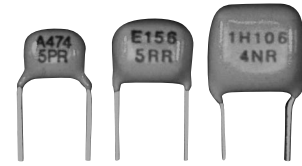




DIPPED RADIAL LEAD MULTILAYER CERAMIC CAPACITORS

Upgrade!

NTD Series



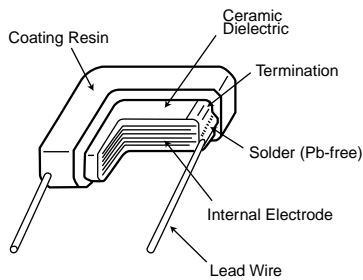
◆FEATURES

1. Small in size and wide capacitance range.
Max. 33 μ F is available.
2. Temperature characteristic is X7R in EIA code.
3. Superior humidity characteristic and long life.
4. Excellent high frequency characteristic due to low ESR.
5. High rated ripple current.
6. 250V_{dc} items are available.
7. Resin(UL94 V-0) used for coating.
8. Pb-free design(also ceramic dielectric)

◆APPLICATIONS

1. Smoothing circuit of switching mode AC-DC or DC-DC converter.
2. Noise suppressor for various kinds of equipments.
3. By-pass or decoupling circuits.
4. Automotive equipments.

◆CONSTRUCTION



◆RATINGS

1. Category Temperature Range	-55 to +125°C
2. Rated Voltage Range	25, 50, 100, 250 V _{dc}
3. Rated Capacitance Range	0.1 to 33 μ F
4. Rated Capacitance Tolerance	M(\pm 20%)
5. Temperature Characteristics	X7R
6. Rated Ripple Current	See No.5 on the following table

◆SPECIFICATIONS

No.	Items	Specification	Test Condition						
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds. (Only 250V _{dc} products : 475V)						
	Between Terminals								
	Terminals to Coating Resin								
2	Insulation Resistance	100/C _R (M Ω) or 4000(M Ω) whichever is less.	Rated voltage shall be applied for 60 \pm 5 seconds at temperature 25 \pm 2°C.						
3	Rated Capacitance	Within specified tolerance.	<table border="1"> <tr> <td></td> <td>C_R \leq 10μF</td> <td>C_R > 10μF</td> </tr> <tr> <td>Temperature</td> <td colspan="2">25\pm2°C</td> </tr> </table>		C _R \leq 10 μ F	C _R > 10 μ F	Temperature	25 \pm 2°C	
	C _R \leq 10 μ F	C _R > 10 μ F							
Temperature	25 \pm 2°C								
4	Dissipation Factor	5.0% maximum.	Frequency	1 \pm 0.1kHz	120 \pm 12Hz				
			Voltage	1 \pm 0.2V _{rms}	0.5 \pm 0.2V _{rms}				



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◆ SPECIFICATIONS

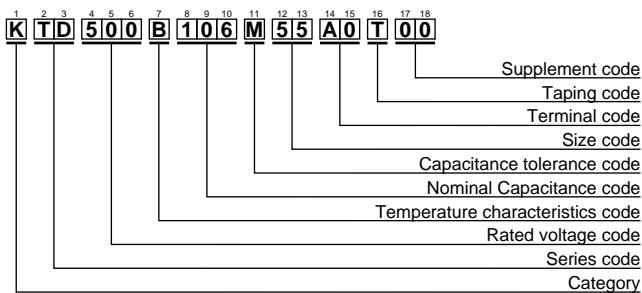
No.	Items	Specification	Test Condition															
5	Rated Ripple Current	Size code	32 43 55															
		Arms	0.3 0.8 1.0															
			10kHz to 1MHz (sine curve) Ripple voltage V_p shall be less than the rated voltage.															
6	Robustness of Terminations	No visible damage.	The force applied shall be :															
	Tension		<table border="1"> <thead> <tr> <th>Lead ϕ (mm)</th> <th>Tensile(N)</th> <th>(sec.)</th> </tr> </thead> <tbody> <tr> <td>0.5 max.</td> <td>5</td> <td>10\pm1</td> </tr> </tbody> </table>	Lead ϕ (mm)	Tensile(N)	(sec.)	0.5 max.	5	10 \pm 1									
Lead ϕ (mm)	Tensile(N)	(sec.)																
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	Bending		<table border="1"> <thead> <tr> <th>Lead ϕ (mm)</th> <th>Bending(N)</th> <th>(kg)</th> </tr> </thead> <tbody> <tr> <td>0.5 max.</td> <td>2.5</td> <td>0.25</td> </tr> </tbody> </table>	Lead ϕ (mm)	Bending(N)	(kg)	0.5 max.	2.5	0.25									
Lead ϕ (mm)	Bending(N)	(kg)																
0.5 max.	2.5	0.25																
			Time : 2times.															
7	Vibration	Appearance : No abnormality. Capacitance : To meet the initial specification. D.F. : To meet the initial specifications.	Amplitude : 1.5mm Frequency range : 10-55-10Hz (1 min) Direction and time : 2 hours each to X, Y, Z axis. Total 6 hours.															
8	Solderability	Min. 75% of surface of the termination shall be covered with new solder.	<table border="1"> <thead> <tr> <th>Solder</th> <th>Pb Free</th> <th>Eutectic</th> </tr> </thead> <tbody> <tr> <td>Solder Temperature</td> <td>245\pm5$^{\circ}$C</td> <td>235\pm5$^{\circ}$C</td> </tr> <tr> <td>Dipping Time</td> <td colspan="2">2\pm0.5sec.</td> </tr> </tbody> </table>	Solder	Pb Free	Eutectic	Solder Temperature	245 \pm 5 $^{\circ}$ C	235 \pm 5 $^{\circ}$ C	Dipping Time	2 \pm 0.5sec.							
Solder	Pb Free	Eutectic																
Solder Temperature	245 \pm 5 $^{\circ}$ C	235 \pm 5 $^{\circ}$ C																
Dipping Time	2 \pm 0.5sec.																	
9	Resistance to Soldering Heat	Appearance : No abnormality. $\Delta C/C$: $\pm 15\%$ D.F. : Satisfy the initial spec.	Solder Temperature : 350 \pm 10 $^{\circ}$ C Dipping Time : 3 \pm 0.5 sec. Depth : 1.5 to 2mm															
10	Temperature Cycle	Appearance : No abnormality. $\Delta C/C$: $\pm 15\%$ D.F. : To meet the initial specification I.R. : To meet the initial specification	<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature ($^{\circ}$C)</th> <th>(min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. Category temperature ± 3</td> <td>30± 3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>3 max.</td> </tr> <tr> <td>3</td> <td>Max. Category temperature ± 3</td> <td>30± 3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>3 max.</td> </tr> </tbody> </table>	Step	Temperature ($^{\circ}$ C)	(min.)	1	Min. Category temperature ± 3	30 ± 3	2	Room temperature	3 max.	3	Max. Category temperature ± 3	30 ± 3	4	Room temperature	3 max.
Step	Temperature ($^{\circ}$ C)	(min.)																
1	Min. Category temperature ± 3	30 ± 3																
2	Room temperature	3 max.																
3	Max. Category temperature ± 3	30 ± 3																
4	Room temperature	3 max.																
			For 5 cycles for above temperature cycle.															
11	Humidity Load Life	Appearance : No abnormality. $\Delta C/C$: $\pm 20\%$ D.F. : 10% maximum I.R. : 25/ C_R (M Ω) or 1000(M Ω) whichever is less.	Temperature : 40 $\pm 2^{\circ}$ C Humidity : 90 to 95%RH Voltage : Rated voltage Time : 500 $\pm 24_0$ hours															
12	Endurance	Appearance : No abnormality. $\Delta C/C$: $\pm 20\%$ D.F. : 10% maximum I.R. : 50/ C_R (M Ω) or 1000(M Ω) whichever is less.	Temperature : 125 $\pm 3^{\circ}$ C Voltage : Rated voltage Time : 1000 $\pm 48_0$ hours															

* C_R : Rated Capacitance(μ F)

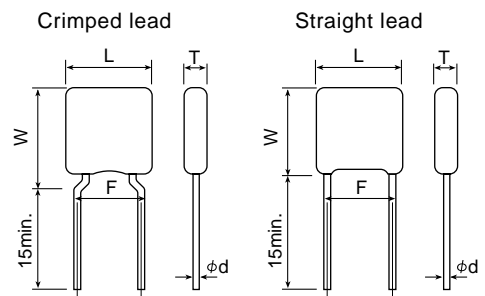
◆STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)					Maximum ripple current (Arms)	Part Number						
		Lmax.	Wmax.	Tmax.	F±0.8	φ±0.05								
25	3.3	5.0	6.0	3.5	5.0	0.5	0.3	KTD250B335M32A0T00						
	4.7							KTD250B475M32A0T00						
	6.8							KTD250B685M43A0T00						
	10	6.5	6.5	4.0	5.0	0.5	0.8	KTD250B106M43A0T00						
	15							KTD250B156M43A0T00						
	15							KTD250B156M55A0T00						
	22							KTD250B226M55A0T00						
	33							KTD250B336M55A0T00						
50	1.0	5.0	6.0	3.5	5.0	0.5	0.3	KTD500B105M32A0T00						
	1.5							KTD500B155M32A0T00						
	2.2							KTD500B225M32A0T00						
	3.3							KTD500B335M32A0T00						
	4.7	6.5	6.5	4.0	5.0	0.5	0.8	KTD500B475M43A0T00						
	6.8							KTD500B685M43A0T00						
	10							KTD500B106M55A0T00						
	15	7.5	9.0	4.5	5.0	0.5	1.0	KTD500B156M55A0T00						
	100	0.33	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B334M32A0T00					
0.47		KTD101B474M32A0T00												
0.68		KTD101B684M32A0T00												
1		KTD101B105M32A0T00												
1.5		KTD101B155M32A0T00												
2.2		KTD101B225M32A0T00												
1.5		6.5	6.5	4.0	5.0	0.5	0.8	KTD101B155M43A0T00						
2.2								KTD101B225M43A0T00						
3.3								KTD101B335M43A0T00						
4.7								KTD101B475M43A0T00						
3.3								KTD101B335M55A0T00						
4.7		7.5	9.0	4.5	5.0	0.5	1.0	KTD101B475M55A0T00						
6.8				4.7				KTD101B685M55A0T00						
0.1				KTD251B104M32A0T00										
250		0.15	5.0	6.0	3.5	5.0	0.5	0.3	KTD251B154M32A0T00					
	0.22	KTD251B224M32A0T00												
	0.33	KTD251B334M32A0T00												
	0.47	KTD251B474M32A0T00												
	0.68	6.5	6.5	4.0	5.0	0.5	0.8	KTD251B684M43A0T00						
	1							KTD251B105M55A0T00						
	1.5							7.5	9.0	4.5	5.0	0.5	1.0	KTD251B155M55A0T00

◆PART NUMBERING SYSTEM



◆DIMENSIONS



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