

NTC Thermistor: HNS Type

Bead Type for Temperature Sensing



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■ Features

1. Meet the requirements of RoHS
2. Body size can be small to ϕ 1.4mm, quick response time
3. Lead material optional
4. The lead length can be 10~3000mm
5. Standard operating temperature range: $-30\text{ }^{\circ}\text{C} \sim +105\text{ }^{\circ}\text{C}$, The maximum can be customized to $300\text{ }^{\circ}\text{C}$
6. Wide resistance range, Resistance value can be customized
7. It can be customized according to installation requirements
8. High cost performance ratio

■ Recommended Applications

Household appliances, rechargeable battery packs, computers, electronic thermometers, medical instruments, photovoltaic, new energy vehicles, wireless terminals, communication equipment, power tools

■ Part Number Code





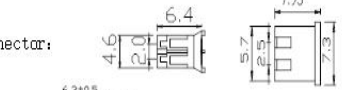
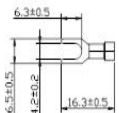
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Product Type		Zero Power Resistance at 25 ^J (R ₂₅)		Tolerance of R ₂₅		Definition of B Value		B Value		Tolerance of R ₂₅		length		Head structure		Optional Suffix						
NTC SENSOR HNS type		102	1K Ω	F	$\pm 1\%$	A	B _{25/85}	3435	3435	F	$\pm 1\%$	0030	30mm	D	PVC wire dripper							
		103	10K Ω	G	$\pm 2\%$	B	B _{25/50}	3950	3950	G	$\pm 2\%$	1500	1500mm	B	Enamelled wire dripper							
		473	47K Ω	H	$\pm 3\%$					H	$\pm 3\%$			Q	Round fixed hole metal head							
		224	220K Ω	J	$\pm 5\%$					J	$\pm 5\%$			Z	Round fixed hole plastic head							
		474	470K Ω	K	$\pm 10\%$					K	$\pm 10\%$											

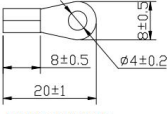

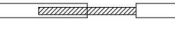
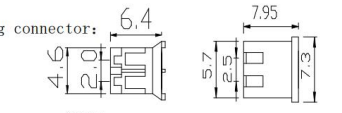
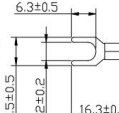
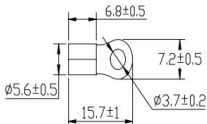
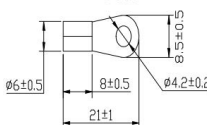
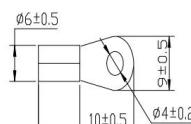
NTC Thermistor: HNS Type Bead Type for Temperature Sensing



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■ Structure and Dimensions

 GUILIN SEMISAM ELECTRONIC TECHNOLOGY CO., LTD Product details of temperature sensor			
Serial number	Head structure	Wire specification	Tail structure
1	 Water dripper	UL10064 30/32AWG TS 200°C 300V ODO.38 Blue line	Off line tin dipping: 
		Φ0.3 155°C Red polyurethane enamelled round wire	
		UL 3302HF 30/32AWG TS 105°C 30V Black single line UL 3302HF 30/32AWG 2C TS 105°C 30V Black parallel	Off line tin dipping: 
		XLPE 3656 28/30AWG TS 150°C 300V Black single line XLPE 3656 28/30AWG 2C TS 150°C 300V Black parallel	
		UL2651 28/30AWG TS 105°C 300V Black single line UL2651 28/30AWG 2C TS 105°C 300V Black parallel	2.0/2.5 Spacing connector: 
		UL4413 28AWG TS 150°C 300V Black single line UL4413 28AWG 2C TS 150°C 300V Black parallel	
		UL4413 26AWG TS 150°C 300V Black single line UL4413 26AWG 2C TS 150°C 300V Black parallel	Electrical terminal: 

2	 HNS181205	UL4413 24/26AWG 2C TS 150°C 300V Black parallel UL2651 24/26AWG 2C TS 105°C 300V Black parallel	Off line tin dipping:  Half stripping:  2.0/2.5 Spacing connector:  Electrical terminal: 
	 HNS190904		
	 HNS190701		
	 HNS200303		

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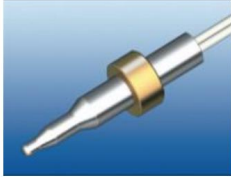


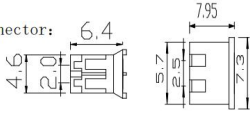
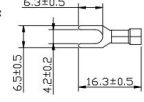

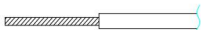

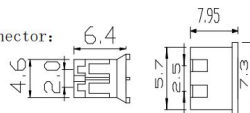
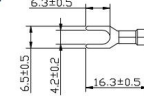
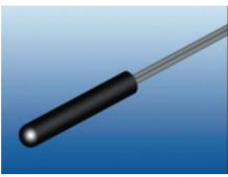
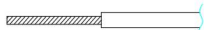

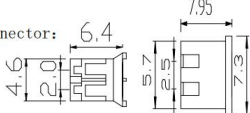
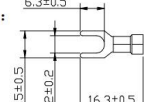



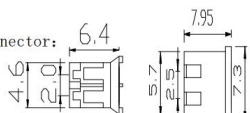
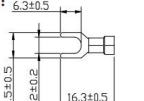
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<p>2</p>	<p>HNS201006</p> <p>Metal head with fixing hole</p> <p>HNS191004</p> <p>Metal fixing hole of injection head</p>	<p>UL4413 24/26AWG 2C TS 150°C 300V Black parallel UL2651 24/26AWG 2C TS 105°C 300V Black parallel</p>	<p>Off line tin dipping: </p> <p>Half stripping: </p> <p>2.0/2.5 Spacing connector: </p> <p>Electrical terminal: </p>
<p>3</p>	<p>Glass sealed resistance head</p>	<p>UL1332 24/26AWG TS 200°C 300V Black single line</p>	<p>Off line tin dipping: </p> <p>Half stripping: </p> <p>2.0/2.5 Spacing connector: </p> <p>Electrical terminal: </p>
<p>4</p>	<p>Metal round shell</p>	<p>UL1332 24/26AWG TS 200°C 300V Black single line</p>	<p>Off line tin dipping: </p> <p>Half stripping: </p> <p>2.0/2.5 Spacing connector: </p> <p>Electrical terminal: </p>

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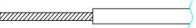

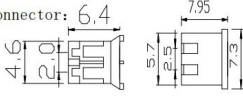
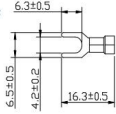

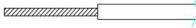

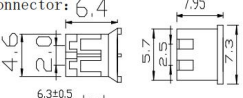
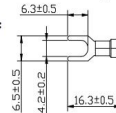
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5	 Metal bullet	UL2651 26/28AWG 2C TS 105°C 300V Black parallel	Off line tin dipping: 
		UL4413 26/28AWG 2C TS 150°C 300V Black parallel	Half stripping:  2.0/2.5 Spacing connector:  Electrical terminal: 
6	 Screw head	UL2651 26/28AWG 2C TS 105°C 300V Black parallel	Off line tin dipping: 
		UL4413 26/28AWG 2C TS 150°C 300V Black parallel	Half stripping:  2.0/2.5 Spacing connector:  Electrical terminal: 
7	 Plastic head	UL2651 26/28AWG 2C TS 105°C 300V Black parallel	Off line tin dipping: 
		UL4413 26/28AWG 2C TS 150°C 300V Black parallel	Half stripping:  2.0/2.5 Spacing connector:  Electrical terminal: 
8	 Metal probe	UL2651 26/28AWG 2C TS 105°C 300V Black parallel	Off line tin dipping: 
		UL4413 26/28AWG 2C TS 150°C 300V Black parallel	Half stripping:  2.0/2.5 Spacing connector:  Electrical terminal: 

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<p>9</p>	 <p>Hot melt adhesive head</p>	<p>UL2651 26/28AWG 2C TS 105°C 300V Black parallel</p>	<p>Off line tin dipping: </p> <p>Half stripping: </p> <p>2.0/2.5 Spacing connector: </p> <p>Electrical terminal: </p>
<p>10</p>	 <p>Hot melt adhesive head</p>	<p>UL2651 26/28AWG 2C TS 105°C 300V Black parallel</p>	<p>Off line tin dipping: </p> <p>Half stripping: </p> <p>2.0/2.5 Spacing connector: </p> <p>Electrical terminal: </p>
		<p>UL4413 26/28AWG 2C TS 150°C 300V Black parallel</p>	



■ Mechanical Tests

NO.	Item	Pass Criteria	Test Conditions
1	Drop Test	Appearance should be no visible damage, performance test requirements	Drop on a 10mm thick wooden board from a height of 1m for 5 times

■ Reliability Tests

NO.	Item	Pass Criteria	Test Conditions
1	High Temperature Storage	$\Delta R/R25 \leq \pm 3\%$ $\Delta B/B25/85 \leq \pm 3\%$ Relative to the initial value	$105 \pm 3^\circ\text{C}$, $1000 \pm 24\text{h}$ Take out the product under normal recovery after 1h
2	low Temperature Storage		$-30 \pm 3^\circ\text{C}$, $1000 \pm 24\text{h}$ Take out the product under normal recovery after 1h
3	Humidity test	$\Delta R/R25 \leq \pm 3\%$ $\Delta B/B25/85 \leq \pm 3\%$ Relative to the initial value	$40 \pm 2^\circ\text{C}$, relative humidity 90% ~ 95% of the environment to place 1000h, remove sufficient to remove surface water droplets and recovery under normal 1h
4	Temperature cycle	$\Delta R/R25 \leq \pm 3\%$ $\Delta B/B25/85 \leq \pm 3\%$ Relative to the initial value	Order: room 25°C , high temperature to $105^\circ\text{C} \pm 2^\circ\text{C}$ for 10min -- room 25°C for 5min -- low $-30^\circ\text{C} \pm 2^\circ\text{C}$ for 10min -- room 25°C for 5min, circulation after 20 times, take back 1h at room temperature

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Electrical Characteristics

Part No.	Zero power Resistance at 25°C	Tolerance of R25	B Value		Tolerance of B value	Max. Power Rating at 25°C	Dissipation Factor	Thermal Time Constant	Operating Temperature Range
	R25(KΩ)	(±%)	(K)		(±%)	Pmax(mW)	δ(mW/°C)	τ(Sec.)	T _L ~T _U (°C)
HNS102□A3435*	1	1,2,3,5	25/85	3435	2, 3	50	Water dripper series: ≧3 Metal head series: ≧2.5 Plastic head series: ≧2.0	Water dripper series: ≧7 Metal head series: ≧8 Plastic head series: ≧9	-30~+105°C
HNS682□A3470*	6.8			3470					
HNS682□A3975*	6.8			3975					
HNS103□A3435*	10			3435	1, 2, 3				
HNS103□A3975*	10			3975					
HNS202□A3435*	2			3435					
HNS223□A3740*	22			3740					
HNS333□A3975*	33			3975					
HNS473□A4090*	47			4090					
HNS503□A3950*	50			3950	2, 3				
HNS503□A4050*	50			4050					
HNS104□A4000*	100			4000					
HNS104□A4190*	100			4190	2, 3				
HNS104□A4360*	100			4360					
HNS474□A4570*	470			4570					
HNS202□B3380*	2		25/50	3380	2, 3				
HNS502□B3420*	5			3420					
HNS502□B3900*	5			3900					
HNS103□B3380*	10			3380	1, 2, 3				
HNS103□B4000*	10			4000					
HNS103□B3950*	10			3950					
HNS683□B3950*	68			3950					
HNS223□B3700*	22			3700					
HNS473□B3950*	47			3950					
HNS473□B4020*	47			4020	2, 3				
HNS104□B3950*	100	3950							
HNS104□B4120*	100	4120							
HNS224□B4370*	224			4370	2, 3				

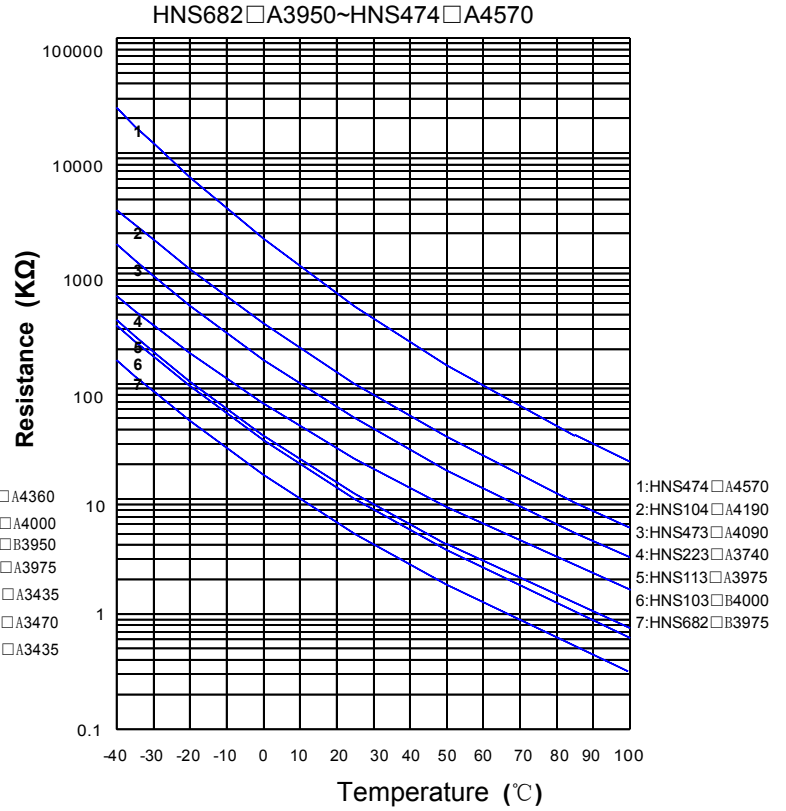
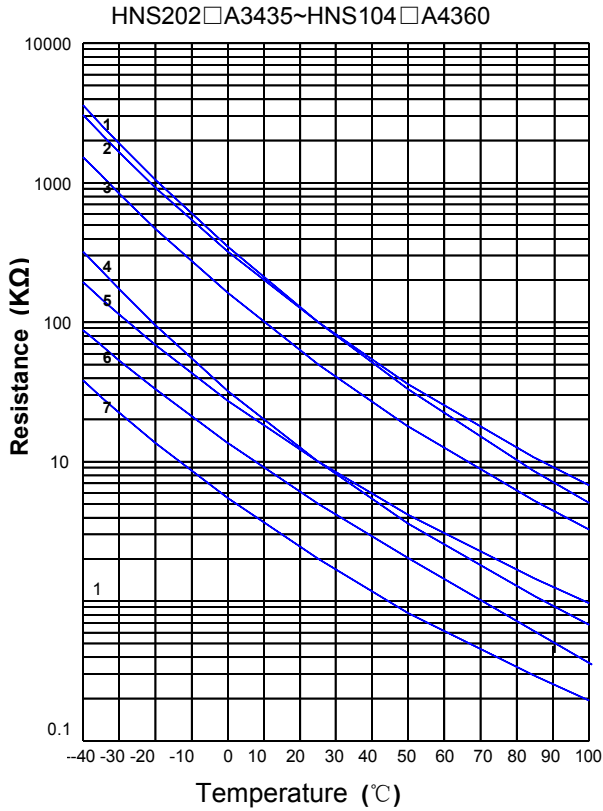
Note1: □ = Tolerance of R₂₅
* = Tolerance of B value

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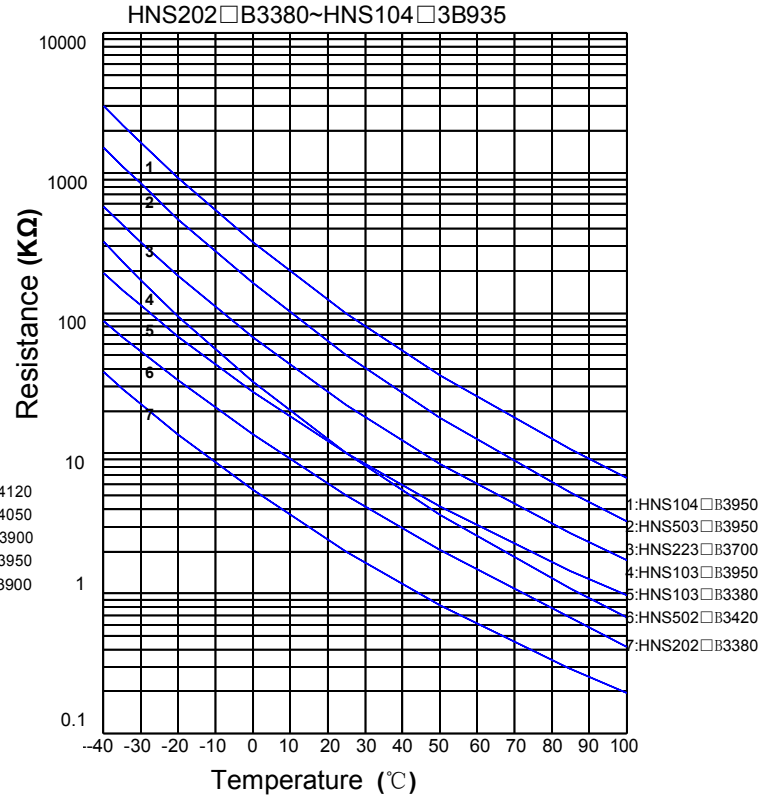
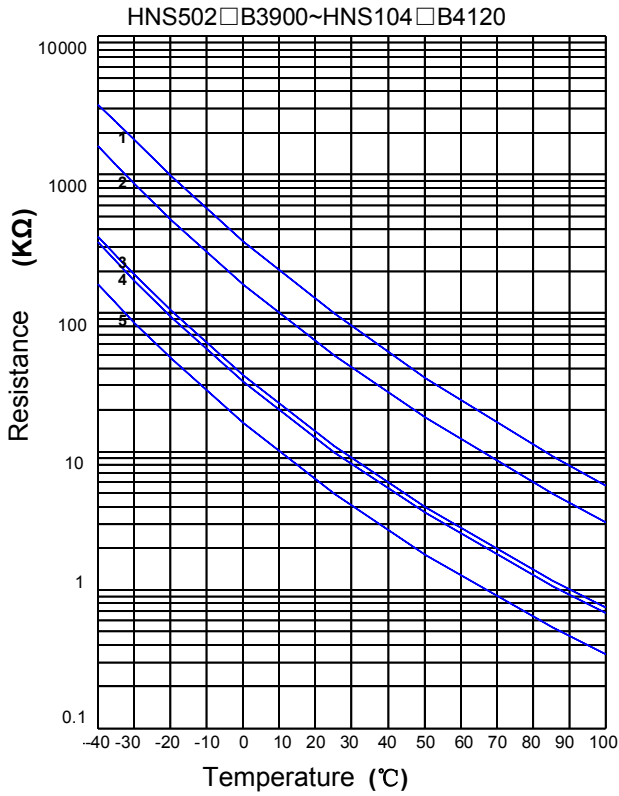
■ R-T Characteristic Curves (representative)



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- Recommended Reworking Conditions With Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360°C(max.)
Soldering Time	2.5 sec.(max.)
Distance from Thermistor	10 mm(min.)

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- Packaging
 - Bulk Packing:
*** pcs/ bag
- Storage Conditions of Products
 - Storage Conditions:
 1. Storage Temperature: -10°C~+40°C
 2. Relative Humidity: $\leq 75\%RH$
 3. Keep away from corrosive atmosphere and sunlight.
 - Period of Storage: 1 year

Revision record

Revision date	Edition	Revised content
2022.4.8	2.0	1、 Product features, revised operating temperature description.
		2、 Product structure and size, revise the material description of red enamelled wire.
		3、 Revise mechanical test and reliability test items.
		4、 Product electrical performance, revision Max.Power Rating ,Dissipation Factor,Thermal Time Constant.
		5、 Delete wave soldering parameter recommendation