

NTS Series / NTF Series

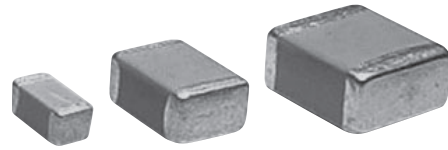
(General product)

Temperature cycle : 1000 cycles



◆FEATURES

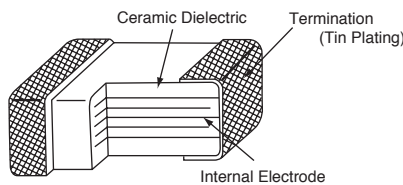
1. Large capacitance by small size.
2. X7R and X7S temperature characteristics.
3. High permissible ripple current capability.
4. NTF: Temperature cycle : 1000 cycles.



◆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±0.2Vrms	0.5±0.2Vrms
5	Rated Ripple Current	See STANDARD RATINGS	10kHz~1MHz (sine curve) Ripple voltage V _p shall be less than the rated voltage.		

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

NTS Series / NTF Series

◆ 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 Press bar Capacitor Substrate Support</p> <p>Bending capability*</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	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF101B105M31NLT00	2,000						
	1.5	X7R						KTF101B155M31NLT00	2,000						
	2.2	X7R						KTF101B225M31NLT00	2,000						
	1.0	X7R						KTF101B105M32NHT00	1,600						
	1.5	X7R						KTF101B155M32NHT00	1,600						
	2.2	X7R						KTF101B225M32NHT00	1,600						
3.3	X7R	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF101B335M32NHT00	1,600							
4.7	X7R						KTF101B475M32NHT00	1,600							
1.5	X7R						KTF101B155M43NHT00	800							
2.2	X7R		3.2±0.5	2.8			0.7±0.2	1.0	KTF101B225M43NHT00	800					
3.3	X7R								KTF101B335M43NHT00	800					
4.7	X7R								KTF101B475M43NHT00	800					
6.8	X7R	5.7±0.4	5.0±0.4	2.8	0.7±0.2	1.0	KTF101B685M43NHT00	800							
4.7	X7R						2.8	1.0±0.4	2.0	KTF101B475M55NHT00	800				
6.8	X7R									KTF101B685M55NHT00	800				
10	X7R	2.8	1.0±0.4	KTF101B106M55NHT00	800										

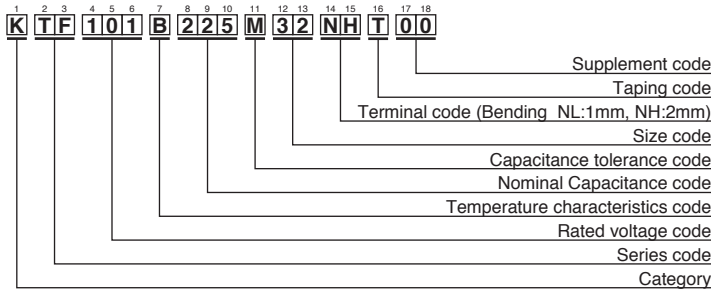
*Please consult with us when you consider the rating other than a standard table.

◆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
	500	1.0	X7R	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF251B105M55NLT00
1.5		X7R	KTF251B155M55NLT00						800
0.47		X7R	5.7±0.4	5.0±0.4	2.7	1.5	KTF501B474M55NLT00	800	
0.56		X7R			3.0		KTF501B564M55NLT00	800	

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

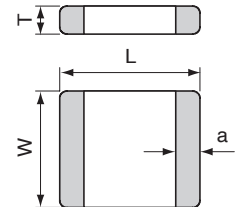
◆PART NUMBERING SYSTEM



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.