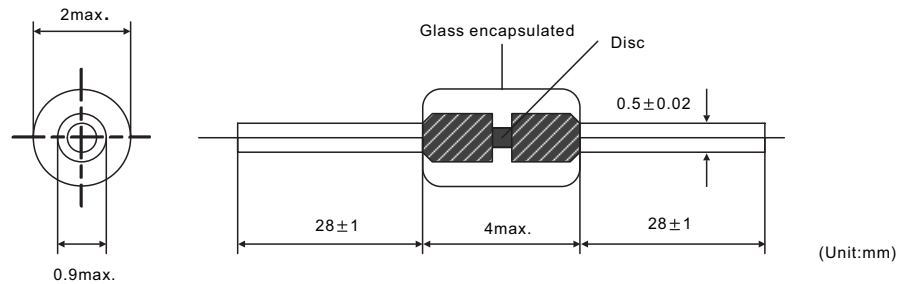


Temperature Compensation/Sensing KND Series (Glass Encapsulated Axial Type)

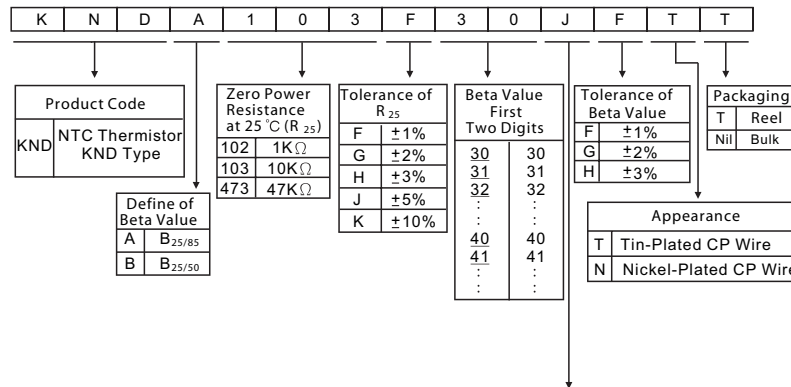
- Features
 1. Body size $\phi 2\text{mm} \times 4\text{mm}$
 2. Axial lead glass-sealed
 3. $-40 \sim +300^\circ\text{C}$ operating temperature range
- Recommended applications
 1. Home appliances (air conditioner, refrigerator, electric fan, electric cooker, washing machine, microwave oven, drinking machine, CTV, radio.)
 2. Automotive electronic
 3. Heater
- Approvals



- Dimensions



- Part number code



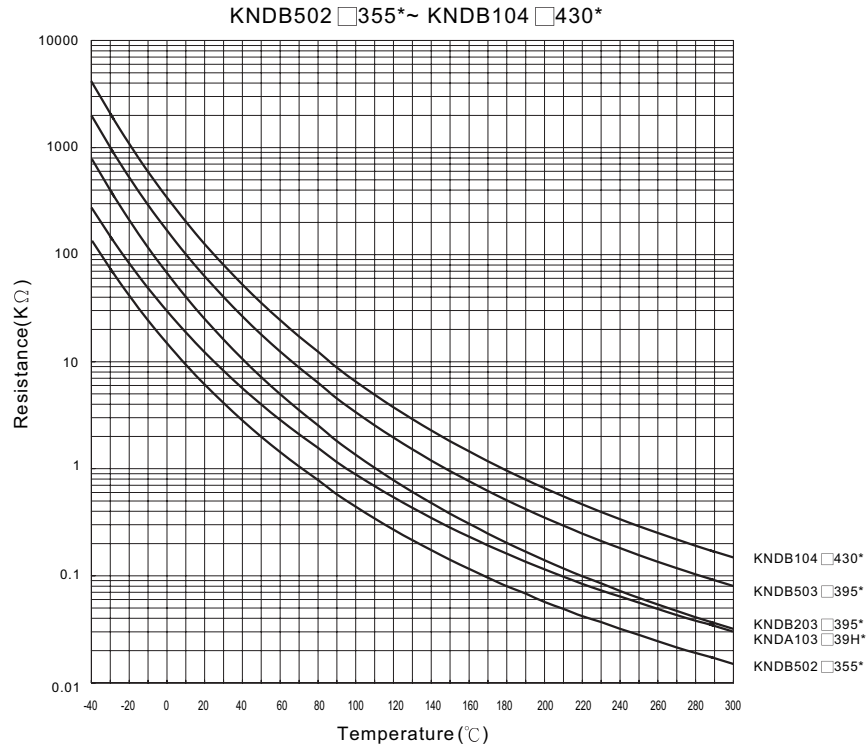
Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits	Code	Beta Value Last Two Digits
0	98	2	18	4	38	6	58	8	78
	99		19		39		59		79
	00		20		40		60		80
	01		21		41		61		81
	02		22		42		62		82
A	03	C	23	E	43	G	63	J	83
	04		24		44		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)
KNDB502□355*	5	1、2、3、5、10	25/50	3550	1、2、3	120	≥2	≤10	-40 ~ +200 (Tin-plated CP wire) -40 ~ +300 (Nickel-plated CP wire)
KNDB103□355*	10		25/50	3550					
KNDB103□395*	10		25/50	3950					
KNDA103□34D*	10		25/85	3435					
KNDA103□327*	10		25/85	3270					
KNDA103□370*	10		25/85	3700					
KNDB103□347*	10		25/50	3470					
KNDA103□39H*	10		25/85	3975					
KNDB203□395*	20		25/50	3950					
KNDB303□395*	30		25/50	3950					
KNDB473□395*	47		25/50	3950					
KNDB503□395*	50		25/50	3950					
KNDB104□395*	100		25/50	3950					
KNDB104□400*	100		25/50	4000					
KNDA104□39H*	100		25/85	3975					
KNDA104□430*	100		25/85	4300					

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="0"> <tr> <td style="text-align: center;">Terminal diameter (mm)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;">$0.3 < d \leq 0.5$</td> <td style="text-align: center;">0.5</td> </tr> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.5	No visible damage											
Terminal diameter (mm)	Force (Kg)																
$0.3 < d \leq 0.5$	0.5																
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="0"> <tr> <td style="text-align: center;">Terminal diameter (mm)</td> <td style="text-align: center;">Force (Kg)</td> </tr> <tr> <td style="text-align: center;">$0.3 < d \leq 0.5$</td> <td style="text-align: center;">0.25</td> </tr> </table>	Terminal diameter (mm)	Force (Kg)	$0.3 < d \leq 0.5$	0.25	No visible damage											
Terminal diameter (mm)	Force (Kg)																
$0.3 < d \leq 0.5$	0.25																
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	$125 \pm 5^\circ\text{C} \times 1000\text{HRS}$	No visible damage $\Delta R/R$ $\leq 5\%$															
Damp Heat	$40 \pm 2^\circ\text{C}$, $90 \sim 95\% \text{RH}$, $1000 \pm 24\text{HRS}$	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>150 ± 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	150 ± 5	30 ± 3	4	Room temperature	5 ± 3	No visible damage $\Delta R/R$ $\leq 3\%$
Step	Temperature ($^\circ\text{C}$)	Period (minutes)															
1	-40 ± 5	30 ± 3															
2	Room temperature	5 ± 3															
3	150 ± 5	30 ± 3															
4	Room temperature	5 ± 3															
Life Test	$25 \pm 5^\circ\text{C}$, $P_{\text{max}} \times 1000 \text{HRS}$	No visible damage $\Delta R/R$ $\leq 5\%$															