

# High Voltage Class 2 Ceramic DC Disc Capacitors, 10 kV<sub>DC</sub> to 40 kV<sub>DC</sub> / 3.5 kV<sub>AC</sub> to 14 kV<sub>AC</sub>, Screw Terminal Mounting



## DESIGN SUPPORT TOOLS AVAILABLE



3D Models

## FEATURES

- Class 2 ceramic (Y5U)
- Low inductance
- High insulation resistance
- Epoxy coating
- Screw terminal mounting
- Ceramic singlelayer capacitor
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## APPLICATIONS

- High voltage power supplies
- CO<sub>2</sub> lasers
- X-ray equipment
- Welding equipment
- Industrial

QUICK REFERENCE DATA					
DESCRIPTION	VALUE				
Ceramic Class	2				
Ceramic Dielectric	Y5U				
Type	715C10DK###	715C15DK###	715C20DK###	715C30DK###	715C40DK###
Voltage (V <sub>DC</sub> )	10 000	15 000	20 000	30 000	40 000
Min. Capacitance (pF)	10 000	1500	500	500	300
Max. Capacitance (pF)	20 000	10 000	6800	4700	3300
Mounting	Screw terminal				

## DIELECTRIC STRENGTH

150 % of rated voltage, charging current limited to 50 mA.

## DISSIPATION FACTOR $\tan \delta$

 $\leq 20 \times 10^{-3}$  (1 kHz)

## INSULATION RESISTANCE

 Min. 200 000 M $\Omega$  or 1000  $\Omega$ F min. at 25 °C.

## CORONA LIMIT

&lt; 5 pC at 50 % rated AC voltage.

## OPERATING TEMPERATURE RANGE

-30 °C to +85 °C

## CAPACITANCE RANGE

300 pF to 20 nF

## CAPACITANCE TOLERANCES

-20 % to +80 %

## CERAMIC DIELECTRIC

Y5U (Class 2)

## RATED VOLTAGE <sup>(1)</sup>

- 10 kV<sub>DC</sub> (3.5 kV<sub>RMS</sub>)
- 15 kV<sub>DC</sub> (5.3 kV<sub>RMS</sub>)
- 20 kV<sub>DC</sub> (7.0 kV<sub>RMS</sub>)
- 30 kV<sub>DC</sub> (10.6 kV<sub>RMS</sub>)
- 40 kV<sub>DC</sub> (14.0 kV<sub>RMS</sub>)

### Note

<sup>(1)</sup> All kV<sub>RMS</sub> up to 60 Hz

## MATERIAL

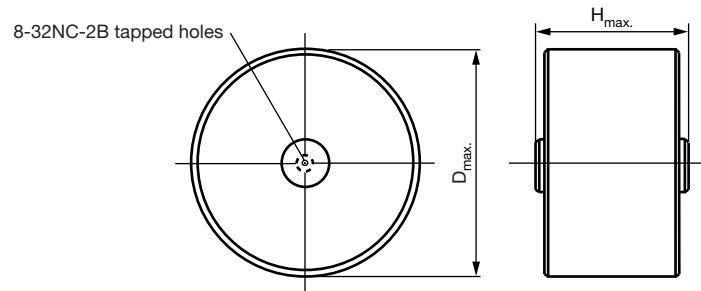
Capacitor elements made from class 2 ceramic in a molded epoxy case. Screw terminals: brass, silver plated.

## MARKING

Type designator, capacitance value, rated DC voltage, ceramic material code, production date code, Cera-mite logo.

## POWER DISSIPATION

Limit to 20 °C rise above ambient, measured on case.

**DIMENSIONS**

**Notes**

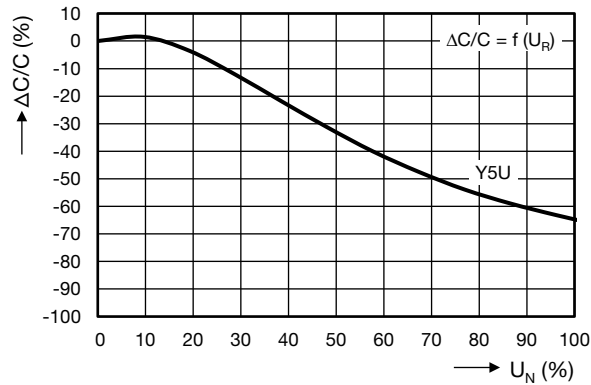
- Screw torque limit must be 12 inch pounds. Use #8-32, 3/16" long screw to prevent bottoming
- M5 metric terminals available on request, consult factory

<b>ORDERING INFORMATION</b>				
<b>715C15DKD20</b>	<b>15 kV<sub>DC</sub></b>	<b>2000 pF</b>	<b>-20 % TO +80 %</b>	<b>Y5U</b>
MODEL	RATED VOLTAGE	CAPACITANCE VALUE	TOLERANCE	CERAMIC

<b>SAP PART NUMBER, ELECTRICAL, AND DIMENSIONAL DATA</b> in millimeters (inches)						
MODEL	CERAMIC	CAPACITANCE VALUES (pF)	RATED VOLTAGE (kV <sub>DC</sub> )	RATED VOLTAGE (kV <sub>RMS</sub> )	D <sub>max.</sub>	H <sub>max.</sub>
<b>715C10DK###</b>						
715C10DKS10	Y5U	10 000	10	3.5	45.7 (1.80)	22.0 (0.87)
715C10DKS20		20 000			54.1 (2.13)	19.8 (0.78)
<b>715C15DK###</b>						
715C15DKD15	Y5U	1500	15	5.3	26.7 (1.05)	22.9 (0.90)
715C15DKD20		2000			33.0 (1.30)	
715C15DKD33		3300			39.4 (1.55)	
715C15DKD47		4700			33.0 (1.30)	
715C15DKS10		10 000			45.7 (1.80)	
<b>715C20DK###</b>						
715C20DKT50	Y5U	500	20	7.0	22.4 (0.88)	25.4 (1.00)
715C20DKD10		1000			31.8 (1.25)	
715C20DKD13		1300			33.0 (1.30)	
715C20DKD25		2500			39.4 (1.55)	
715C20DKD33		3300			45.7 (1.80)	
715C20DKD47		4700			54.1 (2.13)	
715C20DKD68		6800			61.5 (2.42)	
<b>715C30DK###</b>						
715C30DKT50	Y5U	500	30	10.6	26.7 (1.05)	34.5 (1.36)
715C30DKD10		1000			33.0 (1.30)	30.0 (1.18)
715C30DKD25		2500			45.7 (1.80)	
715C30DKD33		3300			54.1 (2.13)	
715C30DKD47		4700			61.5 (2.42)	
<b>715C40DK###</b>						
715C40DKT30	Y5U	300	40	14.0	22.4 (0.88)	34.5 (1.36)
715C40DKT50		500			26.7 (1.05)	
715C40DKT78		780			33.0 (1.30)	
715C40DKD10		1000			39.4 (1.55)	
715C40DKD16		1600			45.7 (1.80)	
715C40DKD25		2500			54.1 (2.13)	
715C40DKD33		3300			58.4 (2.30)	



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



RELATED DOCUMENTS	
General Information	<a href="http://www.vishay.com/doc?223140">www.vishay.com/doc?223140</a>
3D Models	<a href="http://www.vishay.com/doc?22174">www.vishay.com/doc?22174</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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.