

Temperature Compensation/Sensing KNT3 Series

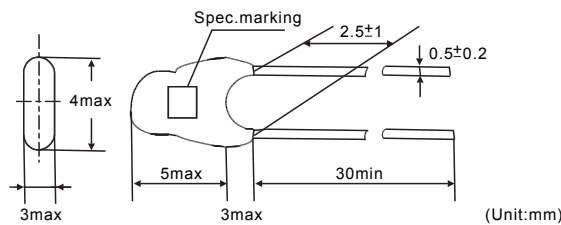
- Features
 1. Body size ϕ 3mm
 2. Radial lead resin coated
 3. $-40 \sim +125^{\circ}\text{C}$ operating temperature range
 4. Wide resistance range
 5. Cost effective
- Recommended applications
 1. Home appliances (air conditioner, refrigerator, electric fan, electric cooker, washing machine, microwave oven, drinking machine, CTV, radio.)
 2. Automotive electronic
 3. Computer
 4. Digital meter



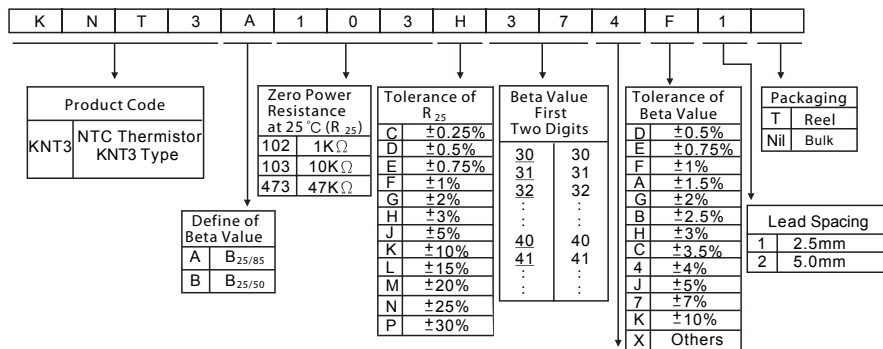
- Approvals



- Dimensions



- Part number code



Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits
0	98	2	18	4	38	6	58	8	78		
	99		19		39		59		79		
	00		20		40		60		80		
	01		21		41		61		81		
	02		22		42		62		82		
A	03	C	23	E	43	G	63	J	83		
	04		24		44		64		84		
	05		25		45		65		85		
	06		26		46		66		86		
	07		27		47		67		87		
1	08	3	28	5	48	7	68	9	88		
	09		29		49		69		89		
	10		30		50		70		90		
	11		31		51		71		91		
	12		32		52		72		92		
B	13	D	33	F	53	H	73	K	93		
	14		34		54		74		94		
	15		35		55		75		95		
	16		36		56		76		96		
	17		37		57		77		97		

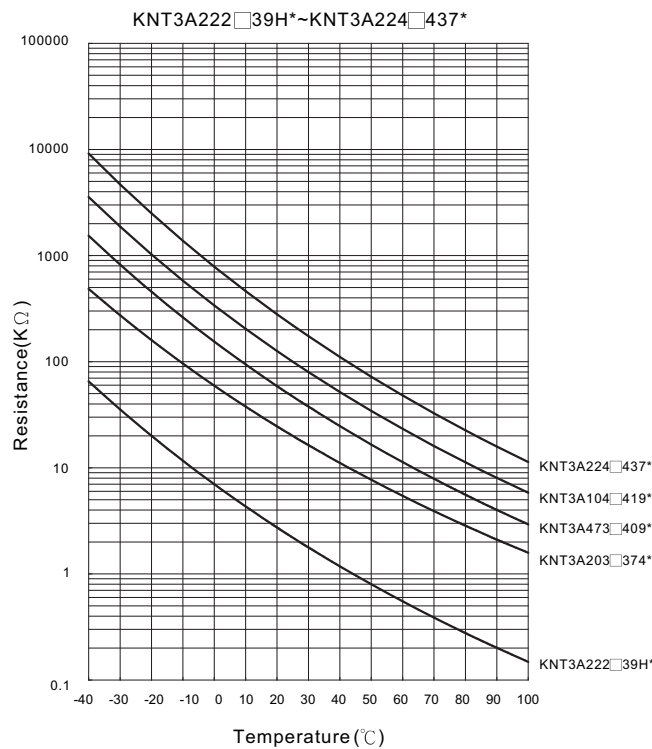
- Characteristics

Part no.	Zero power resistance at 25°C (KΩ)	Tolerance of resistance (±%)	B value (K)	Tolerance of B value (±%)	Max. power rating at 25°C (mW)	Thermal dissipation constant (mW/°C)	Thermal time constant (Sec.)	Operating temperature range (°C)
KNT3A901□39D*	0.9	1 · 2 · 3 · 5 · 10	25/85	3935	300	≥ 5	≤ 11	-40 ~ +125
KNT3A102□39D*	1			3935				
KNT3A202□39H*	2			3975				
KNT3A222□39H*	2.2			3975				

Part no.	Zero power resistance at 25°C (KΩ)	Tolerance of resistance (±%)	B value (K)		Tolerance of B value (±%)	Max. power rating at 25°C (mW)	Thermal dissipation constant (mW/°C)	Thermal time constant (Sec.)	Operating temperature range (°C)
KNT3A272□39H*	2.7	1・2・3・5・10	25/85	3975	1・2・3	300	≧5	≦11	-40 ~ +125
KNT3A302□39H*	3			3975					
KNT3A332□39H*	3.3			3975					
KNT3A472□39H*	4.7			3975					
KNT3A502□39H*	5			3975					
KNT3A682□39H*	6.8			3975					
KNT3A103□34D*	10			3435					
KNT3A103□374*	10			3740					
KNT3A103□39H*	10			3975					
KNT3A123□374*	12			3740					
KNT3A153□374*	15			3740					
KNT3A203□374*	20			3740					
KNT3A223□374*	22			3740					
KNT3A333□409*	33			4090					
KNT3A473□409*	47			4090					
KNT3A683□419*	68			4190					
KNT3A104□419*	100			4190					
KNT3A154□437*	150			4370					
KNT3A224□437*	220			4370					
KNT3A334□457*	330			4570					
KNT3A474□457*	470	4570							

Note 1: □ = Tolerance of resistance
 Note 2: * = Tolerance of B value

● R-T characteristic curve (representative)



- Reliability test

Item	Test Conditions/Methods	Specifications															
Tensile Strength of Terminations	<p>Gradually applying the force specified below to each terminal and keeping the unit fixed for 10 ± 1 sec.</p> <table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td>$0.3 < d \leq 0.5$</td> <td>0.5</td> </tr> <tr> <td>$0.5 < d \leq 0.8$</td> <td>1.0</td> </tr> </tbody> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.5	$0.5 < d \leq 0.8$	1.0	No visible damage									
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$0.3 < d \leq 0.5$	0.5																
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Bending Strength of Terminations	<p>Hanging the force specified below to each terminal and gradually bending each terminal by 90° in one direction, then 90° in the opposite direction, and again back to the origin.</p> <table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (Kg)</th> </tr> </thead> <tbody> <tr> <td>$0.3 < d \leq 0.5$</td> <td>0.25</td> </tr> <tr> <td>$0.5 < d \leq 0.8$</td> <td>0.5</td> </tr> </tbody> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.25	$0.5 < d \leq 0.8$	0.5	No visible damage									
Terminal diameter (mm)	Force (Kg)																
$0.3 < d \leq 0.5$	0.25																
$0.5 < d \leq 0.8$	0.5																
Solderability	$235 \pm 5^\circ\text{C}$, 2 ± 0.5 sec	At least 95% of terminal electrode is covered by new solder															
Resistance to Soldering Heat	$260 \pm 5^\circ\text{C}$, 10 ± 1 sec	No visible damage $ \Delta R/R \leq 3\%$															
High Temperature Storage	$125 \pm 5^\circ\text{C} \times 1000$ HRS	No visible damage $ \Delta R/R \leq 5\%$															
Damp Heat	$40 \pm 2^\circ\text{C}$, 90~95%RH, 1000 ± 24 HRS	No visible damage $ \Delta R/R \leq 3\%$															
Thermal Shock	<p>The thermal shock conditions shown below shall be repeated 5 cycles</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature ($^\circ\text{C}$)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> <tr> <td>3</td> <td>125 ± 5</td> <td>30 ± 3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5 ± 3</td> </tr> </tbody> </table>	Step	Temperature ($^\circ\text{C}$)	Period (minutes)	1	-40 ± 5	30 ± 3	2	Room temperature	5 ± 3	3	125 ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage $ \Delta R/R \leq 3\%$
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1	-40 ± 5	30 ± 3															
2	Room temperature	5 ± 3															
3	125 ± 5	30 ± 3															
4	Room temperature	5 ± 3															
Life Test	$25 \pm 5^\circ\text{C}$, $P_{\text{max}} \times 1000$ HRS	No visible damage $ \Delta R/R \leq 5\%$															