

Upgrade!

NTS Series Surface Mount Device

◆FEATURES

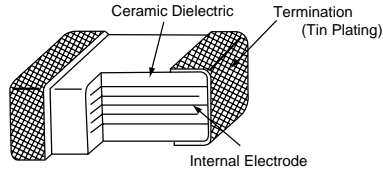
1. Large capacitance by small size.
2. Excellent noise absorption.
3. High permissible ripple current capability.
4. Pb-free design.
5. Tin plate terminations.



◆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 _{dc}
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

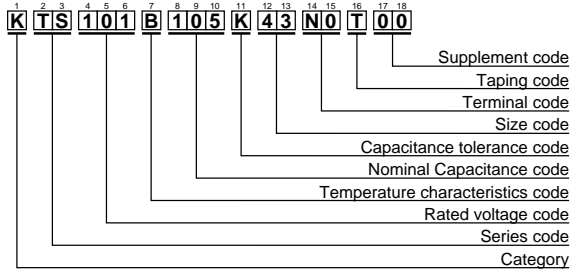
No.	Items	Specification	Test Condition											
1	Withstand Voltage	No abnormality.	250% of rated voltage shall be applied for 5 seconds.											
2	Insulation Resistance	100/C _R (MΩ) or 4000(MΩ) whichever is less.	Rated voltage shall be applied for 60±5 seconds at temperature 25±2°C.											
3	Rated Capacitance	Within specified tolerance.		<table border="1"> <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> </table>		C _R ≤10μF	C _R >10μF	Temperature	25±2°C					
				C _R ≤10μF	C _R >10μF									
Temperature	25±2°C													
4	Dissipation Factor	5.0% maximum.	<table border="1"> <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>	Frequency	1±0.1kHz	120±12Hz	Voltage	1±0.2V _{rms}	0.5±0.2V _{rms}					
Frequency	1±0.1kHz	120±12Hz												
Voltage	1±0.2V _{rms}	0.5±0.2V _{rms}												
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 _p 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%	The substrate shall be bend by 1mm at a rate of 1mm/s for 5 seconds. <p>Press Press ber 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	Solder Temperature : 235±5°C Dipping Time : 2±0.5 sec. Solder : Eutectic solder containing Ag2.5 to 3wt%															
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.	Solder Temperature : 260±5°C Dipping Time : 2±0.5 seconds Solder : Eutectic solder containing Ag2.5 to 3wt%															
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 _R (MΩ) or 1000(MΩ) whichever is less. Withstand voltage : No abnormality.	Temperature : 40±2°C 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. Withstand voltage : No abnormality.	<p>Temperature : 85±2°C Voltage : 200% of rated voltage. Time : 1000±⁴⁸₀hours</p> <p>Temperature : 125±3°C Voltage : Rated voltage Time : 1000±⁴⁸₀hours</p>															

*C_R : Rated Capacitance(μF)

◆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					NTS50X5R1E156MT				
KTS250C226M55N0T00		22	5.7±0.4	5.0±0.4	2.8	0.8±0.5	NTS60X5R1E226MT				
KTS250C336M55N0T00		33					NTS60X5R1E336MT				
KTS500C334M31N0T00		0.33					50	3.2±0.2	1.6±0.2	1.8	0.5±0.3
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	2.6	0.6±0.3	NTS50X5R1H335MT
KTS500C475M43N0T00	4.7								2.8		NTS50X5R1H475MT
KTS500C685M55N0T00	6.8	2.6	NTS60X5R1H685MT								
KTS500C106M55N0T00	10	2.8	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	NTS30X7R2A334KT				
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	5.0±0.4	2.8	0.8±0.5					NTS60X7R2A335KT
KTS101B475K55N0T00		4.7					NTS60X7R2A475KT				
KTS251B333K31N0T00		0.033					250	3.2±0.2	1.6±0.2	1.8	0.5±0.3
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	2.6	0.6±0.3	NTS50X7R2E334KT
KTS251B474K43N0T00	0.47								2.8		NTS50X7R2E474KT
KTS251B684K55N0T00	0.68	2.6	NTS60X7R2E684KT								
KTS251B105K55N0T00	1.0	2.8	NTS60X7R2E105KT								