destructive test):

2600 V_{AC}, 50 Hz, 60 s

Voltage proof of coating (destructive test):

2600 V_{AC}, 50 Hz, 60 s

INSULATION RESISTANCE

≥ 10 000 MΩ

CAPACITANCE TOLERANCE

± 20 % (code M); ± 10 % (code K)

DISSIPATION FACTOR

Class 1: max. 0.3 % (1 MHz)

Class 2: max. 2.5 % (1 kHz)