

## 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 <sub>DC</sub>
HBZ, HBE, HBX	2 kV <sub>DC</sub>
HCZ, HCE, HCX	3 kV <sub>DC</sub>
HDE	4 kV <sub>DC</sub>
HEE	5 kV <sub>DC</sub>
HFZ, HFE	6 kV <sub>DC</sub>
HGZ	8 kV <sub>DC</sub>

### DIELECTRIC STRENGTH BETWEEN LEADS:

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

### DISSIPATION FACTOR $\tan \delta$ :

HA., HB., HC., HD., HE.	≤ 25 • 10 <sup>-3</sup>
HF., HG.	≤ 20 • 10 <sup>-3</sup>

### INSULATION RESISTANCE $R_{IS}$ :

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

### CATEGORY TEMPERATURE RANGE $\vartheta_A$ :

(- 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		
<b>CLASS 2 K 2000</b>									
47	± 10 %	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						
<b>CLASS 2 K 6000</b>									
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	
<b>CLASS 2 K 10000</b>									
2200	- 20 + 50 %	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		(± 20 %) **					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
<b>CLASS 2 K 2000</b>							
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
<b>CLASS 2 K 6000</b>							
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
<b>CLASS 2 K 10000</b>							
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				
<b>CLASS 2 K 2000</b>											
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									
<b>CLASS 2 K 6000</b>											
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
<b>CLASS 2 K 6000</b>							
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
<b>CLASS 2 K 6000</b>							
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
<b>CLASS 2 K 2000</b>							
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					
<b>CLASS 2 K 6000</b>							
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
<b>CLASS 2 K 2000</b>							
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 specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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