

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 % | 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 | | ± 20 % | | | | | 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

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