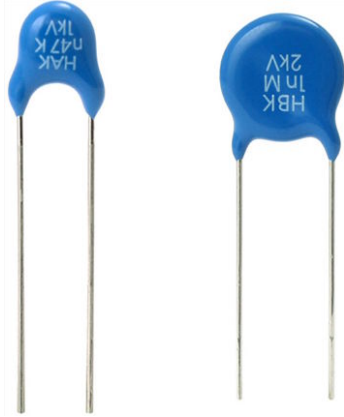


## Ceramic Singlelayer DC Disc Capacitors, Class 2, Low Loss (0.5 %), 1 kV<sub>DC</sub>, 2 kV<sub>DC</sub>, 3 kV<sub>DC</sub>


**FEATURES**

- Low losses
- High stability
- Low DF minimizes self heating at HF
- Ideal for switching to 100 kHz
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**APPLICATIONS**

In electronic circuits where low losses and high capacitance per volume are essential, for example:

- HF ballast
- SMPS
- Snubber and HV circuits

**DESIGN**

The capacitors consist of a ceramic disc which is silver plated on both sides. Connection leads are made of tinned copper having diameters of 0.6 mm or 0.8 mm.

The capacitors may be supplied with straight or kinked leads having a lead spacing of 7.5 mm or 10.0 mm.

Coating is made of blue colored flame retardant epoxy resin in accordance with UL 94 V-0.

QUICK REFERENCE DATA			
DESCRIPTION	VALUE		
Ceramic Class	2		
Ceramic Dielectric	Y5S		
Voltage (V <sub>DC</sub> )	1000	2000	3000
Min. Capacitance (pF)	100	100	100
Max. Capacitance (pF)	4700	4700	3300
Mounting	Radial		

**MARKING**

Marking indicates series, capacitance, tolerance code, and rated voltage.

**OPERATING TEMPERATURE RANGE**

-40 °C to +125 °C

**TEMPERATURE CHARACTERISTICS**

Y5S (2C3)

**SECTIONAL SPECIFICATIONS**

Climatic category (according to EN 60068-1):  
40/125/21

**APPROVALS**

IEC 60384-9, EIA 198

**CAPACITANCE RANGE**

100 pF to 4700 pF

**RATED DC VOLTAGE**

- 1 kV<sub>DC</sub>
- 2 kV<sub>DC</sub>
- 3 kV<sub>DC</sub>

**DIELECTRIC STRENGTH**

- 2000 V<sub>AC</sub>, 50 Hz, 2 s Component test
- 3000 V<sub>AC</sub>, 50 Hz, 2 s
- 4000 V<sub>AC</sub>, 50 Hz, 2 s

**INSULATION RESISTANCE AT 500 V<sub>DC</sub>**

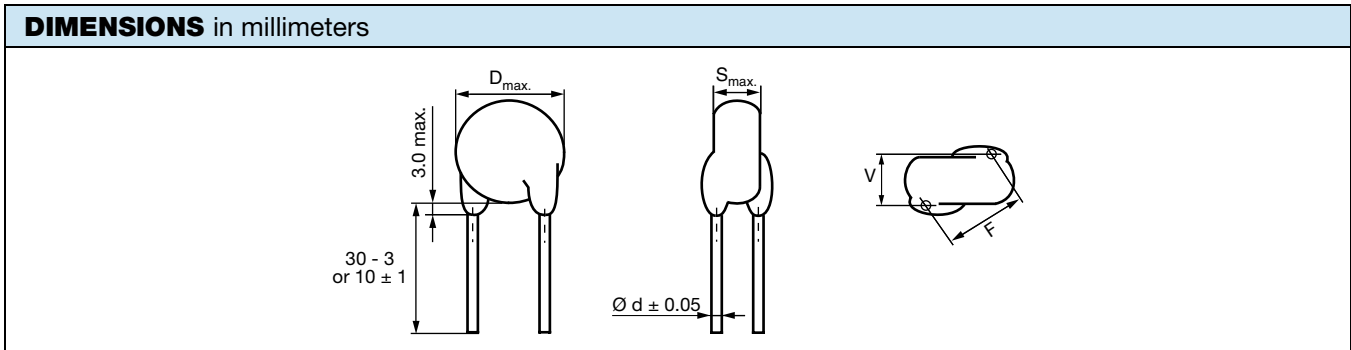
≥ 10 000 MΩ (60 s)

**TOLERANCE ON CAPACITANCE**

± 20 % (± 10 % available on request)

**DISSIPATION FACTOR**

Max. 0.5 % (1 kHz)



ORDERING INFORMATION							
CAPACITANCE (pF)	TOLERANCE (%)	BODY DIAMETER $D_{max}$ (mm)	BODY THICKNESS $S_{max}$ (mm)	LEAD SPACING <sup>(1)</sup> $F$ (mm) $\pm 1 \text{ mm}$	LEAD DIAMETER <sup>(1)</sup> $d$ (mm) $\pm 0.05 \text{ mm}$	WIDTH <sup>(1)</sup> $V$ (mm) $\pm 0.5 \text{ mm}$	ORDERING CODE MISSING DIGITS SEE ORDERING CODE BELOW
<b>1 kV<sub>DC</sub></b>							
100	$\pm 20$ <sup>(2)</sup>	7.0	5.0	7.5	0.6	1.1	HAK101#BA###KR
150							HAK151#BA###KR
220							HAK221#BA###KR
270							HAK271#BA###KR
330							HAK331#BA###KR
390							HAK391#BA###KR
470							HAK471#BA###KR
560							HAK561#BA###KR
680		HAK681#BA###KR					
820		HAK821#BA###KR					
1000		HAK102#BA###KR					
1200		HAK122#BA###KR					
1500		HAK152#BA###KR					
1800		HAK182#BA###KR					
2200		HAK222#BA###KR					
2700		HAK272#BA###KR					
3300		HAK332#BA###KR					
3900		HAK392#BA###KR					
4700	HAK472#BA###KR						
<b>2 kV<sub>DC</sub></b>							
100	$\pm 20$ <sup>(2)</sup>	7.0	5.0	7.5	0.6	1.6	HBK101#BB###KR
150							HBK151#BB###KR
220							HBK221#BB###KR
270							HBK271#BB###KR
330							HBK331#BB###KR
390							HBK391#BB###KR
470							HBK471#BB###KR
560							HBK561#BB###KR
680		HBK681#BB###KR					
820		HBK821#BB###KR					
1000		HBK102#BB###KR					
1200		HBK122#BB###KR					
1500		HBK152#BB###KR					
1800		HBK182#BB###KR					
2200		HBK222#BB###KR					
2700		HBK272#BB###KR					
3300		HBK332#BB###KR					
3900		HBK392#BB###KR					
4700	HBK472#BB###KR						



ORDERING INFORMATION							
CAPACITANCE (pF)	TOLERANCE (%)	BODY DIAMETER D <sub>max.</sub> (mm)	BODY THICKNESS S <sub>max.</sub> (mm)	LEAD SPACING <sup>(1)</sup> F (mm) ± 1 mm	LEAD DIAMETER <sup>(1)</sup> d (mm) ± 0.05 mm	WIDTH <sup>(1)</sup> V (mm) ± 0.5 mm	ORDERING CODE MISSING DIGITS SEE ORDERING CODE BELOW
<b>3 kV<sub>DC</sub></b>							
100	± 20 <sup>(2)</sup>	7.0	5.0	10.0	0.6	1.6	HCK101#BC###KR
150							HCK151#BC###KR
220							HCK221#BC###KR
270							HCK271#BC###KR
330		8.0					HCK331#BC###KR
390		9.0					HCK391#BC###KR
470		10.0					HCK471#BC###KR
560							HCK561#BC###KR
680							HCK681#BC###KR
820							HCK821#BC###KR
1000		12.0					HCK102#BC###KR
1200		13.0					HCK122#BC###KR
1500		15.0					HCK152#BC###KR
1800		16.0					HCK182#BC###KR
2200		17.0					HCK222#BC###KR
2700		18.0					HCK272#BC###KR
3300		20.0					HCK332#BC###KR

**Notes**

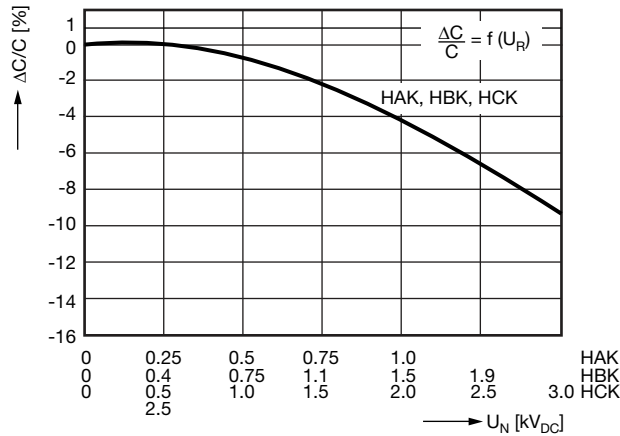
<sup>(1)</sup> Standard lead configuration, other lead spacing and diameter available on request

<sup>(2)</sup> ± 10 % available on request

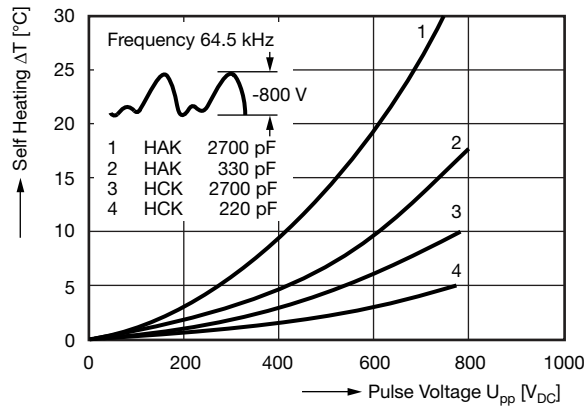
ORDERING CODE							
#	7 <sup>th</sup> digit	Capacitance tolerance	± 10 % = K, ± 20 % = M				
###	10 <sup>th</sup> to 12 <sup>th</sup> digit	Lead configuration	see "General Information"				
<b>Example</b>	<b>HCK</b>	<b>02</b>	<b>M</b>	<b>BC</b>	<b>DF0</b>	<b>K</b>	<b>R</b>
	Series	Capacitance value	Tolerance code	Voltage code	Lead configuration	Internal code	RoHS compliant

MARKING	
<p>D<sub>max.</sub> ≤ 10 mm</p>	<p>D<sub>max.</sub> ≥ 11 mm</p>

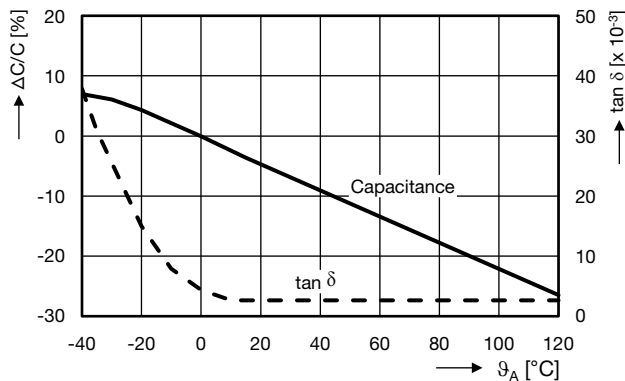
## CAPACITANCE CHANGE VS. VOLTAGE (Typical)



## SELF HEATING (Typical)



## CAPACITANCE CHANGE AND DISSIPATION FACTOR VS. TEMPERATURE (Typical)



### RELATED DOCUMENTS

General Information

[www.vishay.com/doc?22001](http://www.vishay.com/doc?22001)



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