

Temperature Disc Sensor - NS SERIES

NTC Thermistors Data Sheet

Features

- Max. Power Rating :
250mW(NS03) · 500mW(NS05)
- Operating temperature range: -20°C ~ +125°C
- Wide range of electrical specifications
- Fast response
- Thermal and electrical characteristics with high stability
- RoHS & Halogen Free (HF) compliant
- Customizable : R25, Housing Type, Wire Type and Length, or Other Demand



APPLICATIONS

- LED temperature display, Monitor control panel
- Motherboard temperature compensation
- IC temperature compensation
- Home appliances, Automotive electronics, Transformers, Coils, etc.

PART NUMBER CODE

NS	05	C	310	J	5	—	760	V
Temperature Disc Sensor Housing Type	Disc Diameter	Beta Range Process Code	Zero Power Resistance at 25°C R25 (Ω)	Tolerance of R25	RoHS Code		Wire Length (mm)	Wire Type
NS: without Housing NSA · NSG: with Housing Refer to (Table-1)	03Φ 05Φ	1600 ≤ A ≤ 3300 3600 ≤ C < 4200 D ≤ 4200	210 → 1KΩ 347 → 47KΩ 310 → 10KΩ 410 → 100KΩ	J: ±5% K: ±10% L: ±15%	default <5>		760 → 76mm 761 → 760mm 762 → 7600mm	Refer To (Table-2)

CONFIGURATIONS & DIMENSION

■ PRODUCT CONFIGURATIONS

<p>NS type (Epoxy <u>without</u> Housing)</p>	<p>NSA,NSG (Epoxy <u>with</u> Housing)</p>	
(1) Wire Type	(2) Coating/Housing	(L) Wire length

■ Wire Type

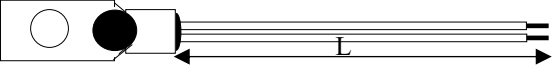

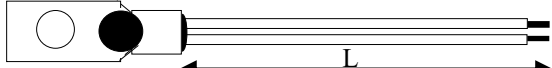

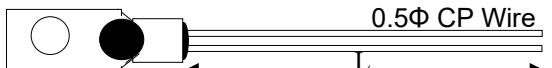
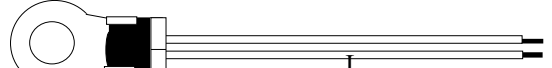

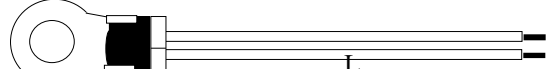


Table-2

Wire Type	Specifications	Dimensions	Wire Type	Specifications	Dimensions
B	26AWG Single Teflon Wire(white) Insulation Wire		D	24AWG Parallel PVC Wire(Black) Insulation Wire	
D	22AWG Single Teflon Wire(white) Insulation Wire		W	0.5Φ CP Wire(Silver) Non-insulation Wire	

■ Dimension (Unit : mm)

Table-1

Series	Configuration Type / Temperature Range (TL~Tu °C)	D (mm)	L1 (mm)	Coating / Housing	Wire Type	CONFIGURATIONS	Thermal Dissipation Constant	Thermal Time Constant
NS	NS03-B -40~+125°C	Max. 6	5~8	Epoxy without Housing	B		Approx. 15 mW/°C	Approx. 15 sec
	NS05-B -40~+125°C	Max. 8	15~20					
	NS03-V -40~+125°C	Max. 6	10~15	Epoxy without Housing	V			
	NS05-V -40~+125°C	Max. 8	10~16					
	NS03-D -40~+85°C	Max. 6	10~15	Epoxy without Housing	D			
	NS05-D -40~+85°C	Max. 8	15~20					
	NS03-W -40~+125°C	Max. 5	Max. 10	Epoxy without Housing	W			
	NS05-W -40~+125°C	Max. 8	Max. 10					

Series	Configuration Type / Temperature Range	Wire Type	CONFIGURATIONS	Coating / Housing	Thermal Dissipation Constant	Thermal Time Constant
NSA	NSA03-B NSA05-B -40~+125°C	B	26AWG Single Teflon Wire 	No.14 Tin Plated Copper Φ3.6+0.2 -0.1 7.5 ±0.4 26±1.0 Max. 7.5 ↑1±0.1 	Approx. 15mW/°C	Approx. 15sec
	NSA03-V NSA05-V -40~+125°C	V	NSA default Wire Type :V 			
	NSA03-D NSA05-D -40~+85°C	D	24AWG Parallel PVC Wire 			
	NAS03-W NSA05-W -40~+125°C	W	0.5Φ CP Wire 			
NSG	NSG03-B NSG05-B -40~+125°C	B	26AWG Single Teflon Wire 	No.12 Nickel – plate Φ4.3±0 7.80 ±0.2 18.80 ± 0.2 Max. 5.5 ↑0.8±0.1 	Approx. 15mW/°C	Approx. 15sec
	NSG03-V NSG05-V -40~+125°C	V	22AWG Single Teflon Wire 			
	NSG03-D NSG05-D -40~+85°C	D	24AWG Parallel PVC Wire 			
	NSG03-W NSG05-W -40~+125°C	W	0.5Φ CP Wire 			

ELECTRICAL CHARACTERISTICS

■ NS05 Serie

Main PN	Zero Power Resistance at 25°C	B(25-50) Value ±5%	Max. Power Rating at 25°C
	R25 (Ω)	(° K)	(mW)
NS□ 05A 015△	15	2900	450
NS□ 05A 020△	20	2900	450
NS□ 05A 040△	40	3000	450
NS□ 05A 045△	45	3000	450
NS□ 05A 090△	90	3100	450
NS□ 05A 110△	100	3150	450
NS□ 05A 120△	200	3300	450
NS□ 05A 125△	250	3300	450
NS□ 05A 130△	300	3300	450
NS□ 05A 135△	350	3300	450
NS□ 05C 150△	500	3600	450
NS□ 05C 168△	680	3600	450
NS□ 05C 180△	800	3700	450
NS□ 05C 190△	900	3700	450
NS□ 05C 210△	1k	3700	450
NS□ 05C 215△	1.5k	3700	450
NS□ 05C 220△	2k	3750	450
NS□ 05C 222△	2.2k	3750	450
NS□ 05C 225△	2.5K	3750	450
NS□ 05C 227△	2.7K	3750	450
NS□ 05C 230△	3K	3800	450
NS□ 05C 233△	3.3K	3800	450
NS□ 05C 235△	3.5K	3800	450
NS□ 05C 240△	4K	3850	450
NS□ 05C 245△	4.5K	3850	450
NS□ 05C 247△	4.7K	3900	450
NS□ 05C 250△	5K	3900	450
NS□ 05C 260△	6K	3900	450
NS□ 05C 310△	10K	4100	450
NS□ 05C 312△	12K	4100	450
NS□ 05C 315△	15K	4150	450
NS□ 05C 320△	20K	4150	450
NS□ 05D 330△	30K	4300	450
NS□ 05D 333△	33K	4300	450
NS□ 05D 347△	47K	4400	450
NS□ 05D 350△	50K	4400	450
NS□ 05D 410△	100K	4550	450
NS□ 05D 415△	150K	4600	450
NS□ 05D 420△	200K	4650	450
NS□ 05D 422△	220K	4700	450
NS□ 05D 433△	330K	4700	450
NS□ 05D 440△	400K	4700	450
NS□ 05D 447△	470K	4750	450

Note: NS□ means Housing Type. (refer to Table-1)

△ means tol.% of R25. (J→±5%, K→±10%, L→±15%)

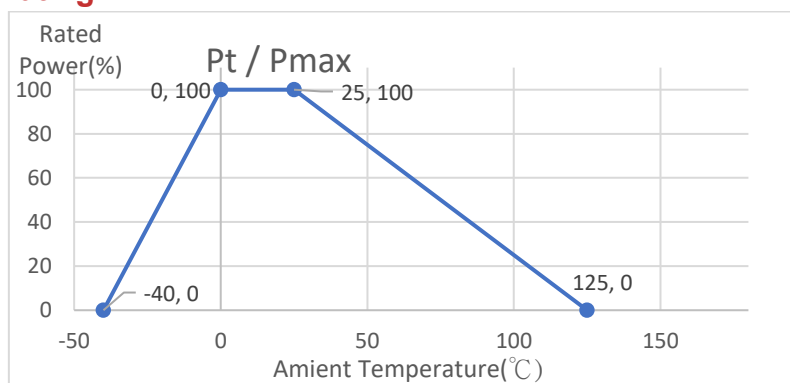
■ **NS03 Series**

Main PN	Zero Power Resistance at 25°C	B(25-50) Value ±5%	Max. Power Rating at 25°C
	R25 (Ω)	(° K)	(mW)
NS□ 03A 110△	100	3000	250
NS□ 03A 210△	1.0K	3300	250
NS□ 03C 220△	2.0K	3700	250
NS□ 03C 222△	2.2K	3700	250
NS□ 03C 225△	2.5K	3700	250
NS□ 03C 227△	2.7K	3700	250
NS□ 03C 230△	3.0K	3700	250
NS□ 03C 233△	3.3K	3700	250
NS□ 03C 240△	4.0K	3750	250
NS□ 03C 247△	4.7K	3750	250
NS□ 03C 250△	5.0K	3750	250
NS□ 03C 268△	6.8K	3800	250
NS□ 03C 275△	7.5K	3900	250
NS□ 03C 310△	10K	3900	250
NS□ 03C 312△	12K	3900	250
NS□ 03C 315△	15K	3950	250
NS□ 03C 320△	20K	4000	250
NS□ 03C 322△	22K	4000	250
NS□ 03C 330△	30K	4150	250
NS□ 03C 333△	33K	4150	250
NS□ 03C 347△	47K	4150	250
NS□ 03C3 50△	50K	4200	250
NS□ 03D 368△	68K	4300	250
NS□ 03D 410△	100K	4400	250
NS□ 03D 422△	220K	4550	250
NS□ 03D 447△	470K	4600	250

Note: NS□ means Housing Type. (refer to Table-1)

△ means tol.% of R25. (J→±5%, K→±10%, L→±15%)

Maximum Power Rating



■ PN Index

PN	Configuration Type	R25 (Ω)	Tol. Of R25	B(25-50) $\pm 5\%$	Wire Type	Wire Length (mm)	Operating Temperature Range $T_L \sim T_U (^{\circ}C)$
NS05C220J5-151D	NS05-D	2K	$\pm 5\%$	3750	D	150	-40~+85
NS05C250J5-121B	NS05-B	5K	$\pm 5\%$	3900	B	120	-40~+125
NSA05A090L5-500	NSA05-V	90	$\pm 15\%$	3100	V	50	-40~+125
NSA05A110K5-660	NSA05-V	100	$\pm 10\%$	3150	V	66	-40~+125
NSA05A120J5-101	NSA05-V	200	$\pm 5\%$	3300	V	100	-40~+125
NSA05A130J5-501	NSA05-V	300	$\pm 5\%$	3300	V	500	-40~+125
NSA05C210K5-501	NSA05-V	1k	$\pm 10\%$	3700	V	500	-40~+125
NSA05C210K5-611	NSA05-V	1k	$\pm 10\%$	3700	V	610	-40~+125
NSA05C210L5-151	NSA05-V	1k	$\pm 15\%$	3700	V	150	-40~+125
NSA05C220J5-151	NSA05-V	2K	$\pm 5\%$	3750	V	150	-40~+125
NSA05C220J5-171	NSA05-V	2K	$\pm 5\%$	3750	V	170	-40~+125
NSA05C220J5-501	NSA05-V	2K	$\pm 5\%$	3750	V	500	-40~+125
NSA05C220J5-701	NSA05-V	2K	$\pm 5\%$	3750	V	700	-40~+125
NSA05C220J5-711	NSA05-V	2K	$\pm 5\%$	3750	V	710	-40~+125
NSA05C250J5-151	NSA05-V	5K	$\pm 5\%$	3900	V	150	-40~+125
NSA05C250K5-101	NSA05-V	5K	$\pm 10\%$	3900	V	100	-40~+125
NSA05C250K5-301	NSA05-V	5K	$\pm 10\%$	3900	V	300	-40~+125
NSA05C250K5-401	NSA05-V	5K	$\pm 10\%$	3900	V	400	-40~+125
NSA05C310J5-151	NSA05-V	10K	$\pm 5\%$	4100	V	150	-40~+125
NSA05C310J5-181	NSA05-V	10K	$\pm 5\%$	4100	V	180	-40~+125
NSA05C310J5-800	NSA05-V	10K	$\pm 5\%$	4100	V	80	-40~+125
NSA05C310K5-151	NSA05-V	10K	$\pm 10\%$	4100	V	150	-40~+125
NSA05C310K5-161	NSA05-V	10K	$\pm 10\%$	4100	V	160	-40~+125
NSA05C310K5-181	NSA05-V	10K	$\pm 10\%$	4100	V	180	-40~+125
NSA05C310K5-201	NSA05-V	10K	$\pm 10\%$	4100	V	200	-40~+125
NSA05C310K5-451	NSA05-V	10K	$\pm 10\%$	4100	V	450	-40~+125
NSA05C310K5-551	NSA05-V	10K	$\pm 10\%$	4100	V	550	-40~+125
NSA05C310K5-800	NSA05-V	10K	$\pm 10\%$	4100	V	80	-40~+125
NSA05C310K5-900	NSA05-V	10K	$\pm 10\%$	4100	V	90	-40~+125
NSA05C315J5-151	NSA05-V	15K	$\pm 5\%$	4150	V	150	-40~+125
NSA05C320J5-600	NSA05-V	20K	$\pm 5\%$	4150	V	60	-40~+125
NSA05C320K5-151	NSA05-V	20K	$\pm 10\%$	4150	V	150	-40~+125
NSA05D410J5-151	NSA05-V	100K	$\pm 5\%$	4550	V	150	-40~+125
NSA05D410K5-151	NSA05-V	100K	$\pm 10\%$	4550	V	150	-40~+125
NSA05D410L5-151	NSA05-V	100K	$\pm 15\%$	4550	V	150	-40~+125
NSA05D415K5-101	NSA05-V	150K	$\pm 10\%$	4600	V	100	-40~+125
NSG03D410J5-151V	NSG03-V	100K	$\pm 5\%$	4400	V	150	-40~+125
NSG05C150K5-250W	NSG05-W	500	$\pm 10\%$	3600	W	25	-40~+125
NSG05C250J5-500V	NSG05-V	5K	$\pm 5\%$	3900	V	50	-40~+125
NSG05C310J5-101V	NSG05-V	10K	$\pm 5\%$	4100	V	100	-40~+125
NSG05C310J5-600D	NSG05-D	10K	$\pm 5\%$	4100	D	60	-40~+85
NSG05C310K5-101V	NSG05-V	10K	$\pm 10\%$	4100	V	100	-40~+125
NSG05C310L5-161D	NSG05-D	10K	$\pm 15\%$	4100	D	160	-40~+85
NSG05C310L5-251D	NSG05-D	10K	$\pm 15\%$	4100	D	250	-40~+85
NSG05C310L5-401D	NSG05-D	10K	$\pm 15\%$	4100	D	400	-40~+85
NSG05D410J5-151V	NSG05-V	100K	$\pm 5\%$	4550	V	150	-40~+125
NSG05D410J5-600D	NSG05-D	100K	$\pm 5\%$	4550	D	60	-40~+85
NSG05D410L5-161D	NSG05-D	100K	$\pm 15\%$	4550	D	160	-40~+85

Packaging

■ Bulk Packing

Wire Length(L)	160 ↓ mm	161~500 mm	501~1000 mm	1001~3500 mm	3501~5000 mm	
Housing Type Wire Type	Epoxy only (NS)	NSA, NSG NDA	All Products			
wire B : AWG#26 TEFLON	200 pcs/Bag	100 pcs/Bag	100 pcs/Bag	100 pcs/Bag	50 pcs/Bag	25 pcs/Bag
wire D : AWG#24 PVC(2P)	200 pcs/Bag	100 pcs/Bag	100 pcs/Bag	100 pcs/Bag	50 pcs/Bag	25 pcs/Bag
wire V : AWG#22 TEFLON	100 pcs/Bag	100 pcs/Bag	100 pcs/Bag	100 pcs/Bag	50 pcs/Bag	25 pcs/Bag
wire W : 0.5Φ TINNED COPPER	200 pcs/Bag	100 pcs/Bag	100 pcs/Bag	100 pcs/Bag	50 pcs/Bag	25 pcs/Bag

Warehouse Storage Conditions

- Storage temperature: -10°C~+40°C.
- Relative humidity: ≤75%RH.
- Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.