

NTS Series / NTF Series

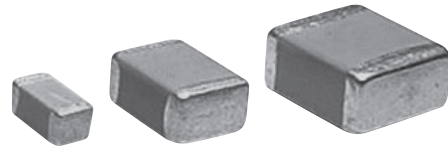
(General product)

Temperature cycle : 1000 cycles



◆FEATURES

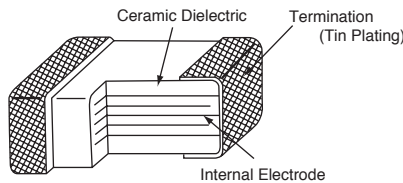
1. Large capacitance by small size.
2. X7R and X7S temperature characteristics.
3. High permissible ripple current capability.
4. NTF: Temperature cycle : 1000 cycles.



◆APPLICATIONS

1. Smoothing circuit of DC-DC converters.
2. On-board power supplies.
3. Voltage regulators for computers.
3. Noise suppressor for various kinds of equipments.
4. High reliability 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	0.010 to 47μF
4. Rated Capacitance Tolerance	M (±20%) : Standard, K (±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	No abnormality.	Rated voltage	Withstand voltage	
			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 (MΩ) or 4000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 25±2°C.		
3	Rated Capacitance	Within specified tolerance.	C _R ≤10μF	C _R >10μF	
			Temperature	25±2°C	
4	Dissipation Factor	X7R temperature characteristics of 5.0% or less X7S temperature characteristics of 7.5% or less	Frequency	1±0.1kHz	120±12Hz
			Voltage	1±0.2V _{rms}	0.5±0.2V _{rms}
			10kHz~1MHz (sine curve) Ripple voltage V _p shall be less than the rated voltage.		
5	Rated Ripple Current	See STANDARD RATINGS			

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

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◆SPECIFICATIONS

No.	Items	Specification	Test Condition															
6	Adhesion	No visible damage.	<p>Substrate</p> <p>5N (0.51kgf) for 10±1 seconds</p> <p>Capacitor</p>															
7	Bend strength of the face plating	Appearance : No visible damage. ΔC/C : ±15%	<p>The substrate shall be bend at a rate of 1mm/s for 5 seconds.</p> <p>Press</p> <p>Press bar</p> <p>Capacitor</p> <p>Substrate</p> <p>Bending capability*</p> <p>Support</p> <p>45±2mm</p> <p>45±2mm</p> <p>*Bending capability NTS : 1mm NTF : 1mm or 2mm</p>															
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±5°C</td> </tr> <tr> <td>Dipping Time</td> <td>2±0.5sec.</td> </tr> </tbody> </table>	Solder	Pb Free	Solder Temperature	245±5°C	Dipping Time	2±0.5sec.									
Solder	Pb Free																	
Solder Temperature	245±5°C																	
Dipping Time	2±0.5sec.																	
9	Resistance to Soldering Heat	Appearance : No visible damage. ΔC/C : ±15% D.F. : To meet the initial specification. I.R. : To meet the initial specification.	<p>Preheating Condition :</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>100±10°C</td> <td>2min.</td> </tr> <tr> <td>2</td> <td>200±10°C</td> <td>2min.</td> </tr> </tbody> </table> <p>Solder Temperature : 260±5°C Dipping Time : 2±0.5 seconds</p>	Step	Temperature	Time	1	100±10°C	2min.	2	200±10°C	2min.						
Step	Temperature	Time																
1	100±10°C	2min.																
2	200±10°C	2min.																
10	Temperature Cycle	Appearance : No visible damage. ΔC/C : ±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 (°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> <p>For above temperature cycle. NTS : For 5 cycles NTF : For 1000 cycles</p>	Step	Temperature (°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 (°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.																
11	Humidity Load Life	Appearance : No abnormality. ΔC/C : ±15% I.R. : 25/C _R (MΩ) or 1000(MΩ) whichever is less. Dissipation Factor X7R temperature characteristics D.F: 10% or less X7S temperature characteristics D.F: 15% or less	<p>Temperature : 40±2°C Humidity : 90 to 95%RH Voltage : Rated voltage Time : 500±²⁴₀hours</p>															
12	Endurance	Appearance : No abnormality. ΔC/C : ±15% I.R. : 50/C _R (MΩ) or 1000(MΩ) whichever is less. Dissipation Factor X7R temperature characteristics D.F: 10% or less X7S temperature characteristics D.F: 15% or less	<p>Temperature : 125±3°C Voltage : Rated voltage Time : 1000±⁴⁸₀hours</p>															

*C_R : Rated Capacitance(μF)

◆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	W	T max.	a									
25	1.0	X7R	3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KTF250B105M31NLT00	3,000						
	1.5	X7R						KTF250B155M31NLT00	3,000						
	2.2	X7R						KTF250B225M31NLT00	3,000						
	3.3	X7S	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF250S335M31NLT00	2,000						
	3.3	X7R						KTF250B335M32NHT00	1,600						
	4.7	X7R						KTF250B475M32NHT00	1,600						
	6.8	X7R	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF250B685M32NHT00	1,600						
	10	X7S						KTF250S106M32NHT00	1,600						
	10	X7R						KTF250B106M43NHT00	800						
	15	X7R	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF250B156M43NHT00	800						
	22	X7S						KTF250S226M43NHT00	800						
	22	X7R			3.0			KTF250B226M55NHT00	800						
33	X7R	KTF250B336M55NHT00	800												
35	1.0	X7R	3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KTF350B105M31NLT00	3,000						
	1.5	X7R						KTF350B155M31NLT00	3,000						
	2.2	X7R						KTF350B225M31NLT00	3,000						
	3.3	X7R	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF350B335M32NHT00	1,600						
	4.7	X7R						KTF350B475M32NHT00	1,600						
	6.8	X7R						KTF350B685M43NHT00	800						
	10	X7R	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF350B106M43NHT00	800						
	15	X7R						KTF350B156M55NHT00	800						
	22	X7R						KTF350B226M55NHT00	800						
	50	0.33	X7R	3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KTF500B334M31NLT00	3,000					
		0.47	X7R						KTF500B474M31NLT00	3,000					
		0.68	X7R						KTF500B684M31NLT00	3,000					
1.0		X7R	KTF500B105M31NLT00						3,000						
1.5		X7R	KTF500B155M31NLT00						2,000						
2.2		X7R	KTF500B225M31NLT00						2,000						
1.5		X7R	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF500B155M32NHT00	1,600						
2.2		X7R						KTF500B225M32NHT00	1,600						
3.3		X7R						KTF500B335M32NHT00	1,600						
4.7		X7R						KTF500B475M32NHT00	1,600						
4.7		X7R						KTF500B475M43NHT00	800						
6.8		X7R						KTF500B685M43NHT00	800						
10		X7R	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF500B106M43NHT00	800						
10		X7R						KTF500B106M55NHT00	800						
15		X7R						KTF500B156M55NHT00	800						
100		0.1						X7R	3.2±0.2	1.6±0.2	1.8	0.7±0.2	0.3	KTF101B104M31NLT00	3,000
		0.15						X7R						KTF101B154M31NLT00	3,000
		0.22						X7R						KTF101B224M31NLT00	3,000
	0.33	X7R	KTF101B334M31NLT00	3,000											
	0.47	X7R	KTF101B474M31NLT00	3,000											
	0.68	X7R	KTF101B684M31NLT00	3,000											
	1.0	X7R	KTF101B105M31NLT00	2,000											
	1.5	X7R	KTF101B155M31NLT00	2,000											
	2.2	X7R	KTF101B225M31NLT00	2,000											
	1.0	X7R	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF101B105M32NHT00	1,600						
	1.5	X7R						KTF101B155M32NHT00	1,600						
	2.2	X7R						KTF101B225M32NHT00	1,600						
	3.3	X7R						KTF101B335M32NHT00	1,600						
	4.7	X7R						KTF101B475M32NHT00	1,600						
	1.5	X7R						4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF101B155M43NHT00	800	
	2.2	X7R											KTF101B225M43NHT00	800	
	3.3	X7R											KTF101B335M43NHT00	800	
	4.7	X7R							3.2±0.5	3.2			0.7±0.2	KTF101B475M43EHT00	800
6.8	X7R	KTF101B685M43NHT00	800												
4.7	X7R	KTF101B475M55NHT00	800												
6.8	X7R	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF101B685M55FHT00	800							
4.7	X7R						KTF101B475M55NHT00	800							
10	X7R						KTF101B106M55NHT00	800							

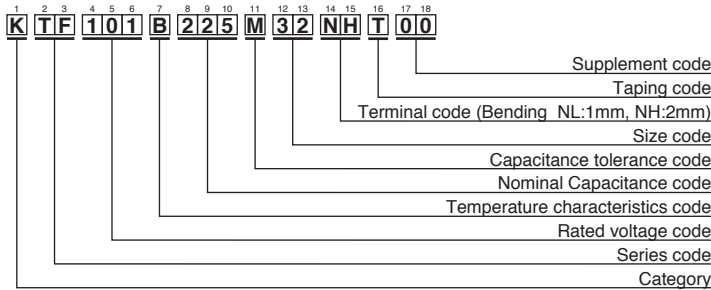
*Please consult with us when you consider the rating other than a standard table.

◆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	W	Tmax.	a			
250	0.033	X7R	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF251B333M31NLT00	3,000
	0.047	X7R						KTF251B473M31NLT00	3,000
	0.068	X7R						KTF251B683M31NLT00	3,000
	0.1	X7R						KTF251B104M31NLT00	3,000
	0.15	X7R	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF251B154M32NLT00	1,600
	0.22	X7R						KTF251B224M32NLT00	1,600
	0.33	X7R						KTF251B334M32NLT00	1,600
	0.47	X7R	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF251B474M43NLT00	800
	0.68	X7R						KTF251B684M43NLT00	800
	1.0	X7R	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF251B105M55NLT00	800
1.5	X7R	KTF251B155M55NLT00						800	
500	0.47	X7R						5.7±0.4	5.0±0.4
0.56	X7R	3.0	1.0±0.4	KTF501B564M55NLT00	800				

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

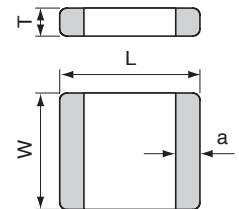
◆PART NUMBERING SYSTEM



Size Code

Size Code	Code	
	JIS	EIA
31	3216	1206
32	3225	1210
43	4532	1812
55	5750	2220
76	7563	3025

◆DIMENSIONS



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