

## High Voltage Ceramic DC Disc Capacitors 10 kV<sub>DC</sub> and 15 kV<sub>DC</sub>


**RoHS  
COMPLIANT**
**FEATURES**

- 20 kV rated voltage available on request
- Low losses
- High capacitance in small sizes
- High stability
- Radial leads
- Ceramic singlelayer capacitor
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

**APPLICATIONS**

- TV and monitors
- SMPS
- DC and pulse high voltage
- X-ray equipment

**DESIGN**

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper having diameters of 0.032" (0.81 mm).

The capacitors may be supplied with straight leads having lead spacing of 0.375" (9.5 mm), 0.500" (12.7 mm) or 0.750" (19.2 mm).

Coating is made of flame retardant epoxy resin in accordance with "UL 94 V-0".

**CAPACITANCE RANGE**

100 pF to 3300 pF

**DIELECTRIC STRENGTH BETWEEN LEADS**

10 kV <sub>DC</sub>	15 000 V <sub>DC</sub> , 2 s
15 kV <sub>DC</sub>	24 000 V <sub>DC</sub> , 2 s (in dielectric fluid)

**CERAMIC DIELECTRIC**

T3M (Class 1)  
X5F, Y5R, Y5U, Z5U (Class 2)

**DESIGN SUPPORT TOOLS**
[click logo to get started](#)


QUICK REFERENCE DATA				
DESCRIPTION	VALUE			
Ceramic Class	1		2	
Ceramic Dielectric	T3M (N4700)		X5F, Y5R, Y5U, Z5U	
Voltage (V <sub>DC</sub> )	10 000	15 000	10 000	15 000
Min. Capacitance (pF)	250	100	100	100
Max. Capacitance (pF)	1000	750	3300	2500
Mounting	Radial			

**INSULATION RESISTANCE**

Min. 1000 ΩF or 200 000 MΩ

**TOLERANCE ON CAPACITANCE**

± 20 % or + 80 % / - 20 %

**DISSIPATION FACTOR**

0.2 % max. at 1 kHz; 1 V (Class 1)  
2.0 % max. at 1 kHz; 1 V (Class 2)

**CATEGORY TEMPERATURE RANGE**

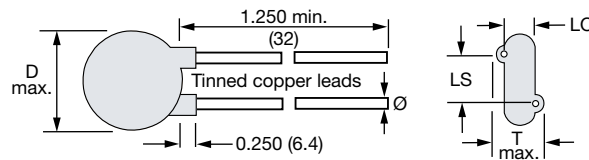
-25 °C to +85 °C

**CLIMATIC CATEGORY ACC. TO EN 60068-1**

25/85/21

**OPERATING TEMPERATURE RANGE**

-25 °C to +105 °C

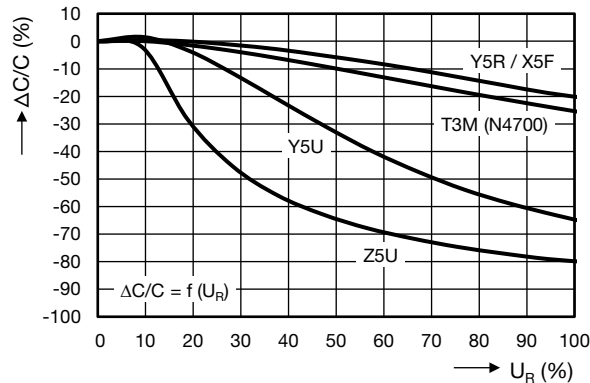
**DIMENSIONS** in inches (millimeters)

**ORDERING INFORMATION, CERAMIC 10 kV<sub>DC</sub>**

C (pF)	TOL. (%)	D <sub>max.</sub> DIAMETER INCH (mm)	T <sub>max.</sub> THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm) ± 0.040" (± 1 mm)	LO LEAD OFFSET INCH (mm) ± 0.020" (± 0.5 mm)	WIRE SIZE		ORDERING CODE
						AWG	INCH (mm)	
<b>T3M (N4700)</b>								
250	± 20	0.490 (12.4)	0.290 (7.4)	0.375 (9.5)	0.193 (4.9)	20	0.032 (0.81)	615R100GATT25
500		0.680 (17.3)	0.272 (6.9)	0.500 (12.7)	0.173 (4.4)			615R100GATT50
680		0.750 (19.1)	0.300 (7.6)		0.181 (4.6)			615R100GATT68
820		0.810 (20.6)	0.300 (7.6)		0.181 (4.6)			615R100GATT82
1000		0.980 (24.9)	0.320 (8.1)	0.189 (4.8)	615R100GATD10			
<b>X5F</b>								
100	± 20	0.680 (17.3)	0.382 (9.7)	0.500 (12.7)	0.283 (7.2)	20	0.032 (0.81)	615R100GAT10
250			0.300 (7.6)		0.201 (5.1)			615R100GAT25
500			0.345 (8.8)		0.248 (6.3)			615R100GAT50
<b>Y5R</b>								
100	± 20	0.490 (12.4)	0.320 (8.1)	0.375 (9.5)	0.220 (5.6)	20	0.032 (0.81)	615R100GAST10
250			0.331 (8.4)		0.232 (5.9)			615R100GAST25
500			0.310 (7.9)		0.213 (5.4)			615R100GAST50
1000		0.750 (19.1)	0.320 (8.1)	0.500 (12.7)	0.220 (5.6)			615R100GAD10
<b>Y5U</b>								
1000	+ 80 / - 20	0.680 (17.3)	0.330 (8.4)	0.500 (12.7)	0.232 (5.9)	20	0.032 (0.81)	615R100GASD10
2500	± 20	0.980 (24.9)						615R100GATD25
<b>Z5U</b>								
2500	+ 80 / - 20	0.750 (19.1)	0.350 (8.9)	0.500 (12.7)	0.256 (6.5)	20	0.032 (0.81)	615R100GAD25
3300		0.980 (24.9)	0.390 (9.9)		0.303 (7.7)			615R100GAD33



ORDERING INFORMATION, CERAMIC 15 kV <sub>DC</sub>									
C (pF)	TOL. (%)	D <sub>max.</sub> DIAMETER INCH (mm)	T <sub>max.</sub> THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm) ± 0.040" (± 1 mm)	LO LEAD OFFSET INCH (mm) ± 0.020" (± 0.5 mm)	WIRE SIZE		ORDERING CODE	
						AWG	INCH (mm)		
<b>T3M (N4700)</b>									
100	± 20	0.490 (12.4)	0.470 (11.9)	0.750 (19.1)	0.370 (9.4)	20	0.032 (0.81)	615R150GATT10	
250		0.670 (17.0)	0.460 (11.7)					0.362 (9.2)	615R150GATT25
390		0.750 (19.1)	0.425 (10.8)					0.283 (7.2)	615R150GATT39
500		0.810 (20.6)	0.382 (9.7)					0.283 (7.2)	615R150GATT50
750		1.063 (27.0)	0.430 (10.9)					0.331 (8.4)	615R150GATT75
<b>X5F</b>									
100	± 20	0.670 (17.0)	0.430 (10.9)	0.750 (19.1)	0.331 (8.4)	20	0.032 (0.81)	615R150GAT10	
250			0.455 (11.6)		0.358 (9.1)			615R150GAT25	
<b>Y5R</b>									
100	± 20	0.490 (12.4)	0.449 (11.4)	0.500 (12.7)	0.350 (8.9)	20	0.032 (0.81)	615R150GAST10	
250			0.480 (12.2)		0.382 (9.7)			615R150GAST25	
500		0.670 (17.0)	0.450 (11.4)	0.750 (19.1)	0.331 (8.4)			615R150GAT50	
1000		0.980 (24.9)	0.460 (11.7)		0.362 (9.2)			615R150GATD10	
<b>Y5U</b>									
500	+ 80 / - 20	0.490 (12.4)	0.375 (9.5)	0.500 (12.7)	0.276 (7.0)	20	0.032 (0.81)	615R150GAST50	
1000		0.670 (17.0)	0.420 (10.7)	0.750 (19.1)	0.323 (8.2)			615R150GAD10	
<b>Z5U</b>									
2200	+ 80 / - 20	0.980 (24.9)	0.510 (13.0)	0.750 (19.1)	0.413 (10.5)	20	0.032 (0.81)	615R150GAD22	
2500			0.450 (11.4)		0.350 (8.9)			615R150GAD25	

**CAPACITANCE CHANGE VS. VOLTAGE** (typical)



RELATED DOCUMENTS	
General Information	<a href="http://www.vishay.com/doc?23140">www.vishay.com/doc?23140</a>



## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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