

## 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	



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