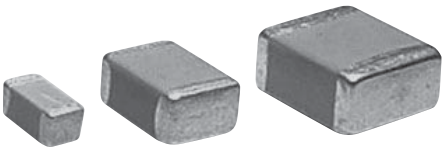
NIPPON CHEMI-CON

MULTILAYER CERAMIC CHIP CAPACITORS

NTS Series / NTF Series

RoHS Compliant

Temperature cycle : 1000 cycles



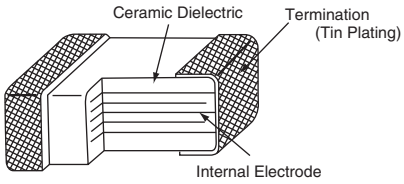
◆FEATURES

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℃
2. Rated Voltage Range	25, 50, 100, 250Vdc
3. Rated Capacitance Range	0.033 to 33μF
4. Rated Capacitance Tolerance	M (±20%) : Standard, K (±10%)
5. Temperature Characteristics	X7R
6. Rated Ripple Current	See No.5 on the following table

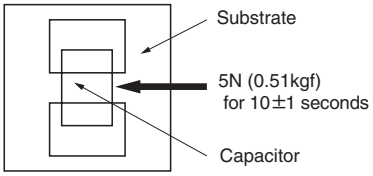
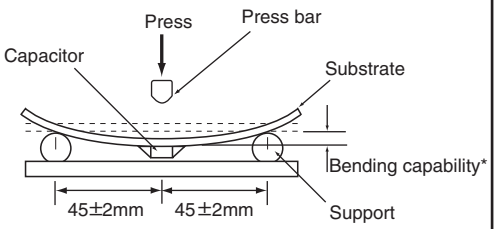
◆SPECIFICATIONS

<table>
<tr><th>No.</th><th>Items</th><th>Specification</th><th>Test Condition</th></tr>
<tr><td>1</td><td>Withstand Voltage</td><td>No abnormality.</td><td>250% of rated voltage shall be applied for 5 seconds.
(Only 250Vdc product : 475V)</td></tr>
<tr><td>2</td><td>Insulation Resistance</td><td>100/CR(MΩ) or 4000(MΩ)
whichever is less.</td><td>Rated voltage shall be applied for 60±5 seconds at temperature 25±2℃.</td></tr>
<tr><td>3</td><td>Rated Capacitance</td><td>Within specified tolerance.</td><td rowspan="2"><table><tr><td></td><td>CR≦10μF</td><td>CR>10μF</td></tr><tr><td>Temperature</td><td colspan="2">25±2℃</td></tr><tr><td>Frequency</td><td>1±0.1kHz</td><td>120±12Hz</td></tr><tr><td>Voltage</td><td>1±0.2Vrms</td><td>0.5±0.2Vrms</td></tr></table></td></tr>
<tr><td>4</td><td>Dissipation Factor</td><td>5.0% maximum.</td></tr>
<tr><td>5</td><td>Rated Ripple Current</td><td><table><tr><td>Size code</td><td>31</td><td>32</td><td>43</td><td>55</td></tr><tr><td>Arms</td><td>0.3</td><td>0.5</td><td>1.0</td><td>2.0</td></tr></table></td><td>10kHz～1MHz (sine curve)
Ripple voltage Vp shall be less than the rated voltage.</td></tr>
</table>

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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	Solder: Pb Free / Eutectic Solder Temperature: 245±5℃ / 235±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.	Solder Temperature : 260±5℃ Dipping Time : 2±0.5 seconds
10	Temperature Cycle	Appearance : No visible damage. ΔC/C : ±15% D.F. : To meet the initial specification. I.R. : To meet the initial specification.	Step 1: Min. Category temperature ±3 (30±3) Step 2: Room temperature (3 max.) Step 3: Max. Category temperature ±3 (30±3) Step 4: Room temperature (3 max.) For above temperature cycle. NTS : For 5 cycles NTF : For 1000 cycles
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)

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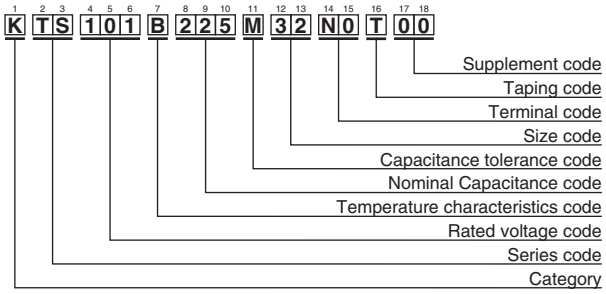
NTS Series

◆STANDARD RATINGS

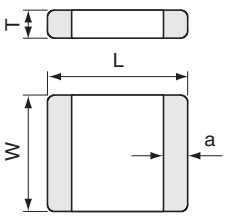
Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm) L	W	Tmax.	a	Maximum ripple current (Arms)	Part Number	Previous Part Number (Just for your reference)
25	1.0	3.2±0.2	1.6±0.2	1.8	0.5±0.3	0.3	KTS250B105M31N0T00	NTS30X7R1E105MT
	1.5						KTS250B155M31N0T00	NTS30X7R1E155MT
	2.2						KTS250B225M31N0T00	NTS30X7R1E225MT
	3.3	3.2±0.4	2.5±0.3	2.6	0.6±0.3	0.5	KTS250B335M32N0T00	NTS40X7R1E335MT
	4.7						KTS250B475M32N0T00	NTS40X7R1E475MT
	6.8						KTS250B685M32N0T00	NTS40X7R1E685MT
	10	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS250B106M43N0T00	NTS50X7R1E106MT
	15						KTS250B156M43N0T00	NTS50X7R1E156MT
	22	5.7±0.4	5.0±0.4	2.8	0.8±0.5	2.0	KTS250B226M55N0T00	NTS60X7R1E226MT
	33			3.0			KTS250B336M55N0T00	NTS60X7R1E336MT
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	NTS30X7R1H105MT
	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	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS500B475M43N0T00	NTS50X7R1H475MT
	6.8						KTS500B685M43N0T00	NTS50X7R1H685MT
	10	5.7±0.4	5.0±0.4	2.8	0.8±0.5	2.0	KTS500B106M55N0T00	NTS60X7R1H106MT
	15						KTS500B156M55N0T00	NTS60X7R1H156MT
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						KTS101B684M31N0T00	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		3.2±0.5				KTS101B335M43J0T00	—
	4.7			3.2			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			3.2			KTS101B685M55F0T00	—
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	4.5±0.4	3.2±0.4	2.8	0.6±0.3	1.0	KTS251B474M43N0T00	NTS50X7R2E474MT
	0.68						KTS251B684M43N0T00	NTS50X7R2E684MT
	1.0	5.7±0.4	5.0±0.4	2.8	0.8±0.5	2.0	KTS251B105M55N0T00	NTS60X7R2E105MT
	1.5						KTS251B155M55N0T00	NTS60X7R2E155MT

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

◆PART NUMBERING SYSTEM



◆DIMENSIONS



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MULTILAYER CERAMIC CHIP CAPACITORS

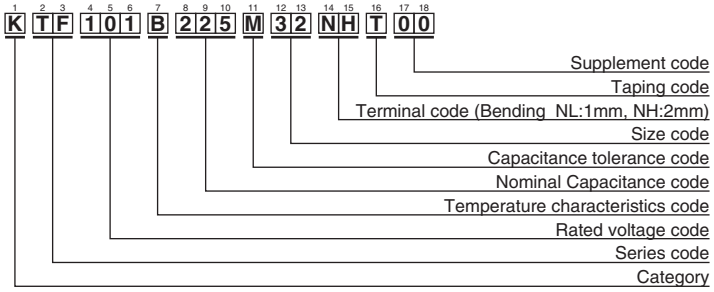
NTF Series

◆STANDARD RATINGS

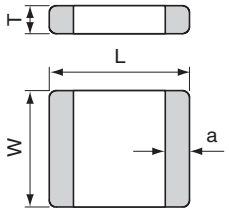
Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Maximum ripple current (Arms)	Part Number
		L	W	Tmax.	a		
25	1.0	3.2±0.3	1.6±0.2	1.8	0.7±0.2	0.3	KTF250B105M31NLT00
	1.5						KTF250B155M31NLT00
	2.2						KTF250B225M31NLT00
	3.3	3.2±0.4	2.5±0.3	2.6	0.7±0.2	0.5	KTF250B335M32NHT00
	4.7						KTF250B475M32NHT00
	6.8						KTF250B685M32NHT00
	10	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF250B106M43NHT00
	15						KTF250B156M43NHT00
	22	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF250B226M55NHT00
	33			3.0			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	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF500B475M43NHT00
	6.8						KTF500B685M43NHT00
	10	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF500B106M55NHT00
	15						KTF500B156M55NHT00
100	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
	1.5	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF101B155M43NHT00
	2.2						KTF101B225M43NHT00
	3.3		3.2±0.5				KTF101B335M43JHT00
	4.7			3.2			KTF101B475M43EHT00
	4.7	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF101B475M55NHT00
	6.8			3.2			KTF101B685M55FHT00
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	4.5±0.4	3.2±0.4	2.8	0.7±0.2	1.0	KTF251B474M43NLT00
	0.68						KTF251B684M43NLT00
	1.0	5.7±0.4	5.0±0.4	2.8	1.0±0.4	2.0	KTF251B105M55NLT00
	1.5						KTF251B155M55NLT00

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CAT. No. E1002R