

## Ceramic Singlelayer DC Disc Capacitors, 1 kV<sub>DC</sub> General Purpose



QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Ceramic Class	1      2
Ceramic Dielectric	N750, Y5T, Y5U, Y5V
Voltage (V <sub>DC</sub> )	1000
Min. Capacitance (pF)	10      47
Max. Capacitance (pF)	680      22 000
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      Y5T, Y5U, Y5V

### 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 5.0 mm or 7.5 mm.

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

### CAPACITANCE RANGE

10 pF to 22 nF

### RATED VOLTAGE

1 kV<sub>DC</sub>

### DIELECTRIC STRENGTH

1750 kV<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 %, -20 % +50 %

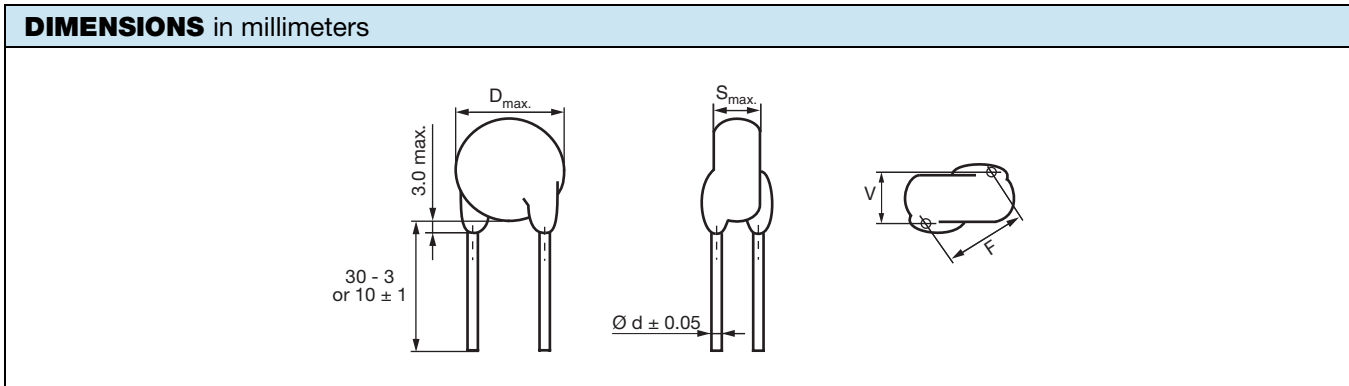
### DISSIPATION FACTOR

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 $D_{max.}$ (mm)	BODY THICKNESS $S_{max.}$ (mm)	LEAD SPACING <sup>(1)</sup> F (mm) $\pm 1$ mm	LEAD DIAMETER <sup>(1)</sup> d (mm) $\pm 0.05$ mm	WIDTH <sup>(1)</sup> V (mm) $\pm 0.5$ mm	ORDERING CODE MISSING DIGITS SEE ORDERING CODE BELOW					
<b>N750 (U2J)</b>												
10	$\pm 10$	7.0	3.0	7.5	0.6	1.4	HAU100KBA###KR					
15							HAU150KBA###KR					
22							HAU220KBA###KR					
33							HAU330KBA###KR					
47							HAU470KBA###KR					
68							HAU680KBA###KR					
82		8.0	3.5	7.5	0.6	1.4	HAU820KBA###KR					
100							HAU101KBA###KR					
150							HAU151KBA###KR					
220							HAU221KBA###KR					
330							HAU331KBA###KR					
470							HAU471KBA###KR					
560		HAU561KBA###KR										
680		HAU681KBA###KR										
<b>Y5T (2D3)</b>												
47		$\pm 10, \pm 20$	7.0	3.0	5.0	0.6	1.2	HAZ470#BA###KR				
56	HAZ560#BA###KR											
68	HAZ680#BA###KR											
82	HAZ820#BA###KR											
100	HAZ101#BA###KR											
150	HAZ151#BA###KR											
220	HAZ221#BA###KR											
330	HAZ331#BA###KR											
470	HAZ471#BA###KR											
680	HAZ681#BA###KR											
1000	9.0							3.0	7.5	0.6	1.2	HAZ102#BA###KR
1500												HAZ152#BA###KR
2200			HAZ222#BA###KR									
3300			HAZ332#BA###KR									
4700	15.0		HAZ472#BA###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>Y5U (2E3)</b>								
1000	± 20	7.0	3.0	5.0	0.6	1.2	HAE102MBA###KR	
1500		9.0					HAE152MBA###KR	
2200		11.0					HAE222MBA###KR	
3300		13.0					HAE332MBA###KR	
4700		15.0		HAE472MBA###KR				
6800							7.5	HAE682MBA###KR
10 000								HAE103MBA###KR
<b>Y5V (2F3)</b>								
2200	- 20 / + 50 <sup>(2)</sup>	7.0	3.0	5.0	0.6	1.2	HAX222#BA###KR	
3300		9.0					HAX332#BA###KR	
4700		12.0					HAX472#BA###KR	
6800		17.0					HAX682#BA###KR	
10 000		18.0		HAX103#BA###KR				
15 000							7.5	HAX153#BA###KR
22 000								HAX223#BA###KR

**Notes**

- <sup>(1)</sup> Standard lead configuration, other lead spacing and diameter available on request
- <sup>(2)</sup> ± 20 % available on request

ORDERING CODE							
#	7 <sup>th</sup> digit	Capacitance tolerance	± 10 % = K, ± 20 % = M, - 20 % / + 50 % = S				
###	10 <sup>th</sup> to 12 <sup>th</sup> digit	Lead configuration	see "General Information"				
<b>Example</b>	<b>HAU</b>	<b>101</b>	<b>K</b>	<b>BA</b>	<b>BFG</b>	<b>K</b>	<b>R</b>
	Series	Capacitance value	Tolerance code	Voltage code	Lead configuration	Internal code	RoHS compliant

MARKING			
 33p K 1 kV U	 ▼ n56 K	 2n2 S 1 kV	 ▼ HAX 10n S
HAU 10 pF to 330 pF HAZ 47 pF to 2.2 nF HAE 1.0 nF to 4.7 nF	HAU 470 pF to 680 pF HAZ 3.3 nF to 4.7 pF HAE 6.8 nF to 10 nF	HAX 2.2 nF to 6.8 nF	HAX 10 nF to 22 nF

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



## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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