

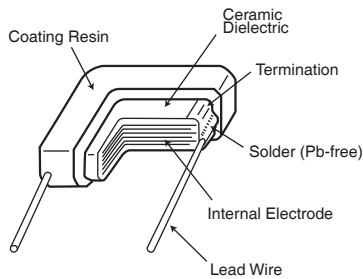
◆FEATURES

1. Small in size and wide capacitance range.
Max. 470 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. 500V_{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, 35, 50, 100, 250, 500V _{dc}
3. Rated Capacitance Range	0.1 to 470 μ F
4. Rated Capacitance Tolerance	M(\pm 20%), K(\pm 10%)
5. Temperature Characteristics	X7R
6. Rated Ripple Current	See No.5 on the following table

◆SPECIFICATIONS

No.	Items		Specification	Test Condition		
1	Withstand Voltage	Between Terminals	No abnormality.	Rated voltage	Withstand voltage	
		Terminals to Coating Resin		Less than 250V	250% of rated voltage	
	More than 250V Less than 500V			100V + 150% of rated voltage		
	More than 500V			130% of rated voltage		
Shall be applied for 5 seconds.						
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.		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}

As customer requirement, Chemi-Con has submits the test results according to AEC-Q200 for Multilayer ceramic capacitors. Please contact us for more information.



DIPPED RADIAL LEAD MULTILAYER CERAMIC CAPACITORS

NTD Series

◆ SPECIFICATIONS

No.	Items	Specification	Test Condition															
5	Rated Ripple Current	See STANDARD RATINGS	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 : <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> <tr> <td>0.6 min.</td> <td>10</td> <td>10\pm1</td> </tr> </tbody> </table>	Lead ϕ (mm)	Tensile(N)	(sec.)	0.5 max.	5	10 \pm 1	0.6 min.	10	10 \pm 1						
	Lead ϕ (mm)		Tensile(N)	(sec.)														
0.5 max.	5	10 \pm 1																
0.6 min.	10	10 \pm 1																
	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> <tr> <td>0.6 min.</td> <td>5</td> <td>0.51</td> </tr> </tbody> </table> Time : 2times.	Lead ϕ (mm)	Bending(N)	(kg)	0.5 max.	2.5	0.25	0.6 min.	5	0.51						
Lead ϕ (mm)	Bending(N)	(kg)																
0.5 max.	2.5	0.25																
0.6 min.	5	0.51																
7	Vibration	Appearance : No abnormality. Capacitance : To meet the initial specification. D.F. : To meet the initial specification.	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> </tr> </thead> <tbody> <tr> <td>Solder Temperature</td> <td>245\pm5$^{\circ}$C</td> </tr> <tr> <td>Dipping Time</td> <td>2\pm0.5sec.</td> </tr> </tbody> </table>	Solder	Pb Free	Solder Temperature	245 \pm 5 $^{\circ}$ C	Dipping Time	2 \pm 0.5sec.									
Solder	Pb Free																	
Solder Temperature	245 \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. : To meet the initial specification. I.R. : To meet the initial specification.	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\pm3</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\pm3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>3 max.</td> </tr> </tbody> </table> For 5 cycles for above temperature cycle.	Step	Temperature ($^{\circ}$ C)	(min.)	1	Min. Category temperature ± 3	30 \pm 3	2	Room temperature	3 max.	3	Max. Category temperature ± 3	30 \pm 3	4	Room temperature	3 max.
Step	Temperature ($^{\circ}$ C)	(min.)																
1	Min. Category temperature ± 3	30 \pm 3																
2	Room temperature	3 max.																
3	Max. Category temperature ± 3	30 \pm 3																
4	Room temperature	3 max.																
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 $\frac{24}{0}$ 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 $\frac{48}{0}$ hours															

* C_R : Rated Capacitance(μ F)



DIPPED RADIAL LEAD MULTILAYER CERAMIC CAPACITORS

NTD Series

◆ STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Electrostatic Capacitance Temperature Characteristics	Dimensions(mm)					Maximum ripple current (Arms)	Part Number	Taping Quantity per reel (pcs. / reel)
			L max.	W max.	T max.	F±0.8	φd±0.05			
25	3.3	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD250B335□32A0T00	2,000
	4.7	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD250B475□32A0T00	2,000
	6.8	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD250B685□43A0T00	2,000
	10	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD250B106□43A0T00	2,000
	15	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD250B156□43A0T00	2,000
	15	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD250B156□55A0T00	2,000
	22	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD250B226□55A0T00	2,000
	33	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD250B336□55A0T00	2,000
	47	X7R	10.0	11.5	5.5	5.0	0.5	1.5	KTD250B476□76A0T00	1,000
	68	X7R	13.5	15.0	6.0	10.0	0.6	2.0	KTD250B686M80A0B00	—
	100	X7R	13.5	15.0	8.0	10.0	0.6	2.0	KTD250B107M80A0B00	—
	150	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD250B157M90A0B00	—
220	X7R	22.5	20.0	8.0	20.0	0.8	3.0	KTD250B227M90A0B00	—	
330	X7R	28.5	20.0	8.0	25.0	0.8	4.0	KTD250B337M99A0B00	—	
470	X7R	28.5	20.0	11.5	25.0	0.8	4.0	KTD250B477M99A0B00	—	
35	3.3	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD350B335□32A0T00	2,000
	4.7	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD350B475□32A0T00	2,000
	6.8	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD350B685□43A0T00	2,000
	10	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD350B106□43A0T00	2,000
	15	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD350B156□55A0T00	2,000
	22	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD350B226□55A0T00	2,000
	33	X7R	10.0	11.5	5.0	5.0	0.5	1.5	KTD350B336□76A0T00	1,000
	47	X7R	10.0	11.5	5.5	5.0	0.5	1.5	KTD350B476□76A0T00	1,000
50	1.0	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD500B105□32A0T00	2,000
	1.5	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD500B155□32A0T00	2,000
	2.2	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD500B225□32A0T00	2,000
	3.3	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD500B335□32A0T00	2,000
	4.7	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD500B475□43A0T00	2,000
	6.8	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD500B685□43A0T00	2,000
	10	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD500B106□55A0T00	2,000
	15	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD500B156□55A0T00	2,000
	22	X7R	10.0	11.5	5.0	5.0	0.5	1.5	KTD500B226□76A0T00	1,500
	33	X7R	13.5	15.0	5.5	10.0	0.6	2.0	KTD500B336M80A0B00	—
	47	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD500B476M90A0B00	—
	68	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD500B686M90A0B00	—
	100	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD500B107M90A0B00	—
	150	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD500B157M99A0B00	—
	220	X7R	28.5	20.0	10.0	25.0	0.8	4.0	KTD500B227M99A0B00	—
100	0.33	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B334□32A0T00	2,000
	0.47	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B474□32A0T00	2,000
	0.68	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B684□32A0T00	2,000
	1.0	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B105□32A0T00	2,000
	1.5	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B155□32A0T00	2,000
	2.2	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD101B225□32A0T00	2,000
	1.5	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD101B155□43A0T00	2,000
	2.2	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD101B225□43A0T00	2,000
	3.3	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD101B335□43A0T00	2,000
	4.7	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD101B475□43A0T00	2,000
	3.3	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD101B335□55A0T00	2,000
	4.7	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD101B475□55A0T00	2,000
	6.8	X7R	7.5	9.0	4.7	5.0	0.5	1.0	KTD101B685□55A0T00	2,000
	6.8	X7R	10.0	11.5	5.0	5.0	0.5	1.5	KTD101B685□76A0T00	1,500
	10	X7R	13.5	15.0	5.0	10.0	0.6	2.0	KTD101B106M80A0B00	—
	15	X7R	13.5	15.0	6.0	10.0	0.6	2.0	KTD101B156M80A0B00	—
	22	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD101B226M90A0B00	—
	33	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD101B336M90A0B00	—
	47	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD101B476M99A0B00	—
	68	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD101B686M99A0B00	—
100	X7R	28.5	20.0	9.0	25.0	0.8	4.0	KTD101B107M99A0B00	—	

NTD Series

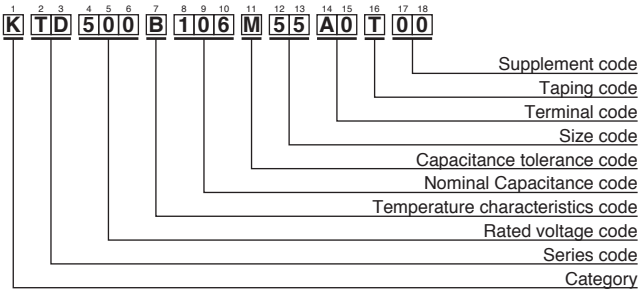
◆ STANDARD RATINGS

Rated voltage (Vdc)	Rated Capacitance (μF)	Electrostatic Capacitance Temperature Characteristics	Dimensions(mm)					Maximum ripple current (Arms)	Part Number	Taping Quantity per reel (pcs./reel)
			L max.	W max.	T max.	F±0.8	φd±0.05			
250	0.1	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD251B104□32A0T00	2,000
	0.15	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD251B154□32A0T00	2,000
	0.22	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD251B224□32A0T00	2,000
	0.33	X7R	5.0	6.0	3.5	5.0	0.5	0.3	KTD251B334□32A0T00	2,000
	0.47	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD251B474□43A0T00	2,000
	0.68	X7R	6.5	6.5	4.0	5.0	0.5	0.8	KTD251B684□43A0T00	2,000
	1.0	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD251B105□55A0T00	2,000
	1.5	X7R	7.5	9.0	4.5	5.0	0.5	1.0	KTD251B155□55A0T00	2,000
	2.2	X7R	10.0	11.5	6.0	5.0	0.5	1.5	KTD251B225□76A0T00	1,000
	2.2	X7R	13.5	15.0	5.0	10.0	0.6	2.0	KTD251B225M80A0B00	—
	3.3	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD251B335M90A0B00	—
	4.7	X7R	22.5	20.0	6.0	20.0	0.8	3.0	KTD251B475M90A0B00	—
	6.8	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD251B685M99A0B00	—
10	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD251B106M99A0B00	—	
15	X7R	28.5	20.0	7.5	25.0	0.8	4.0	KTD251B156M99A0B00	—	
500	0.47	X7R	7.5	9.0	3.5	5.0	0.5	0.8	KTD501B474□55A0T00	2,000
	0.56	X7R	7.5	9.0	3.5	5.0	0.5	0.8	KTD501B564□55A0T00	2,000
	0.68	X7R	10.0	11.5	3.4	5.0	0.5	1.0	KTD501B684□76A0T00	1,500
	1.0	X7R	10.0	11.5	3.8	5.0	0.5	1.0	KTD501B105□76A0T00	1,500
	1.2	X7R	10.0	11.5	4.2	5.0	0.5	1.0	KTD501B125□76A0T00	1,500

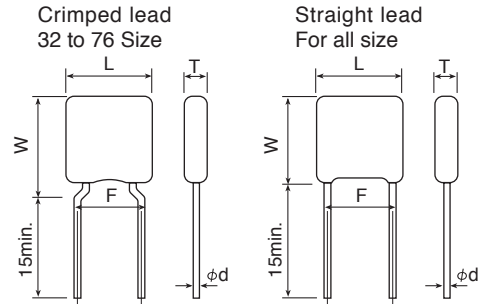
※ The square (□) in part numbers is replaced by a capacitance tolerance code: 'K' when ±10%, or 'M' when ±20%

※ Please consult with us when you consider the rating other than a standard table.

◆ PART NUMBERING SYSTEM



◆ DIMENSIONS



Please refer to "Part Numbering System" of the beginning of a catalog for the details.