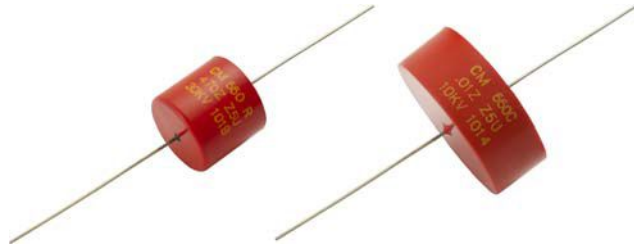


# High Voltage Ceramic DC Disc Capacitors with Axial Leads, 10 kV<sub>DC</sub> to 30 kV<sub>DC</sub>


**FEATURES**

- Class 1 and class 2 ceramic
- High insulation resistance
- Epoxy encapsulated
- Wide capacitance range
- Ceramic singlelayer capacitor
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

**RoHS**  
COMPLIANT

QUICK REFERENCE DATA												
DESCRIPTION	VALUE											
Ceramic Class	1				2				2			
Ceramic Dielectric	N4700				X7R				Z5U			
Voltage (V <sub>DC</sub> )	10 000	15 000	20 000	30 000	10 000	15 000	20 000	30 000	10 000	15 000	20 000	30 000
Min. Capacitance (pF)	470	390	220	180	180	100	100	100	1500	1000	680	470
Max. Capacitance (pF)	2000	1500	1000	680	4700	3900	2700	2000	10 000	6800	5000	3300
Mounting	Axial											

**MARKING**

Capacitance value and tolerance, rated DC voltage, T/C code, production date code, CM mark.

**MATERIAL**

Capacitor elements made from class 1 or class 2 ceramic in a molded case, high temperature epoxy construction. Leads: Tinned copper clad steel.

**DIELECTRIC STRENGTH**

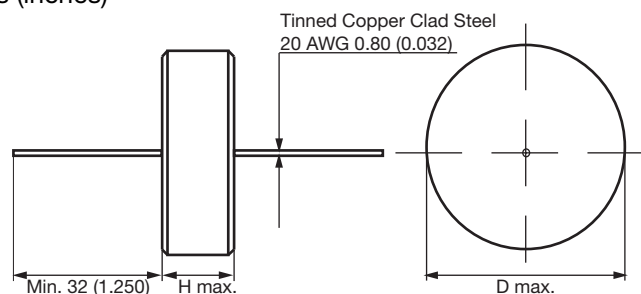
150 % of rated voltage (in dielectric fluid), charging current limited to 50 mA.

**DISSIPATION FACTOR tan δ**

N4700:  $\leq 2 \times 10^{-3}$  (1 kHz)  
X7R, Z5U:  $\leq 20 \times 10^{-3}$  (1 kHz)

**INSULATION RESISTANCE**

Min. 200 000 MΩ, at 180 V<sub>DC</sub> or 1000 ΩF

**DIMENSIONS** in millimeters (inches)


ORDERING INFORMATION				
660C20AZT68	20 kV <sub>DC</sub>	680 pF	± 20 %	N4700
MODEL	RATED VOLTAGE	CAPACITANCE VALUE	TOLERANCE	CERAMIC



SAP NUMBER AND ELECTRICAL DATA									
MODEL NUMBER 4 <sup>TH</sup> DIGIT: C = STANDARD R = RoHS COMPLIANT	CERAMIC	CAP. VALUE (pF)	TOLERANCE (%)	RATED VOLTAGE (kV <sub>DC</sub> )	RATED VOLTAGE (kV <sub>RMS</sub> )	D MAX. (mm)	D MAX. (INCHES)	H MAX. (mm)	H MAX. (INCHES)
<b>660#10AZ###</b>									
660#10AZT47	N4700	470	± 20 %	10	3.5	21	0.83	13	0.50
660#10AZD10		1000				30	1.18		
660#10AZD20		2000				37	1.45		
<b>660#10AC###</b>									
660#10ACT18	X7R	180	± 20 %	10	3.5	21	0.83	13	0.50
660#10ACT22		220							
660#10ACT33		330							
660#10ACT47		470							
660#10ACT68		680							
660#10ACD10		1000				30	1.18	15	0.60
660#10ACD15		1500							
660#10ACD22		2200							
660#10ACD33		3300				37	1.45	13	0.50
660#10ACD47		4700							
<b>660#10AE###</b>									
660#10AED15	Z5U	1500	+ 80 %/ - 20 %	10	3.5	21	0.83	13	0.50
660#10AED22		2200							
660#10AED33		3300							
660#10AED47		4700				37	1.45	11	0.45
660#10AED68		6800							
660#10AES10		10 000							
<b>660#15AZ###</b>									
660#15AZT39	N4700	390	± 20 %	15	5.3	21	0.83	13	0.50
660#15AZT82		820				30	1.18		
660#15AZD15		1500				37	1.45		
<b>660#15AC###</b>									
660#15ACT10	X7R	100	± 20 %	15	5.3	21	0.83	13	0.50
660#15ACT22		220							
660#15ACT33		330							
660#15ACT47		470							
660#15ACT68		680							
660#15ACD10		1000				30	1.18	15	0.60
660#15ACD15		1500							
660#15ACD22		2200							
660#15ACD33		3300				37	1.45	15	0.60
660#15ACD39		3900							
<b>660#15AE###</b>									
660#15AED10	Z5U	1000	+ 80 %/ - 20 %	15	5.3	21	0.83	13	0.50
660#15AED15		1500							
660#15AED22		2200							
660#15AED33		3300				37	1.45	13.5	0.53
660#15AED47		4700							
660#15AED68		6800							
<b>660#20AZ###</b>									
660#20AZT22	N4700	220	± 20 %	20	7	21	0.83	15	0.60
660#20AZT68		680				30	1.18		
660#20AZD10		1000				37	1.45		



SAP NUMBER AND ELECTRICAL DATA													
MODEL NUMBER 4 <sup>TH</sup> DIGIT: C = STANDARD R = RoHS COMPLIANT	CERAMIC	CAP. VALUE (pF)	TOLERANCE (%)	RATED VOLTAGE (kV <sub>DC</sub> )	RATED VOLTAGE (kV <sub>RMS</sub> )	D MAX. (mm)	D MAX. (INCHES)	H MAX. (mm)	H MAX. (INCHES)				
<b>660#20AC###</b>													
660#20ACT10	X7R	100	± 20 %	20	7	21	0.83	15	0.60				
660#20ACT22		220						17	0.65				
660#20ACT33		330						30	1.18	15	0.60		
660#20ACT47		470								20	0.80		
660#20ACT68		680								18	0.70		
660#20ACD10		1000				37	1.45	19	0.75				
660#20ACD15		1500						20	0.80				
660#20ACD22		2200						19	0.75				
660#20ACD25		2500						20	0.80				
660#20ACD27		2700				20	0.80						
<b>660#20AE###</b>													
660#20AET68	Z5U	680	+ 80 %/ - 20 %	20	7	21	0.83	15	0.60				
660#20AED10		1000						17	0.66				
660#20AED15		1500						30	1.18	15	0.60		
660#20AED22		2200				19	0.75						
660#20AED33		3300				14	0.55						
660#20AED47		4700				37	1.45	14	0.55				
660#20AED50		5000											
<b>660#30AZ###</b>													
660#30AZT18	N4700	180	± 20 %	30	10.6	21	0.83	20	0.80				
660#30AZT47		470				30	1.18						
660#30AZT68		680				37	1.45						
<b>660#30AC###</b>													
660#30ACT10	X7R	100	± 20 %	30	10.6	21	0.83	20	0.80				
660#30ACT22		220						30	1.18	19	0.75		
660#30ACT33		330								37	1.45	20	0.80
660#30ACT47		470											
660#30ACT68		680											
660#30ACD10		1000											
660#30ACD15		1500											
660#30ACD20		2000											
<b>660#30AE###</b>													
660#30AET47	Z5U	470	+ 80 %/ - 20 %	30	10.6	21	0.83	20	0.80				
660#30AET68		680						19	0.75				
660#30AET82		820						30	1.18	20	0.80		
660#30AED10		1000											
660#30AED12		1200				37	1.45	19	0.75				
660#30AED15		1500											
660#30AED18		1800											
660#30AED20		2000											
660#30AED22		2200											
660#30AED25		2500											
660#30AED30		3000											
660#30AED33		3300				20	0.80						



## 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.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**