

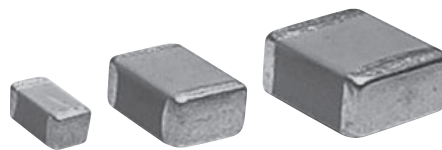
NTS Series / NTF Series

Temperature cycle : 1000 cycles



◆FEATURES

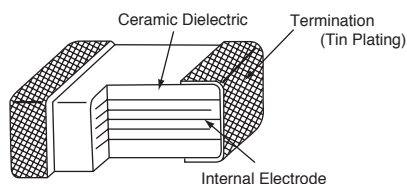
1. Large capacitance by small size.
2. Excellent noise absorption.
3. High permissible ripple current capability.
4. NTF: Temperature cycle : 1000 cycles.



◆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

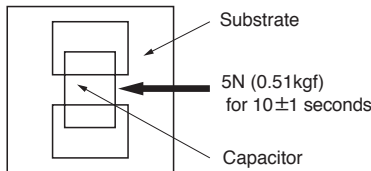
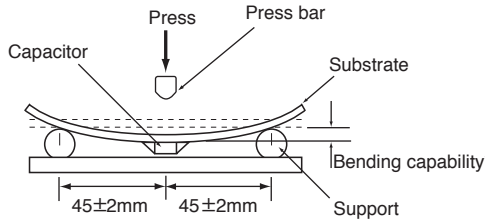
1. Category Temperature Range	-55 to +125°C
2. Rated Voltage Range	25, 50, 100, 250V _{dc}
3. Rated Capacitance Range	0.010 to 47μF
4. Rated Capacitance Tolerance	M (±20%) : Standard, K (±10%)
5. Temperature Characteristics	X7R
6. Rated Ripple Current	See No.5 on the following table

◆SPECIFICATIONS

No.	Items	Specification	Test Condition												
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds. (Only 250V _{dc} product : 475V)												
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.	<table><tr><td></td><td>C_R≤10μF</td><td>C_R>10μF</td></tr><tr><td>Temperature</td><td colspan="2">25±2°C</td></tr><tr><td>Frequency</td><td>1±0.1kHz</td><td>120±12Hz</td></tr><tr><td>Voltage</td><td>1±0.2V_{rms}</td><td>0.5±0.2V_{rms}</td></tr></table>		C _R ≤10μF	C _R >10μF	Temperature	25±2°C		Frequency	1±0.1kHz	120±12Hz	Voltage	1±0.2V _{rms}	0.5±0.2V _{rms}
	C _R ≤10μF	C _R >10μF													
Temperature	25±2°C														
Frequency	1±0.1kHz	120±12Hz													
Voltage	1±0.2V _{rms}	0.5±0.2V _{rms}													
4	Dissipation Factor	5.0% maximum.													
5	Rated Ripple Current	<table><tr><td>Size code</td><td>31</td><td>32</td><td>43</td><td>55</td><td>76</td></tr><tr><td>Arms</td><td>0.3</td><td>0.5</td><td>1.0</td><td>2.0</td><td>3.0</td></tr></table>	Size code	31	32	43	55	76	Arms	0.3	0.5	1.0	2.0	3.0	10kHz~1MHz (sine curve) Ripple voltage V _p shall be less than the rated voltage.
Size code	31	32	43	55	76										
Arms	0.3	0.5	1.0	2.0	3.0										

NTS Series / NTF Series

◆SPECIFICATIONS

No.	Items	Specification	Test Condition															
6	Adhesion	No visible damage.																
7	Bend strength of the face plating	Appearance : No visible damage. ΔC/C : ±15%	The substrate shall be bend at a rate of 1mm/s for 5 seconds.  *Bending capability NTS : 1mm NTF : 1mm or 2mm															
8	Solderability	Min. 75% of surface of the termination shall be covered with new solder	<table><tr><th>Solder</th><th>Pb Free</th></tr><tr><td>Solder Temperature</td><td>245±5℃</td></tr><tr><td>Dipping Time</td><td>2±0.5sec.</td></tr></table>	Solder	Pb Free	Solder Temperature	245±5℃	Dipping Time	2±0.5sec.									
Solder	Pb Free																	
Solder Temperature	245±5℃																	
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.	Preheating Condition : <table><tr><th>Step</th><th>Temperature</th><th>Time</th></tr><tr><td>1</td><td>100±10℃</td><td>2min.</td></tr><tr><td>2</td><td>200±10℃</td><td>2min.</td></tr></table> Solder Temperature : 260±5℃ Dipping Time : 2±0.5 seconds	Step	Temperature	Time	1	100±10℃	2min.	2	200±10℃	2min.						
Step	Temperature	Time																
1	100±10℃	2min.																
2	200±10℃	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><tr><th>Step</th><th>Temperature (℃)</th><th>(min.)</th></tr><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></table> For above temperature cycle. NTS : For 5 cycles NTF : For 1000 cycles	Step	Temperature (℃)	(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 (℃)	(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% D.F. : 10% maximum I.R. : 25/C _R (MΩ) or 1000(MΩ) whichever is less.	Temperature : 40±2℃ Humidity : 90 to 95%RH Voltage : Rated voltage Time : 500± ²⁴ ₀ hours															
12	Endurance	Appearance : No abnormality. ΔC/C : ±15% D.F. : 10% maximum I.R. : 50/C _R (MΩ) or 1000(MΩ) whichever is less.	Temperature : 125±3℃ Voltage : Rated voltage Time : 1000± ⁴⁸ ₀ hours															

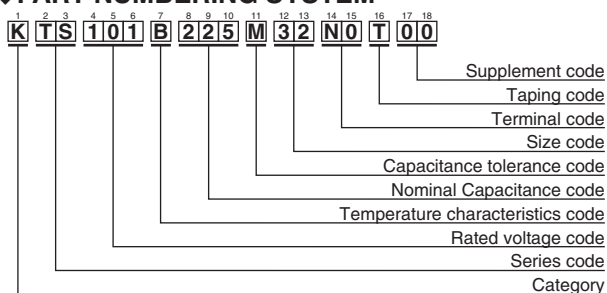
*C_R : Rated Capacitance(μF)

◆STANDARD RATINGS

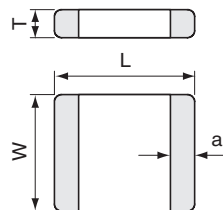
Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number	Previous Part Number (Just for your reference)				
		L	W	Tmax.	a							
25	1.0	3.2±0.2	1.6±0.2	1.8	0.5±0.3	0.3	KTS250B105M31N0T00	NTS30X7R1E105MT				
	1.5						KTS250B155M31N0T00	NTS30X7R1E155MT				
	2.2						KTS250B225M31N0T00	NTS30X7R1E225MT				
	3.3						KTS250B335M32N0T00	NTS40X7R1E335MT				
	4.7	3.2±0.4	2.5±0.3	2.6	0.6±0.3	0.5	KTS250B475M32N0T00	NTS40X7R1E475MT				
	6.8						KTS250B685M32N0T00	NTS40X7R1E685MT				
	10						KTS250B106M43N0T00	NTS50X7R1E106MT				
	15						KTS250B156M43N0T00	NTS50X7R1E156MT				
	22	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS250B226M55N0T00	NTS60X7R1E226MT				
	33						5.7±0.4	5.0±0.4	2.8	0.8±0.5	2.0	KTS250B336M55N0T00
								3.0				
47	7.5±0.5						6.3±0.5	4.0	1.0±0.5	3.0	KTS250B476M76N0T00	—
50	0.33	3.2±0.2	1.6±0.2	1.8	0.5±0.3	0.3	KTS500B334M31N0T00	NTS30X7R1H334MT				
	0.47						KTS500B474M31N0T00	NTS30X7R1H474MT				
	0.68						KTS500B684M31N0T00	NTS30X7R1H684MT				
	1.0						KTS500B105M31N0T00	NTS40X7R1H105MT				
	1.5	3.2±0.4	2.5±0.3	2.6	0.6±0.3	0.5	KTS500B155M32N0T00	NTS40X7R1H155MT				
	2.2						KTS500B225M32N0T00	NTS40X7R1H225MT				
	3.3						KTS500B335M32N0T00	NTS40X7R1H335MT				
	4.7						KTS500B475M43N0T00	NTS50X7R1H475MT				
	6.8	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS500B685M43N0T00	NTS50X7R1H685MT				
	10						KTS500B106M55N0T00	NTS60X7R1H106MT				
	15						KTS500B156M55N0T00	NTS60X7R1H156MT				
	22						7.5±0.5	6.3±0.5	4.0	1.0±0.5	3.0	KTS500B226M76N0T00
100	0.1	3.2±0.2	1.6±0.2	1.8	0.5±0.3	0.3	KTS101B104M31N0T00	NTS30X7R2A104MT				
	0.15						KTS101B154M31N0T00	NTS30X7R2A154MT				
	0.22						KTS101B224M31N0T00	NTS30X7R2A224MT				
	0.33						KTS101B334M31N0T00	NTS30X7R2A334MT				
	0.47						KTS101B474M31N0T00	NTS30X7R2A474MT				
	0.68						KTS101B684M32N0T00	NTS30X7R2A684MT				
	1.0	3.2±0.4	2.5±0.3	2.6	0.6±0.3	0.5	KTS101B105M32N0T00	NTS40X7R2A105MT				
	1.5						KTS101B155M32N0T00	NTS40X7R2A155MT				
	2.2						KTS101B225M32N0T00	NTS40X7R2A225MT				
	1.5	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS101B155M43N0T00	NTS50X7R2A155MT				
	2.2						KTS101B225M43N0T00	NTS50X7R2A225MT				
	3.3						KTS101B335M43J0T00	—				
	4.7						KTS101B475M43E0T00	—				
	3.3	5.7±0.4	5.0±0.4	2.8	0.8±0.5	2.0	KTS101B335M55N0T00	—				
	4.7						KTS101B475M55N0T00	—				
	6.8						KTS101B685M55F0T00	—				
	6.8						7.5±0.5	6.3±0.5	3.5	1.0±0.5	3.0	KTS101B685M76N0T00
	250	0.033	3.2±0.2	1.6±0.2	1.8	0.5±0.3	0.3	KTS251B333M31N0T00	NTS30X7R2E333MT			
0.047		KTS251B473M31N0T00						NTS30X7R2E473MT				
0.068		KTS251B683M31N0T00						NTS30X7R2E683MT				
0.1		KTS251B104M31N0T00						NTS30X7R2E104MT				
0.15		3.2±0.4	2.5±0.3	2.6	0.6±0.3	0.5	KTS251B154M32N0T00	NTS40X7R2E154MT				
0.22							KTS251B224M32N0T00	NTS40X7R2E224MT				
0.33							KTS251B334M32N0T00	NTS40X7R2E334MT				
0.47							KTS251B474M43N0T00	NTS50X7R2E474MT				
0.68		4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS251B684M43N0T00	NTS50X7R2E684MT				
1.0							KTS251B105M55N0T00	NTS60X7R2E105MT				
1.5							KTS251B155M55N0T00	NTS60X7R2E155MT				
2.2							7.5±0.5	6.3±0.5	3.5	1.0±0.5	3.0	KTS251B155M76N0T00
							KTS251B225M76N0T00	—				

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

◆PART NUMBERING SYSTEM



◆DIMENSIONS



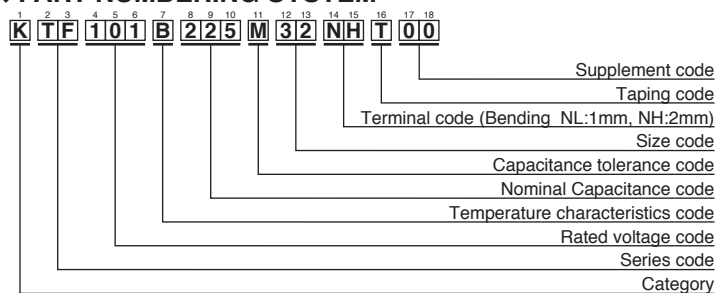
Please refer to "Part Numbering System" of the beginning of a catalog for the details.

◆STANDARD RATINGS

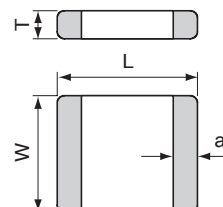
Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number
		L	W	Tmax.	a		
25	1.0	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF250B105M31NLT00
	1.5						KTF250B155M31NLT00
	2.2						KTF250B225M31NLT00
	3.3						KTF250B335M32NHT00
	4.7	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF250B475M32NHT00
	6.8						KTF250B685M32NHT00
	10						KTF250B106M43NHT00
	15	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF250B156M43NHT00
	22						KTF250B226M55NHT00
	33						KTF250B336M55NHT00
50	0.33	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF500B334M31NLT00
	0.47						KTF500B474M31NLT00
	0.68						KTF500B684M31NLT00
	1.0						KTF500B105M31NLT00
	1.5	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF500B155M32NHT00
	2.2						KTF500B225M32NHT00
	3.3						KTF500B335M32NHT00
	4.7						KTF500B475M43NHT00
	6.8	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF500B685M43NHT00
	10						KTF500B106M55NHT00
100	15						KTF500B156M55NHT00
	0.1	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF101B104M31NLT00
	0.15						KTF101B154M31NLT00
	0.22						KTF101B224M31NLT00
	0.33						KTF101B334M31NLT00
	0.47						KTF101B474M31NLT00
	0.68						KTF101B684M31NLT00
	1.0	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF101B105M32NHT00
	1.5						KTF101B155M32NHT00
	2.2						KTF101B225M32NHT00
	3.3						KTF101B335M32NHT00
250	0.033	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF251B333M31NLT00
	0.047						KTF251B473M31NLT00
	0.068						KTF251B683M31NLT00
	0.1						KTF251B104M31NLT00
	0.15	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF251B154M32NLT00
	0.22						KTF251B224M32NLT00
	0.33						KTF251B334M32NLT00
	0.47						KTF251B474M43NLT00
	0.68	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF251B684M43NLT00
	1.0						KTF251B105M55NLT00
	1.5						KTF251B155M55NLT00

※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.