



# CERAMIC DISC CAPACITORS

## VY1 Series

### AC Line Rated Disc Capacitors Class X1, 760 V<sub>AC</sub>, Class Y1, 500 V<sub>AC</sub>



#### KEY BENEFITS

- Comply with IEC 60384-14, 3rd edition
- ENEC-VDE, UL60384-14, and CSA approved
- High reliability
- Compliant to RoHS Directive 2011/65/EU and REACH Regulation EC 1907/2006
- Halogen-free available
- Small size
- Vertical (inline) kink or straight leads

#### KEY SPECIFICATIONS

- Capacitance range: 10 pF to 4.7 nF
- Rated voltage IEC 60384-14.2:
  - X1: 760 V<sub>AC</sub>, 50 Hz
  - Y1: 500 V<sub>AC</sub>, 50 Hz
- Components 100 % voltage-tested at 4000 V<sub>AC</sub>, 50 Hz, 2 s
- Operating temperature: - 40 °C to + 125 °C

#### APPLICATIONS

- Across the line
- Line bypass
- Antenna coupling

#### RESOURCES

- Datasheet: VY1 Series - <http://www.vishay.com/doc?28537>
- For technical questions contact [CDC@vishay.com](mailto:CDC@vishay.com)

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Capacitors - High Reliability

# CERAMIC DISC CAPACITORS

## VY1 Series

### AC Line Rated Disc Capacitors Class X1, 760 V<sub>AC</sub>, Class Y1, 500 V<sub>AC</sub>



#### FEATURES

- Complying with IEC 60384-14, 3<sup>rd</sup> edition
- High reliability
- Vertical (inline) kinked or straight leads
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

#### APPLICATIONS

- X1, Y1 according to IEC 60384-14.3
- Across-the-line
- Line by-pass
- Antenna coupling

#### DESIGN

The capacitors consist of a ceramic disc both sides of which are silver-plated. Connection leads are made of tinned copper having a diameter of 0.6 mm.

The capacitors may be supplied with vertical (inline) kinked leads having a lead spacing of 10.0 mm. Encapsulation is made of flammable resistant epoxy resin in accordance with "UL 94 V-0".

#### CAPACITANCE RANGE

10 pF to 4700 pF

#### RATED VOLTAGE U<sub>R</sub>

IEC 60384-14.3 and UL 60384-14:  
(X1): 760 V<sub>AC</sub>, 50 Hz  
(Y1): 500 V<sub>AC</sub>, 50 Hz

#### TEST VOLTAGE

Component test (100 %):  
4000 V<sub>AC</sub>, 50 Hz, 2 s  
Random sampling test (destructive test):  
4000 V<sub>AC</sub>, 50 Hz, 60 s  
Voltage proof of coating (destructive test):  
4000 V<sub>AC</sub>, 50 Hz, 60 s

#### INSULATION RESISTANCE

10 000 MΩ minimum

#### TOLERANCE OF CAPACITANCE

± 20 % (code M); ± 10 % (code K)

#### DISSIPATION FACTOR

2.5 % maximum

#### OPERATING TEMPERATURE RANGE

- 40 °C to + 125 °C

#### TEMPERATURE CHARACTERISTICS

See Ordering Information table

#### CLIMATIC CATEGORY

40/125/21 according to EN 60068-1

#### COATING

According to UL 94 V-0  
Epoxy resin, isolating, flame retardant

#### APPROVALS

ENEC VDE (DE1-32019)  
UL 60384-14 file E183844  
CSA 22.2

#### PACKAGING

Bulk, tape and reel, taped ammpack

ORDERING INFORMATION						CLEAR TEXT CODE	
C (pF)	TOL. (%)	TEMP. COEFFICIENT	BODY DIAMETER D <sub>MAX.</sub> (mm)	BODY THICKNESS T <sub>MAX.</sub> (mm)	LEAD SPACING F (mm)	15 <sup>TH</sup> DIGIT: T = REEL; U = AMMO; 3 = BULK <sup>(1)</sup>	
						RoHS COMPLIANT	RoHS AND HALOGEN-FREE
10	± 10	U2J (N750)	8.0	5.0	10.0	VY1100K31U2JQ6*V0	VY1100K31U2JG6*V0
15						VY1150K31U2JQ6*V0	VY1150K31U2JG6*V0
22						VY1220K31U2JQ6*V0	VY1220K31U2JG6*V0
33						VY1330K31Y5SQ6*V0	VY1330K31Y5SG6*V0
47						VY1470K31Y5SQ6*V0	VY1470K31Y5SG6*V0
68	Y5S (2C3)	8.0				VY1680K31Y5SQ6*V0	VY1680K31Y5SG6*V0
100						VY1101K31Y5SQ6*V0	VY1101K31Y5SG6*V0
150						VY1151K31Y5SQ6*V0	VY1151K31Y5SG6*V0
220						VY1221K31Y5SQ6*V0	VY1221K31Y5SG6*V0
330						VY1331K31Y5SQ6*V0	VY1331K31Y5SG6*V0
470	± 20	Y5U (2E3)	9.0	VY1471M31Y5UQ6*V0	VY1471M31Y5UG6*V0		
680			10.5	VY1681M31Y5UQ6*V0	VY1681M31Y5UG6*V0		
1000			12.0	VY1102M35Y5UQ6*V0	VY1102M35Y5UG6*V0		
1500			15.0	VY1152M41Y5UQ6*V0	VY1152M41Y5UG6*V0		
2200			15.5	VY1222M47Y5UQ6*V0	VY1222M47Y5UG6*V0		
3300			16.0	VY1332M59Y5UQ6*V0	VY1332M59Y5UG6*V0		
3900				VY1392M61Y5UQ6*V0	VY1392M61Y5UG6*V0		
4700				VY1472M63Y5UQ6*V0	VY1472M63Y5UG6*V0		

#### Notes

- (1) 15<sup>th</sup> digit of the clear text code number to be completed with the packaging code
- Straight leads are available on request
- Coating extension DR valid for straight leads only
- On request available: ± 10 % tolerance
- On request available: Leads spacing 12.5 mm

#### LEADSPACING 10.0 mm

PACKAGING					
CAPACITANCE VALUE	SIZE CODE	BODY DIAMETER D <sub>MAX.</sub> (mm)	PACKAGING QUANTITIES		
			BULK	REEL	AMMO
10 pF to 2200 pF	31 to 47	12.0	1000	500	750
3300 pF to 4700 pF	51 to 63	16.0	500	500	750

#### Note

- The capacitors are supplied in bulk packaging (cardboard boxes), in tape on reel in ammpack

#### QUICK REFERENCE DATA

DESCRIPTION	CLASS X1 (U2J)	CLASS X1 (Y5S)	CLASS X1 (Y5U)	CLASS Y1 (U2J)	CLASS Y1 (Y5S)	CLASS Y1 (Y5U)
Voltage (V <sub>AC</sub> )	760	500	250	500	250	500
Min. Capacitance (pF)	10	33	470	10	33	470
Max. Capacitance (pF)	22	330	4700	22	330	4700
Mounting	Through hole					

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