

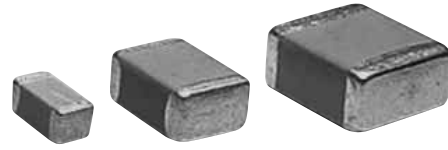
Upgrade!

## NTS Series

### Surface Mount Device

#### ◆FEATURES

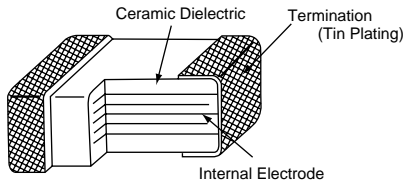
1. Large capacitance by small size.
2. Excellent noise absorption.
3. High permissible ripple current capability.
4. Pb-free design.
5. Tin plate terminations.



#### ◆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 <sub>dc</sub>
3. Rated Capacitance Range	0.033 to 33μF
4. Rated Capacitance Tolerance	K (±10%), M (±20%)
5. Temperature Characteristics	X5R, 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.												
2	Insulation Resistance	100/C <sub>R</sub> (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 border="1"> <tr> <td></td> <td>C<sub>R</sub>≤10μF</td> <td>C<sub>R</sub>&gt;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<sub>rms</sub></td> <td>0.5±0.2V<sub>rms</sub></td> </tr> </table>		C <sub>R</sub> ≤10μF	C <sub>R</sub> >10μF	Temperature	25±2°C		Frequency	1±0.1kHz	120±12Hz	Voltage	1±0.2V <sub>rms</sub>	0.5±0.2V <sub>rms</sub>
	C <sub>R</sub> ≤10μF	C <sub>R</sub> >10μF													
Temperature	25±2°C														
Frequency	1±0.1kHz	120±12Hz													
Voltage	1±0.2V <sub>rms</sub>	0.5±0.2V <sub>rms</sub>													
4	Dissipation Factor	5.0% maximum.													
5	Rated Ripple Current	<table border="1"> <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>	Size code	31	32	43	55	Arms	0.3	0.5	1.0	2.0	10kHz~1MHz (sine curve) Ripple voltage V <sub>p</sub> shall be less than the rated voltage.		
Size code	31	32	43	55											
Arms	0.3	0.5	1.0	2.0											

### ◆SPECIFICATIONS

No.	Items	Specification	Test Condition															
6	Adhesion	No visible damage.	<p>Substrate 5N (0.51kgf) for 10±1 seconds Capacitor</p>															
7	Bend strength of the face plating	Appearance : No visible damage. ΔC/C : ±15%	<p>The substrate shall be bend by 1mm at a rate of 1mm/s for 5 seconds.</p> <p>Press Press bar Substrate Capacitor 1.0mm Support 45±2mm 45±2mm</p>															
8	Solderability	Min. 75% of surface of the termination shall be covered with new solder	<p>Solder Temperature : 235±5°C Dipping Time : 2±0.5 sec. Solder : Eutectic solder containing Ag2.5 to 3wt%</p>															
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. Withstand voltage : No abnormality.	<p>Solder Temperature : 260±5°C Dipping Time : 2±0.5 seconds Solder : Eutectic solder containing Ag2.5 to 3wt%</p>															
10	Temperature Cycle	Appearance : No visible damage. ΔC/C : ±15% D.F. : To meet the initial specification. I.R. : To meet the initial specification. Withstand voltage : No abnormality.	<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 ±2</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>3 max.</td> </tr> </tbody> </table> <p>For 5 cycles for above temperature cycle.</p>	Step	Temperature (°C)	(min.)	1	Min. Category temperature ±3	30±3	2	Room temperature	3 max.	3	Max. Category temperature ±2	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 ±2	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 <sub>R</sub> (MΩ) or 1000(MΩ) whichever is less. Withstand voltage : No abnormality.	<p>Temperature : 40±2°C Humidity : 90 to 95%RH Voltage : Rated voltage Time : 500±<sup>24</sup><sub>0</sub>hours</p>															
12	Endurance	Appearance : No abnormality. ΔC/C : ±15% D.F. : 10% maximum I.R. : 50/C <sub>R</sub> (MΩ) or 1000(MΩ) whichever is less. Withstand voltage : No abnormality.	<p>Temperature : 85±2°C Voltage : 200% of rated voltage. Time : 1000±<sup>48</sup><sub>0</sub>hours</p>															
			<p>Temperature : 125±3°C Voltage : Rated voltage Time : 1000±<sup>48</sup><sub>0</sub>hours</p>															

\*C<sub>R</sub> : Rated Capacitance(μF)

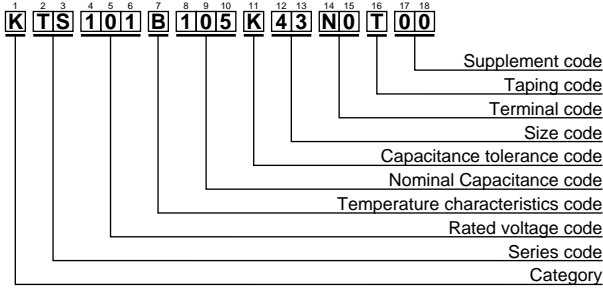


# MULTILAYER CERAMIC CHIP CAPACITORS

Upgrade!

**NTS** Series

## ◆PART NUMBERING SYSTEM



## ◆NTS SERIES STANDARD RATINGS

Part Number	Rated voltage (Vdc)	Rated Capacitance (μF)	Dimensions(mm)				Previous Part Number (Just for your reference)
			L	W	Tmax.	a	
KTS250C105M31N0T00	25	1.0	3.2±0.2	1.6±0.2	1.8	0.5±0.3	NTS30X5R1E105MT
KTS250C155M31N0T00		1.5					NTS30X5R1E155MT
KTS250C225M31N0T00		2.2					NTS30X5R1E225MT
KTS250C335M32N0T00		3.3	3.2±0.4	2.5±0.3	2.6	0.6±0.3	NTS40X5R1E335MT
KTS250C475M32N0T00		4.7					NTS40X5R1E475MT
KTS250C685M32N0T00		6.8					NTS40X5R1E685MT
KTS250C106M43N0T00		10					NTS50X5R1E106MT
KTS250C156M43N0T00		15	4.5±0.4	3.2±0.4	2.8	0.6±0.3	NTS50X5R1E156MT
KTS250C226M55N0T00		22	5.7±0.4	5.0±0.4	2.8	0.8±0.5	NTS60X5R1E226MT
KTS250C336M55N0T00		33					NTS60X5R1E336MT
KTS500C334M31N0T00	0.33	3.2±0.2					1.6±0.2
KTS500C474M31N0T00	0.47		NTS30X5R1H474MT				
KTS500C684M31N0T00	0.68		NTS30X5R1H684MT				
KTS500C105M32N0T00	1.0	3.2±0.4	2.5±0.3	2.6	0.6±0.3	NTS40X5R1H105MT	
KTS500C155M32N0T00	1.5					NTS40X5R1H155MT	
KTS500C225M32N0T00	2.2					NTS40X5R1H225MT	
KTS500C335M43N0T00	3.3					4.5±0.4	3.2±0.4
KTS500C475M43N0T00	4.7	2.8	NTS50X5R1H475MT				
KTS500C685M55N0T00	6.8	2.6	NTS60X5R1H685MT				
KTS500C106M55N0T00	10	5.7±0.4	5.0±0.4	2.8	0.8±0.5	NTS60X5R1H106MT	
KTS101B104K31N0T00	100	0.1	3.2±0.2	1.6±0.2	1.8	0.5±0.3	NTS30X7R2A104KT
KTS101B154K31N0T00		0.15					NTS30X7R2A154KT
KTS101B224K31N0T00		0.22					NTS30X7R2A224KT
KTS101B334K31N0T00		0.33	3.2±0.4	2.5±0.3	2.6	0.6±0.3	NTS40X7R2A334KT
KTS101B474K32N0T00		0.47					NTS40X7R2A474KT
KTS101B684K32N0T00		0.68					NTS40X7R2A684KT
KTS101B105K32N0T00		1.0					NTS40X7R2A105KT
KTS101B155K43N0T00		1.5	4.5±0.4	3.2±0.4	2.8	0.6±0.3	NTS50X7R2A155KT
KTS101B225K43N0T00		2.2					NTS50X7R2A225KT
KTS101B335K55N0T00		3.3					5.7±0.4
KTS101B475K55N0T00	4.7	NTS60X7R2A475KT					
KTS251B333K31N0T00	0.033	3.2±0.2	1.6±0.2	1.8	0.5±0.3	NTS30X7R2E333KT	
KTS251B473K31N0T00	0.047					NTS30X7R2E473KT	
KTS251B683K31N0T00	0.068					NTS30X7R2E683KT	
KTS251B104K32N0T00	0.1	3.2±0.4	2.5±0.3	2.6	0.6±0.3	NTS40X7R2E104KT	
KTS251B154K32N0T00	0.15					NTS40X7R2E154KT	
KTS251B224K32N0T00	0.22					NTS40X7R2E224KT	
KTS251B334K43N0T00	0.33					4.5±0.4	3.2±0.4
KTS251B474K43N0T00	0.47	2.8	NTS50X7R2E474KT				
KTS251B684K55N0T00	0.68	2.6	NTS60X7R2E684KT				
KTS251B105K55N0T00	1.0	5.7±0.4	5.0±0.4	2.8	0.8±0.5	NTS60X7R2E105KT	

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