

Lower Voltage Ceramic Disc Capacitors 2 kV_{DC} to 7.5 kV_{DC}



FEATURES

- Low losses
- High capacitance in small sizes
- High stability
- Radial leads
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

APPLICATIONS

- Lighting ballasts
- SMPS
- DC and pulse high voltage

DESIGN

The capacitors consist of a ceramic disc of which both sides are silver-plated. Connection leads are made of tinned copper having diameters of 0.025" (0.64 mm) or 0.032" (0.81 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) or 0.500" (12.7 mm).

The standard tolerances are $\pm 10\%$ or $\pm 20\%$.

Coating is made of resin coating or flame retardant epoxy resin in accordance with "UL 94 V-0".

CAPACITANCE RANGE

10 pF to 0.10 μ F

RATED VOLTAGE

2 kV_{DC}
3 kV_{DC}
6 kV_{DC}
7.5 kV_{DC}

DIELECTRIC STRENGTH BETWEEN LEADS

Component test:

2 kV_{DC} 3500 V_{DC}, 2 s
3 kV_{DC} 5000 V_{DC}, 2 s
6 kV_{DC} 10 500 V_{DC}, 2 s
7.5 kV_{DC} 11 250 V_{DC}, 2 s

CERAMIC DIELECTRIC

C0G, U2J, R3L (Class 1)
X7R, X5F, X5S, Y5S, Y5U, Y5V, Z5U (Class 2)

LEAD OFFSET "LO"	
NOMINAL	~ THICKNESS - 0.100"
EXCEPTION	0.07" (1.8 mm) -565R20GAP10
	0.08" (2.0 mm) -565R30GASS20
	0.10" (2.54 mm) -565R30GASS33

QUICK REFERENCE DATA						
DESCRIPTION	VALUE					
Ceramic Class	1	1	2	2	2	2
Ceramic Dielectric	U2J, R3L	C0G, U2J, R3L	X7R, Y5S, Y5U, Z5U, Y5V	X7R, Y5S, Y5U, Z5U, Y5V	X5F, X5S, Y5U, Z5U	X5F, Y5U, Z5U
Voltage (V _{DC})	3000	6000	2000	3000	6000	7500
Min. Capacitance (pF)	10	10	100	47	100	100
Max. Capacitance (pF)	33	47	100 000	10 000	10 000	2500
Mounting	Through hole					

INSULATION RESISTANCE

2 kV_{DC} min. 10 000 M Ω
3 kV_{DC} min. 50 000 M Ω
6 kV_{DC} min. 75 000 M Ω
7.5 kV_{DC} min. 200 000 M Ω

TOLERANCE ON CAPACITANCE

$\pm 10\%$, $\pm 20\%$, - 20 % to + 80 %

DISSIPATION FACTOR

0.2 % max. at 1 MHz; 1 V
2.0 % max. at 1 kHz; 1 V

CATEGORY TEMPERATURE RANGE

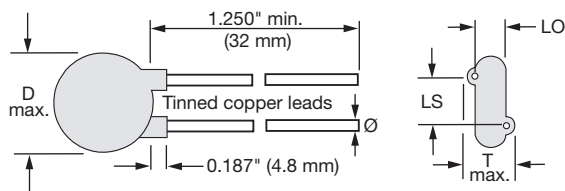
- 25 °C to + 85 °C

CLIMATIC CATEGORY ACC. TO EN60068-1

25/085/21

OPERATING TEMPERATURE RANGE

- 25 °C to + 105 °C

DIMENSIONS in inches (millimeters)

ORDERING INFORMATION, CERAMIC 2 kV_{DC}

C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm)	WIRE SIZE		ORDERING CODE		
X7R									
100	± 10	0.330 (8.4)	0.190 (4.8)	0.250 (6.4)	20	0.032 (0.81)	564R20TST10		
220			0.180 (4.6)				564R20TST22		
330							564R20TST33		
470			0.170 (4.3)				564R20TST47		
560			0.185 (4.7)				564R20TST56		
680			0.170 (4.3)				564R20TST68		
1000		0.400 (10.2)	0.175 (4.4)				564R20TSD10		
1500		0.430 (10.9)	0.160 (4.1)				564R20TSD15		
1800		0.460 (11.7)	0.170 (4.3)				564R20TSD18		
2200							564R20TSD22		
2700							564R20TSD27		
3300		0.530 (13.5)	0.160 (4.1)				564R20TSD33		
3900							564R20TSD39		
4700		0.680 (17.3)	0.170 (4.3)	564R20TSD47					
Y5S									
1000	± 20	0.330 (8.4)	0.175 (4.4)	0.250 (6.4)	20	0.032 (0.81)	564R20TSSD10		
1500		0.400 (10.2)	0.170 (4.3)				564R20TSSD15		
1800		0.430 (10.9)					564R20TSSD18		
2200		0.460 (11.7)					564R20TSSD22		
2700		0.530 (13.5)	0.175 (4.4)				564R20TSSD27		
3300							564R20TSSD33		
3900							564R20TSSD39		
4700		564R20TSSD47							
5600		0.680 (17.3)	0.375 (9.5)	564R20TSSD56					
6800		0.720 (18.3)		564R20TSSD68					
Y5U									
1000	± 20	0.330 (8.4)	0.170 (4.3)	0.250 (6.4)	20	0.032 (0.81)	564R20GAD10		
1500		0.330 (8.4)	0.170 (4.3)				564R20GAD15		
Z5U									
1800	± 20	0.360 (9.1)	0.170 (4.3)	0.250 (6.4)	20	0.032 (0.81)	564R20GAD18		
2200		0.400 (10.2)	0.175 (4.4)				564R20GAD22		
2700		0.430 (10.9)					564R20GAD27		
3300							564R20GAD33		
3900		0.490 (12.4)	0.170 (4.3)				564R20GAD39		
4700				564R20GAD47					
6800		0.560 (14.2)		564R20GAD68					
0.010 μF			0.680 (17.3)				0.375 (9.5)		564R20GAS10
Y5V									
0.01 μF	± 20	0.620 (15.7)	0.170 (4.3)	0.375 (9.5)	20	0.032 (0.81)	564R20GASS10		
0.05 μF		0.950 (24.1)	0.174 (4.4)		20		564R20GAS50		
0.10 μF		0.950 (24.1)	0.240 (6.1)		22	0.025 (0.64)	565R20GAP10		

TAPE AND REEL OPTIONS

To specify tape and reel, add two letter suffix to the ordering code (for details of the packaging code see general section of the catalog).



ORDERING INFORMATION, CERAMIC 3 kV _{DC}								
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm)	WIRE SIZE		ORDERING CODE	
U2J (N750)								
10	± 20	0.330 (8.4)	0.210 (5.3)	0.250 (6.4)	20	0.032 (0.81)	564R30GAQ10	
12			0.210 (5.3)				564R30GAQ12	
15			0.180 (4.6)				564R30GAQ15	
R3L (N2200)								
22	± 20	0.330 (8.4)	0.200 (5.1)	0.250 (6.4)	20	0.032 (0.81)	564R30GAQ22	
27			0.190 (4.8)				564R30GAQ27	
33			0.170 (4.3)				564R30GAQ33	
X7R								
47	± 20	0.330 (8.4)	0.230 (5.8)	0.250 (6.4)	20	0.032 (0.81)	564R30GAQ47	
56			0.190 (4.8)				564R30GAQ56	
68			0.200 (5.1)				564R30GAQ68	
100			0.180 (4.6)				564R30GAT10	
150			0.190 (4.8)				564R30GAT15	
220			0.175 (4.4)				564R30GAT22	
270			0.180 (4.6)				564R30GAT27	
330			0.175 (4.4)				564R30GAT33	
390							564R30GAT39	
470			0.180 (4.6)				564R30GAT47	
680	± 10	0.400 (10.2)	0.180 (4.6)	0.375 (9.5)	20	0.032 (0.81)	564R30TST68	
1000			0.175 (4.4)				564R30TSD10	
1500		0.490 (12.5)	564R30TSD15					
1800		0.530 (13.5)	0.185 (4.7)				564R30TSD18	
2200			0.180 (4.6)				564R30TSD22	
2700		0.620 (15.7)	0.185 (4.7)				564R30TSD27	
3300			0.170 (4.3)				564R30TSD33	
3900		0.720 (18.3)	0.185 (4.7)				564R30TSD39	
4700			0.175 (4.4)				564R30TSD47	
6800		0.900 (22.9)	0.185 (4.7)				564R30TSD68	
Y5S								
1000	± 20	0.400 (10.2)	0.190 (4.8)	0.250 (6.4)	20	0.032 (0.81)	564R30TSSD10	
1500		0.460 (11.7)					564R30TSSD15	
1800		0.490 (12.4)					564R30TSSD18	
2200		0.530 (13.5)					564R30TSSD22	
2700		0.560 (14.2)	0.185 (4.7)	564R30TSSD27				
3300		0.620 (15.7)		564R30TSSD33				
3900		0.680 (17.3)		564R30TSSD39				
4700		0.790 (20.0)		564R30TSSD47				
5600		0.900 (22.9)	0.190 (4.8)	564R30TSSD56				
6800		0.900 (22.9)	0.205 (5.2)	564R30TSSD68				
Y5U								
680	± 20	0.330 (8.4)	0.175 (4.4)	0.250 (6.4)	20	0.032 (0.81)	564R30GAT68	
Z5U								
1000	± 20	0.330 (8.4)	0.195 (5.0)	0.250 (6.4)	20	0.032 (0.81)	564R30GAD10	
1500		0.360 (9.1)	0.190 (4.8)				564R30GAD15	
1800		0.400 (10.2)					564R30GAD18	
2200		0.430 (10.9)					564R30GAD22	
2700		0.460 (11.7)	0.200 (5.1)	564R30GAD27				
3300		0.490 (12.4)	0.185 (4.7)	564R30GAD33				
3900		0.530 (13.5)		564R30GAD39				
4700		0.620 (15.7)	0.195 (5.0)	564R30GAD47				
6800		0.680 (17.3)	0.185 (4.7)	564R30GAD68				
8200				564R30GAD82				
0.010 μF		0.720 (18.3)	0.265 (6.7)	22			0.025 (0.64)	564R30GAS10
0.020 μF		0.720 (18.3)						565R30GASS20
0.033 μF		0.900 (22.9)						0.240 (6.1)
Y5V								
0.010 μF	± 20	0.720 (18.3)	0.185 (4.7)	0.375 (9.5)	20	0.032 (0.81)	564R30GASS10	

TAPE AND REEL OPTIONS

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ORDERING INFORMATION, CERAMIC 6 kV _{DC}							
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm)	WIRE SIZE		ORDERING CODE
C0G (NP0)							
10	± 20	0.400 (10.2)	0.220 (5.6)	0.375 (9.5)	20	0.032 (0.81)	564R60GAQ10
U2J (N750)							
22	± 20	0.460 (11.7)	0.240 (6.1)	0.375 (9.5)	20	0.032 (0.81)	564R60GAQ22
R3L (N2200)							
33	± 20	0.400 (10.2)	0.230 (5.8)	0.375 (9.5)	20	0.032 (0.81)	564R60GAQ33
47		0.460 (11.7)	0.205 (5.2)				564R60GAQ47
X5F							
100	± 20	0.400 (10.2)	0.240 (6.1)	0.375 (9.5)	20	0.032 (0.81)	564R60GAT10
220			0.265 (6.7)				564R60GAT22
X5S							
330	± 20	0.400 (10.2)	0.260 (6.6)	0.375 (9.5)	20	0.032 (0.81)	564R60GAT33
Y5U							
470	± 20	0.400 (10.2)	0.265 (6.7)	0.375 (9.5)	20	0.032 (0.81)	564R60GAT47
560			0.240 (6.1)				564R60GAT56
Z5U							
1000	± 20	0.400 (10.2)	0.270 (6.9)	0.375 (9.5)	20	0.032 (0.81)	564R60GAD10
1500		0.460 (11.7)	0.280 (7.1)				564R60GAD15
2200		0.530 (13.5)	0.240 (6.1)				564R60GAD22
3300		0.620 (15.7)	0.260 (6.6)				564R60GAD33
4700		0.790 (20.0)					564R60GAD47
0.010 μF		0.950 (24.1)	0.250 (6.4)				564R60GAS10

ORDERING INFORMATION, CERAMIC 7.5 kV _{DC}							
C (pF)	TOL. (%)	D DIAMETER INCH (mm)	T THICKNESS INCH (mm)	LS LEAD SPACE INCH (mm)	WIRE SIZE		ORDERING CODE
X5F							
100	± 20	0.530 (13.5)	0.310 (7.9)	0.500 (12.7)	20	0.032 (0.81)	564R75GAT10
470		0.620 (15.7)	0.270 (6.9)				564R75GAT47
Y5U							
1000	+ 80/- 20	0.620 (15.7)	0.320 (8.1)	0.500 (12.7)	20	0.032 (0.81)	564R75GAD10
Z5U							
2500	+ 80/- 20	0.620 (15.7)	0.280 (7.1)	0.500 (12.7)	20	0.032 (0.81)	564R75GAD25



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