

## Ceramic Singlelayer DC Disc Capacitors, 4 kV<sub>DC</sub> General Purpose



QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Ceramic Class	1      2
Ceramic Dielectric	N750, Y5U
Voltage (V <sub>DC</sub> )	4000
Min. Capacitance (pF)	10      33
Max. Capacitance (pF)	470      4700
Mounting	Radial

### MARKING

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

### OPERATING TEMPERATURE RANGE

-40 °C to +85 °C

### TEMPERATURE CHARACTERISTICS

Class 1      N750 (U2J)

Class 2      Y5U

### SECTIONAL SPECIFICATIONS

Climatic category (according to EN 60068-1):  
40/085/21

### FEATURES

- High capacitance in small sizes
- Low losses
- Wide range of different lead styles
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### APPLICATIONS

- Lighting ballasts
- SMPS

### 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 10.0 mm or 12.5 mm.

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

### CAPACITANCE RANGE

10 pF to 4.7 nF

### RATED VOLTAGE

4 kV<sub>DC</sub>

### DIELECTRIC STRENGTH

6000 V<sub>DC</sub>, 2 s      Component test

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

≥ 10 000 MΩ (60 s)

### TOLERANCE ON CAPACITANCE

± 10 %, ± 20 %

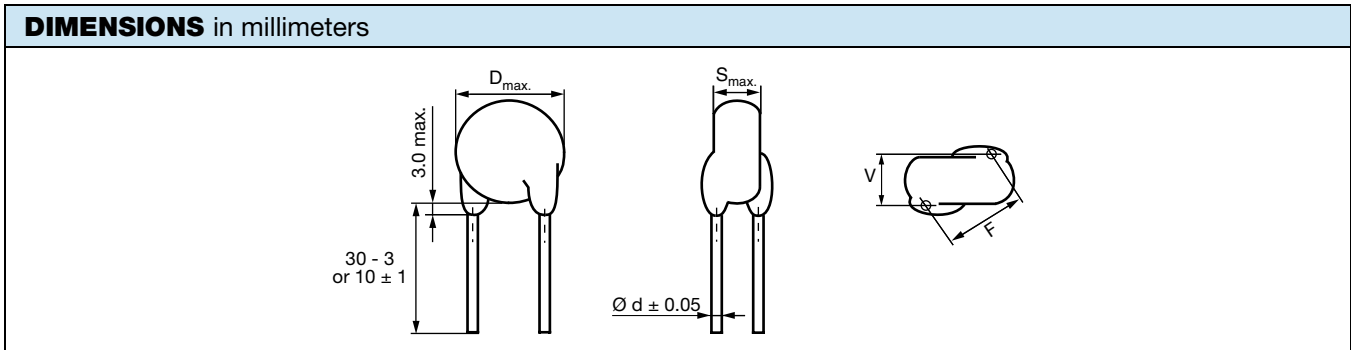
### DISSIPATION FACTOR

Class 1:

$C < 30 \text{ pF: } \left( \frac{100 \text{ pF}}{C} + 0.7 \right) \times 10^{-4} \text{ max. (1 MHz)}$

$C \geq 30 \text{ pF: } \text{max. } 0.1 \% \text{ (1 MHz)}$

Class 2:      max. 2.5 % (1 kHz)





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>N750 (U2J)</b>													
10	± 10	7.0	4.3	10.0	0.6	1.7	HDU100KBD###KR						
15							HDU150KBD###KR						
22							HDU220KBD###KR						
33							HDU330KBD###KR						
47							HDU470KBD###KR						
68							HDU680KBD###KR						
82		9.5	4.7		0.8	1.9	HDU820KBD###KR						
100							HDU101KBD###KR						
150							HDU151KBD###KR						
220							HDU221KBD###KR						
330							HDU331KBD###KR						
470							HDU471KBD###KR						
<b>Y5U (2E3)</b>													
33							± 20 <sup>(2)</sup>	8.0	4.5	12.5	0.6	1.9	HDE330#BD###KR
47	5.0	0.6	2.3	HDE470#BD###KR									
68				HDE680#BD###KR									
100				HDE101#BD###KR									
150				HDE151#BD###KR									
220				HDE221#BD###KR									
330				9.0	0.8	2.7		HDE331#BD###KR					
470	HDE471#BD###KR												
680	HDE681#BD###KR												
1000	HDE102#BD###KR												
1500	HDE152#BD###KR												
2200	HDE222#BD###KR												
3300	10.0	0.8	2.7	HDE332#BD###KR									
4700				HDE472#BD###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>HDE</b> Series	<b>100</b> Capacitance value	<b>M</b> Tolerance code	<b>BD</b> Voltage code	<b>EF0</b> Lead configuration	<b>K</b> Internal code	<b>R</b> RoHS compliant

MARKING	
	
HDU 10 pF to 100 pF HDE 33 pF to 1.5 nF	HDU 150 pF to 470 pF HDE 2.2 nF to 4.7 nF

RELATED DOCUMENTS	
General Information	<a href="http://www.vishay.com/doc?22001">www.vishay.com/doc?22001</a>



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