

## Lower Voltage Ceramic Disc Capacitors 100 VDC to 1000 VDC

Fig. 1

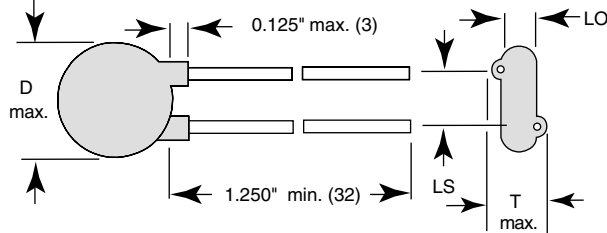
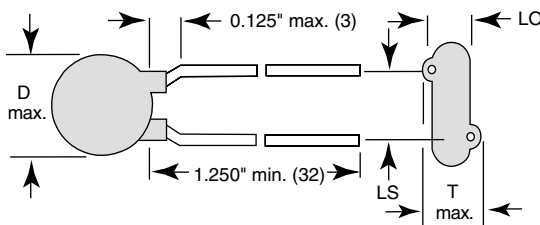


Fig. 2



LEAD OFFSET 'LO' (NOMINAL)	
100 VDC	0.040 (1.0 mm)
500 VDC	0.040 (1.0 mm)
1000 VDC	0.050 (1.3 mm)

### INSULATION RESISTANCE:

100 VDC: min. 500 ΩF or 10 000 MΩ  
 500 VDC: min. 750 ΩF or 15 000 MΩ  
 1000 VDC: min. 1000 ΩF or 20 000 MΩ

### TOLERANCE ON CAPACITANCE:

± 5 %; ± 10 %; ± 20 %

### DISSIPATION FACTOR:

100 VDC: 3.0 % max. at 1 kHz; 1 V  
 500 VDC: 3.0 % max. at 1 kHz; 1 V  
 1000 VDC: 2.5 % max. at 1 kHz; 1 V

### CATEGORY TEMPERATURE RANGE:

(- 55 to + 125) °C C0G, U2J, X7R, X7S  
 (- 25 to + 85) °C X5F, Y5U, Y5V, Z5U

### CLIMATIC CATEGORY ACC. TO EN60068-1:

55/125/21 C0G, U2J, X7R, X7S  
 25/085/21 X5F, Y5U, Y5V, Z5U

### OPERATING TEMPERATURE RANGE:

(- 55 to + 105) °C

### FEATURES

- Low losses
- High stability
- High capacitance in small size
- Complete Range of Capacitance Values



### APPLICATIONS

- Bypassing
- Resonant circuit
- Coupling

### DESIGN

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper or tinned copper clad steel having diameters of 0.020" (0.51 mm) or 0.025" (0.64 mm).

The capacitors may be supplied with radial kinked or straight leads having lead spacing of 0.250" (6.35 mm) or 0.375" (9.5 mm).

The standard tolerances are ± 10 % or ± 20 %.

Coating is made of resin coating or flammable resistant epoxy resin in accordance with "UL94V-0".

### CAPACITANCE RANGE:

10 pF to 0.15 μF

### RATED VOLTAGE:

100 VDC  
 500 VDC  
 1000 VDC

### DIELECTRIC STRENGTH BETWEEN LEADS:

Component test:

100 VDC 500 VDC, 2 s  
 500 VDC 1500 VDC, 2 s  
 1000 VDC 2500 VDC, 2 s

### CERAMIC DIELECTRIC:

C0G, U2J, (Class 1)  
 X5F, X7R, X7S, Y5U, Y5V, Z5U (Class 2)

# 561R, 562R & 565R Series



Vishay Cera-Mite

Lower Voltage Ceramic Disc Capacitors  
100 VDC to 1000 VDC

ORDERING INFORMATION, CERAMIC 100 VDC GENERAL PURPOSE								
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE	FIG.	WIRE SIZE		ORDERING CODE
						AWG	INCH (mm)	
<b>C0G (NP0)</b>								
10	± 5 %	0.250 (6.4)	0.156 (4.0)	0.197 (5.0)	1	24	0.020 (0.51)	561RTSQ10
22								561RTSQ22
<b>U2J (N750)</b>								
33	± 10 %	0.250 (6.4)	0.156 (4.0)	0.197 (5.0)	1	24	0.020 (0.51)	561RTSQ33
47								561RTSQ47
<b>X7R</b>								
100	± 10 %	0.250 (6.4)	0.156 (4.0)	0.197 (5.0)	1	24	0.020 (0.51)	562RTST10
220		0.250 (6.4)	0.156 (4.0)					562RTST22
330		0.250 (6.4)	0.156 (4.0)					562RTST33
470		0.250 (6.4)	0.156 (4.0)					562RTST47
1000		0.250 (6.4)	0.156 (4.0)			562RTSD10		
2200		0.370 (9.4)	0.156 (4.0)			562RTSD22		
3300		0.370 (9.4)	0.156 (4.0)			562RTSD33		
<b>X7S</b>								
4700	± 10 %	0.440 (11.2)	0.156 (4.0)	0.197 (5.0)	1	22	0.025 (0.64)	562RTSD47
6800		0.490 (12.4)	0.156 (4.0)					562RTSD68
0.01 µF		0.560 (14.2)	0.156 (4.0)					562RTSS10
0.022 µF	± 20 %	0.580 (14.7)	0.200 (5.1)	0.375 (9.5)				565RTSS22
<b>Z5U</b>								
0.005 µF	± 20 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	1	24	0.020 (0.51)	562RTGD50
0.01 µF		0.370 (9.4)	0.156 (4.0)			562RTGS10		
0.02 µF		0.440 (11.2)	0.156 (4.0)			562RTGS20		
0.047 µF		0.510 (13.0)	0.200 (5.1)	0.375 (9.5)		22	0.025 (0.64)	565RTGS47
0.050 µF		0.510 (13.0)	0.200 (5.1)					565RTGS50
0.10 µF		0.700 (17.8)	0.200 (5.1)					565RTGP10

## TAPE & REEL OPTIONS

- Tape & Reel available on diameter sizes 0.250" to 0.680"
- To specify T & R, add two letter suffix to the ordering code (Details of the packaging code see general selection of the catalog)



# 561R, 562R & 565R Series

Lower Voltage Ceramic Disc Capacitors  
100 VDC to 1000 VDC

Vishay Cera-Mite

ORDERING INFORMATION, CERAMIC 500 VDC GENERAL PURPOSE								
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE	FIG.	WIRE SIZE		ORDERING CODE
						AWG	INCH (mm)	
<b>X7R</b>								
1000	± 10 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.025 (0.64)	562R5TSD10
1500	± 10 %	0.370 (9.4)				562R5TSD15		
2200	± 10 %					562R5TSD22		
3300	± 10 %	0.440 (11.2)				1		562R5TSD33
4700	± 10 %	0.490 (12.4)				1		562R5TSD47
<b>X7S</b>								
0.0068 µF	± 10 %	0.490 (12.4)	0.156 (4.0)	0.250 (6.4)	1	22	0.025 (0.64)	562R5TSD68
0.010 µF	± 10 %	0.560 (14.2)	0.156 (4.0)	0.375 (9.5)				562R5TSS10
0.022 µF	± 20 %	0.680 (17.3)	0.200 (5.1)	0.375 (9.5)				562R5TSS22
0.033 µF	± 20 %	0.770 (19.6)	0.200 (5.1)	0.375 (9.5)				565R5TSS33
<b>Y5U</b>								
1000	± 20 %	0.250 (6.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	562R5TSSD10
<b>Y5V</b>								
0.10 µF	- 20 + 50 %	0.950 (24.1)	0.156 (4.0)	0.375 (9.5)	1	22	0.025 (0.64)	562R5HKSP10
<b>Z5U</b>								
5000	- 20 + 80 %	0.370 (9.4)	0.156 (4.0)	0.250 (6.4)	1	22	0.025 (0.64)	562R5TSD50
0.010 µF	± 20 %	0.440 (11.2)						562R5GASS10
0.010 µF	- 20 + 80 %							562R5HKSS10
0.020 µF	± 20 %	0.560 (14.2)	0.156 (4.0)	0.375 (9.5)				562R5GASS20
0.050 µF	± 20 %	0.890 (22.6)	0.200 (5.1)	0.375 (9.5)				562R5GASS50
0.050 µF	- 20 + 80 %	0.680 (17.3)						565R5HKS50
0.10 µF	± 20 %							0.770 (19.6)
0.10 µF	- 20 + 80 %	565R5HKP10						
0.15 µF	- 20 + 50 %	0.900 (22.9)						
0.20 µF	± 20 %	0.950 (24.1)	565R5GAP20					

### TAPE & REEL OPTIONS

- Tape & Reel available on diameter sizes 0.250" to 0.680" (Except 565R series)
- To specify T & R, add two letter suffix to the ordering code (Details of the packaging code see general selection of the catalog)

# 561R, 562R & 565R Series



Vishay Cera-Mite

Lower Voltage Ceramic Disc Capacitors  
100 VDC to 1000 VDC

ORDERING INFORMATION, CERAMIC 1000 VDC GENERAL PURPOSE														
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE	FIG.	WIRE SIZE		ORDERING CODE						
						AWG	INCH (mm)							
<b>COG (NP0)</b>														
10	± 20 %	0.250 (6.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	561R5GAQ10						
20								561R5GAQ20						
<b>U2J (N750)</b>														
33	± 20 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	561R5GAQ33						
47								561R5GAQ47						
<b>X5F</b>														
100	± 20 %	0.250 (6.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	562R5GAT10						
150								562R5GAT15						
200								562R5GAT20						
220								562R5GAT22						
330								562R5GAT33						
470								562R5GAT47						
500								562R5GAT50						
<b>X7R</b>														
1000	± 20 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	562R5GAD10						
<b>Y5U</b>														
1000	+ 100 - 0 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	562R5HKD10						
<b>Z5U</b>														
1200	± 20 %	0.290 (7.4)	0.156 (4.0)	0.250 (6.4)	2	24	0.020 (0.51)	562R5GAD12						
1500								562R5GAD15						
2000								562R5GAD20						
2200								562R5GAD22						
2500								562R5GAD25						
2700								562R5GAD27						
3000								562R5GAD30						
3300								562R5GAD33						
4700								0.370 (9.4)	0.156 (4.0)	0.250 (6.4)	1	22	0.025 (0.64)	562R5GAD47
5000								0.370 (9.4)	0.156 (4.0)	0.250 (6.4)				562R5GAD50
6800								0.440 (11.2)	0.156 (4.0)	0.250 (6.4)				562R5GAD68
8200								0.440 (11.2)	0.156 (4.0)	0.250 (6.4)				562R5GAD82
0.010 μF								0.490 (12.4)	0.156 (4.0)	0.375 (9.5)				562R5GAS10
0.010 μF								0.490 (12.4)	0.156 (4.0)	0.250 (6.4)				562R5HKMS10
0.010 μF	+ 100 - 0 %	0.490 (12.4)	0.156 (4.0)	0.375 (9.5)	562R5HKS10									
0.015 μF	± 20 %	0.560 (14.2)	0.156 (4.0)	0.375 (9.5)	562R5GAS15									
0.020 μF		0.680 (17.3)	0.156 (4.0)	0.375 (9.5)	562R5GAS20									
0.050 μF		0.770 (19.6)	0.200 (5.1)	0.375 (9.5)	565R10HKS50									
0.10 μF		0.950 (24.1)	0.200 (5.1)	0.375 (9.5)	565R10GAP10									
<b>Y5V</b>														
0.15 μF	± 20 %	0.950 (24.1)	0.200 (5.1)	0.375 (9.5)	1	22	0.025 (0.64)	565R10GAP15						

## TAPE & REEL OPTIONS

- Tape & Reel available on diameter sizes 0.250" to 0.680"
- To specify T & R, add two letter suffix to the ordering code (Details of the packaging code see general selection of the catalogue)



## Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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