

Ceramic High Voltage Disc Capacitors, Class 2



Dimensions in mm

	COATING EXTENSION e	BULK STANDARD LEAD LENGTH L
HA., HB., HC., HD., HE., HF.	3 max.	30.0 + 0 - 3 or
HGZ	5 max.	10.0 ± 1

COATING:

Epoxy dipped, insulating,
Flame retarding acc. to UL 94V-0

TEMPERATURE CHARACTERISTIC OF CAPACITANCE:

See General Information

TAPING AND SPECIAL LEAD CONFIGURATIONS:

See General Information

MARKING:

Capacitance value	Clear text
Capacitance tolerance	with letter code
Rated voltage	Clear text
Ceramic dielectric	with letter code
	HAZ, HBZ, HCZ, HFZ, HGZ series: 'D'
	HAE, HCE, HDE, HEE, HFE series: 'E'
	HAX, HBX, HCX series: no Letter code
Manufacturers logo	Where D ≥ 13 mm only

DESIGN:

Disc capacitors with epoxy coating

RATED VOLTAGE U_R :

HAZ, HAE, HAX	1 kV _{DC}
HBZ, HBE, HBX	2 kV _{DC}
HCZ, HCE, HCX	3 kV _{DC}
HDE	4 kV _{DC}
HEE	5 kV _{DC}
HFZ, HFE	6 kV _{DC}
HGZ	8 kV _{DC}

DIELECTRIC STRENGTH BETWEEN LEADS:

Component test	
HAZ, HAE, HAX	1750 kV _{DC} , 2 s
HBZ, HBE, HBX	3000 kV _{DC} , 2 s
HCZ, HCE, HCX	5000 kV _{DC} , 2 s
HDE	6000 kV _{DC} , 2 s
HEE	7500 kV _{DC} , 2 s
HFZ, HFE	9000 kV _{DC} , 2 s
HGZ	12000 kV _{DC} , 2 s

DISSIPATION FACTOR $\tan \delta$:

HA., HB., HC., HD., HE.	≤ 25 • 10 ⁻³
HF., HG.	≤ 20 • 10 ⁻³

INSULATION RESISTANCE R_{IS} :

$$\geq 1 \cdot 10^{10} \Omega$$

CATEGORY TEMPERATURE RANGE ϑ_A :

(- 40 to + 85) °C

CLIMATIC CATEGORY ACC. TO EN 60068-1:

40 / 085 / 21



RoHS
COMPLIANT

ORDERING INFORMATION

HAZ	101	M	BA	BJ0	K	R
MODEL	CAPACITANCE VALUE	TOLERANCE	RATED VOLTAGE	LEAD CONFIGURATION	INTERNAL CODE	RoHS COMPLIANT



ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 1 KV (DC)								
C (pF)	TOL. (%)	D x s (mm)	F ± 1* (mm)	d ± 0.05* (mm)	V ± 0.5* (mm)	CERAMIC CODE	ORDERING CODE	
CLASS 2 K 2000								
47	± 10 % ± 20 %	7.0 x 3.0	5	0.6	1.2	Z	HAZ470□BA□□□KR	
56		7.0 x 3.0					HAZ560□BA□□□KR	
68		7.0 x 3.0					HAZ680□BA□□□KR	
82		7.0 x 3.0					HAZ820□BA□□□KR	
100		7.0 x 3.0					HAZ101□BA□□□KR	
150		7.0 x 3.0					HAZ151□BA□□□KR	
220		7.0 x 3.0					HAZ221□BA□□□KR	
330		7.0 x 3.0					HAZ331□BA□□□KR	
470		7.0 x 3.0					HAZ471□BA□□□KR	
680		7.0 x 3.0					HAZ681□BA□□□KR	
1000		9.0 x 3.0					HAZ102□BA□□□KR	
1500		9.0 x 3.0					HAZ152□BA□□□KR	
2200		11.0 x 3.0					HAZ222□BA□□□KR	
3300		13.0 x 3.0					HAZ332□BA□□□KR	
4700	15.0 x 3.0	7.5	HAZ472□BA□□□KR					
CLASS 2 K 6000								
1000	± 20 %	7.0 x 3.0	5	0.6	1.2	E	HAE102□BA□□□KR	
1500		9.0 x 3.0					HAE152□BA□□□KR	
2200		9.0 x 3.0					HAE222□BA□□□KR	
3300		11.0 x 3.0					HAE332□BA□□□KR	
4700		11.0 x 3.0					HAE472□BA□□□KR	
6800		13.0 x 3.0					HAE682□BA□□□KR	
0.010 μF		15.0 x 3.0					7.5	HAE103□BA□□□KR
CLASS 2 K 10000								
2200	- 20 + 50 % (± 20 %) **	7.0 x 3.0	5	0.6	1.2	X	HAX222□BA□□□KR	
3300		9.0 x 3.0					HAX332□BA□□□KR	
4700		9.0 x 3.0					HAX472□BA□□□KR	
6800		13.0 x 3.0					HAX682□BA□□□KR	
0.010 μF		13.0 x 3.0					7.5	HAX103□BA□□□KR
0.015 μF		17.0 x 3.0					HAX153□BA□□□KR	
0.022 μF		18.0 x 3.0					HAX223□BA□□□KR	

* Standard lead configuration, other lead spacing and diameter available on request.

** ± 20 % available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M + 50 - 20 % = S
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	

ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 2 KV (DC)							
C (pF)	TOL. (%)	D x s (mm)	F ± 1 * (mm)	d ± 0.05 * (mm)	V ± 0.5 * (mm)	CERAMIC CODE	ORDERING CODE
CLASS 2 K 2000							
56	± 10 % ± 20 %	7.0 x 3.0	7.5	0.6	1.4	Z	HBZ560□BA□□□KR
68		7.0 x 3.0					HBZ680□BB□□□KR
82		7.0 x 3.0					HBZ820□BB□□□KR
100		7.0 x 3.0					HBZ101□BB□□□KR
150		7.0 x 3.0					HBZ151□BB□□□KR
220		7.0 x 3.0					HBZ221□BB□□□KR
330		7.0 x 3.0					HBZ331□BB□□□KR
470		7.0 x 3.0					HBZ471□BB□□□KR
680		7.0 x 3.0					HBZ681□BB□□□KR
1000		9.0 x 3.0					HBZ102□BB□□□KR
1500		9.0 x 3.0					HBZ152□BB□□□KR
2200		11.0 x 3.0					HBZ222□BB□□□KR
3300		13.0 x 3.0					HBZ332□BB□□□KR
4700		15.0 x 3.0					HBZ472□BB□□□KR
CLASS 2 K 6000							
680	± 20 %	7.0 x 3.0	7.5	0.6	1.4	E	HBE681□BB□□□KR
1000		7.0 x 3.0					HBE102□BB□□□KR
1500		9.0 x 3.0					HBE152□BB□□□KR
2200		9.0 x 3.0					HBE222□BB□□□KR
3300		11.0 x 3.0					HBE332□BB□□□KR
4700		11.0 x 3.0					HBE472□BB□□□KR
6800		13.0 x 3.0					HBE682□BB□□□KR
0.010 μF		15.0 x 3.0					HBE103□BB□□□KR
CLASS 2 K 10000							
1500	- 20 + 50 % (± 20 %) **	6.0 x 3.0	7.5	0.6	1.2	X	HBX152□BB□□□KR
2200		7.0 x 3.0					HBX222□BB□□□KR
3300		9.0 x 3.0					HBX332□BB□□□KR
4700		9.0 x 3.0					HBX472□BB□□□KR
6800		13.0 x 3.0					HBX682□BB□□□KR
0.010 μF		13.0 x 3.0					HBX103□BB□□□KR
0.015 μF		17.0 x 3.0					HBX153□BB□□□KR
0.022 μF		18.0 x 3.0					HBX223□BB□□□KR

* Standard lead configuration, other lead spacing and diameter available on request.

** ± 20 % available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M + 50 - 20 % = S
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	



ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 3 KV (DC)											
C (pF)	TOL. (%)	D x s (mm)	F ± 1* (mm)	d ± 0.05* (mm)	V ± 0.5* (mm)	CERAMIC CODE	ORDERING CODE				
CLASS 2 K 2000											
68	± 10 %	7.0 x 4.0	10	0.6	1.8	Z	HCZ680□BC□□□KR				
82		7.0 x 4.0					HCZ820□BC□□□KR				
100		7.0 x 4.0					HCZ101□BC□□□KR				
120		7.0 x 4.0					HCZ121□BC□□□KR				
150		7.0 x 4.0					HCZ151□BC□□□KR				
180		8.0 x 4.0					HCZ181□BC□□□KR				
220		8.0 x 4.0					HCZ221□BC□□□KR				
330		8.0 x 4.0					HCZ331□BC□□□KR				
470		± 20 %					10.0 x 4.0	0.8	2.0	E	HCZ471□BC□□□KR
680							10.0 x 4.0				HCZ681□BC□□□KR
1000	11.0 x 4.0		HCZ102□BC□□□KR								
1200	15.0 x 4.0		HCZ122□BC□□□KR								
1500	15.0 x 4.0		HCZ152□BC□□□KR								
2200	17.0 x 4.0		HCZ222□BC□□□KR								
3300	21.0 x 4.0		HCZ332□BC□□□KR								
4700	21.0 x 4.0		HCZ472□BC□□□KR								
6800	25.0 x 4.0	HCZ682□BC□□□KR									
CLASS 2 K 6000											
470	± 20 %	7.0 x 4.0	10	0.6	2.0	E	HCE471□BC□□□KR				
680		8.0 x 4.0					HCE681□BC□□□KR				
1000		9.0 x 4.0					HCE102□BC□□□KR				
1500		11.0 x 4.0					HCE152□BC□□□KR				
2200		11.0 x 4.0					HCE222□BC□□□KR				
3300		15.0 x 4.0		0.8	2.2		HCE332□BC□□□KR				
4700		17.0 x 4.0					HCE472□BC□□□KR				
6800		21.0 x 4.0					HCE682□BC□□□KR				
0.010 μF		25.0 x 4.0					2.5	HCE103□BC□□□KR			

* Standard lead configuration, other lead spacing and diameter available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M + 50 - 20 % = S
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	

ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 4 KV (DC)							
C (pF)	TOL. (%)	D x s (mm)	F ± 1 * (mm)	d ± 0.05 * (mm)	V ± 0.5 * (mm)	CERAMIC CODE	ORDERING CODE
CLASS 2 K 6000							
33	± 20 % (± 10 %)**	8.0 x 4.5	12.5	0.6	1.9	E	HDE330□BD□□□KR
47		8.0 x 5.0			HDE470□BD□□□KR		
68		8.0 x 5.0			HDE680□BD□□□KR		
100		8.0 x 5.0			HDE101□BD□□□KR		
150		8.0 x 5.0			HDE151□BD□□□KR		
220		8.0 x 5.0			HDE221□BD□□□KR		
330		8.0 x 5.0			HDE331□BD□□□KR		
470		8.0 x 5.0			HDE471□BD□□□KR		
680		9.0 x 5.0			HDE681□BD□□□KR		
1000		10.0 x 5.0			HDE102□BD□□□KR		
1500		12.0 x 5.0			HDE152□BD□□□KR		
2200		13.0 x 5.0			HDE222□BD□□□KR		
3300		15.0 x 5.0			HDE332□BD□□□KR		
4700		18.0 x 5.0			HDE472□BD□□□KR		

* Standard lead configuration, other lead spacing and diameter available on request.

** ± 10 % available on request.

ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 5 KV (DC)							
C (pF)	TOL. (%)	D x s (mm)	F ± 1 * (mm)	d ± 0.05 * (mm)	V ± 0.5 * (mm)	CERAMIC CODE	ORDERING CODE
CLASS 2 K 6000							
220	± 20 %	7.0 x 5.0	12.5	0.6	3.8	E	HEE221□BE□□□KR
330		9.0 x 5.0		HEE331□BE□□□KR			
680		9.0 x 5.0		HEE681□BE□□□KR			
1000		11.0 x 5.0		HEE102□BE□□□KR			
1500		13.0 x 5.0		HEE152□BE□□□KR			
2200		15.0 x 5.0		HEE222□BE□□□KR			

* Standard lead configuration, other lead spacing and diameter available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	



ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 6 KV (DC)							
C (pF)	TOL. (%)	D x s (mm)	F ± 1* (mm)	d ± 0.05* (mm)	V ± 0.5* (mm)	CERAMIC CODE	ORDERING CODE
CLASS 2 K 2000							
56	± 20 % (± 10 %) **	7.0 x 5.0	12.5	0.6	3.5	Z	HFZ560□BF□□□KR
68		7.0 x 5.0					HFZ680□BF□□□KR
82		7.0 x 5.0					HFZ820□BF□□□KR
100		8.0 x 5.0					HFZ101□BF□□□KR
120		8.0 x 5.0					HFZ121□BF□□□KR
150		8.0 x 5.0					HFZ151□BF□□□KR
180		10.0 x 5.0					HFZ181□BF□□□KR
220		10.0 x 5.0					HFZ221□BF□□□KR
270		10.0 x 5.0					HFZ271□BF□□□KR
330		10.0 x 5.0					HFZ331□BF□□□KR
390		12.0 x 5.0		HFZ391□BF□□□KR			
470		12.0 x 5.0		HFZ471□BF□□□KR			
560		13.0 x 5.0		HFZ561□BF□□□KR			
680		15.0 x 5.0		HFZ681□BF□□□KR			
820		15.0 x 5.0		HFZ821□BF□□□KR			
1000		17.0 x 5.0		HFZ102□BF□□□KR			
1200		19.0 x 5.0		HFZ122□BF□□□KR			
1500		21.0 x 5.0		HFZ152□BF□□□KR			
1800		21.0 x 5.0		HFZ182□BF□□□KR			
2200		25.0 x 5.0		HFZ222□BF□□□KR			
2700	25.0 x 5.0	HFZ272□BF□□□KR					
CLASS 2 K 6000							
150	± 20 %	7.0 x 5.0	12.5	0.6	3.5	E	HFE151□BF□□□KR
220		7.0 x 5.0					HFE221□BF□□□KR
330		9.0 x 5.0					HFE331□BF□□□KR
470		9.0 x 5.0					HFE471□BF□□□KR
680		9.0 x 5.0					HFE681□BF□□□KR
1000		11.0 x 5.5					HFE102□BF□□□KR
1500		13.0 x 5.5		HFE152□BF□□□KR			
2200		15.0 x 5.5		HFE222□BF□□□KR			
3300		21.0 x 5.5		HFE332□BF□□□KR			
4700		21.0 x 5.5		HFE472□BF□□□KR			
6800		23.0 x 5.5		HFE682□BF□□□KR			

* Standard lead configuration, other lead spacing and diameter available on request.

** ± 10 % available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	

ORDERING INFORMATION, CERAMIC HIGH VOLTAGE DISC CAPACITORS, 8 KV (DC)							
C (pF)	TOL. (%)	D x s (mm)	F ± 1 * (mm)	d ± 0.05 * (mm)	V ± 0.5 * (mm)	CERAMIC CODE	ORDERING CODE
CLASS 2 K 2000							
100	± 20 % (± 10 %)**	9.0 x 8.3	12.5	0.8	4.0	Z	HGZ101□BP□□□KR
120		9.0 x 8.3					HGZ121□BP□□□KR
150		9.0 x 8.3					HGZ151□BP□□□KR
180		11.0 x 8.3					HGZ181□BP□□□KR
220		11.0 x 8.3					HGZ221□BP□□□KR
270		11.0 x 8.3					HGZ271□BP□□□KR
330		13.0 x 8.3					HGZ331□BP□□□KR
390		13.0 x 8.3					HGZ391□BP□□□KR
470		14.0 x 8.3					HGZ471□BP□□□KR
560		16.0 x 8.3					HGZ561□BP□□□KR
680		16.0 x 8.3					HGZ681□BP□□□KR
820		18.0 x 8.3					HGZ821□BP□□□KR
1000		18.0 x 8.3					HGZ102□BP□□□KR
1200		21.0 x 8.3					HGZ122□BP□□□KR
1500		21.0 x 8.3					HGZ152□BP□□□KR
1800		24.0 x 8.3					HGZ182□BP□□□KR
2200	24.0 x 8.3	HGZ222□BP□□□KR					

* Standard lead configuration, other lead spacing and diameter available on request.

** ± 10 % available on request.

ORDERING CODE			
□	7th digit	Capacitance tolerance	± 10 % = K ± 20 % = M
□□□	10th to 12th digit	Lead configuration (See General Information)	
R	14th digit	RoHS Compliant Component	



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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.