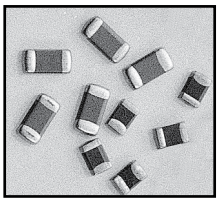
Surface Mount NTC Thermistors

NST Series

FEATURES

- NEGATIVE TEMPERATURE COEFFICIENT
- FAST RESPONSE TO TEMPERATURE VARIATIONS MAKE THEM IDEALLY FOR TEMPERATURE SENSORS AND COMPENSATORS
- STANDARD EIA 0201, 0402, 0603 AND 0805 SIZES
- TAPE AND REEL FOR AUTOMATIC MOUNTING



RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

CHARACTERISTICS AND PERFORMANCE

Series	NST02	NST04	NST06	NST10
EIA Size	0201	0402	0603	0805
Resistance Range (+25°C)	10Ω ~ 680KΩ	22Ω ~ 680KΩ	100Ω ~ 680KΩ	100Ω ~ 680KΩ
Power Rating (+25°C)	100mW	100mW	100mW	200mW
Resistance Tolerance (+25°C)	F = 1%, H = ±3%, J = ±5%, K = ±10%			
Operating Temperature Range	-55°C ~ 125°C			
Dissipation Factor	1mW/°C	1mW/°C	1mW/°C	2mW/°C
Thermal Time Constant	<3 Sec.	<3 Sec.	<5 Sec.	<5 Sec.
Beta Temperature Range	D = +25°C ~ +50°C, A = +25°C ~ +85°C, E = +25°C ~ +105°C			
Beta Value Range	3380 ~ 4250	3380 ~ 4400	3380 ~ 4500	3380 ~ 4500
Beta Value Tolerance	F = 1%, H = ±3%			
Resistance to Soldering Heat +260°C for 5 seconds	Resistance Change ΔR ±1% for F tolerance parts ΔR ±3% for H tolerance parts ΔR ±5% for J & K tolerance parts Beta Change ΔBeta ±1% for F Beta tolerance parts ΔBeta ±3% for H Beta tolerance parts			
Damp Heat 1000hrs @ +60°C, 90~95%RH				
Thermal Shock -55°C (30 min.), within 20 seconds to +125°C (30 min.), 100 cycles				
Life Test 1,000hrs @ +85°C with maximum operating current applied				
High Temperature Storage 1000hrs @ +125°C, 90~95%RH				

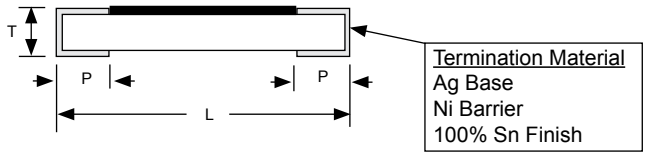
DIMENSIONS (mm)

Series	EIA Size	L	W	T	P
NST02	0201	0.60 ± 0.05	0.30 ± 0.05	0.30 ± 0.05	0.15 ± 0.05
NST04	0402	1.00 ± 0.15	0.50 ± 0.15	0.50 ± 0.15	0.25 ± 0.10
NST06	0603	1.60 ± 0.15	0.80 ± 0.15	0.80 ± 0.15	0.30 ± 0.20
NST10	0805	2.00 ± 0.20	1.25 ± 0.20	0.85 ± 0.20	0.50 ± 0.30

Link: RT Tables

TOP VIEW

SIDE VIEW



PART NUMBER SYSTEM

NST06 D J 103 H 3435 TR F

- F — RoHS compliant
- TR — Packaging TR: Tape and Reel
- 3435 — Beta Value
- H — Beta Value Tolerance: F=±1%, H=±3%
- 103 — Resistance Value Code (E-24 Standard Values)
- J — Resistance Value Tolerance: F=±1%, H=±3%, J=±5%, K=±10%
- D — Temperature Characteristic: D = +25°C ~ +50°C, A = +25°C ~ +85°C, E = +25°C ~ +105°C
- NST06 — Series

NST02 (0201 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

NST04 Part Number	Resistance Value +25°C	Beta Value (B25/50)	Maximum Operating Current (mA)	Termal Time Constant (sec.)	Dissipation Factor (mW/°C)	Rated Power (mW)
NST02_ _103_338TRF	10K	3380	0.31	<3sec	1	100
NST02_ _223_338TRF	22K	3380	0.22			
NST02_ _223_390TRF	22K	3900	0.22			
NST02_ _473_395TRF	47K	3950	0.12			
NST02_ _473_410TRF	47K	4100	0.12			
NST02_ _683_415TRF	68K	4150	0.11			
NST02_ _683_425TRF	68K	4250	0.11			
NST02_ _104_415TRF	100K	4150	0.10			
NST02_ _104_425TRF	100K	4250	0.10			
NST02_ _224_425TRF	220K	4250	0.06			

_ _ Insert beta temp. code (D=+25°C~+50°C, A=+25°C~+85°C, E=+25°C~+105°C) & resistance tol. code (F=1%, H=±3%, J=±5%, K=±10%)

_ Beta tolerance code (F = 1%, H = ±3%)

Contact NIC regarding availability of resistance and beta values not shown.

NST04 (0402 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

NST04 Part Number	Resistance Value +25°C	Beta Value (B25/50)	Maximum Operating Current (mA)	Termal Time Constant (sec.)	Dissipation Factor (mW/°C)	Rated Power (mW)
NST04_ _220_338TRF	22	3380	6.7			
NST04_ _400_338TRF	40	3380	5.0			
NST04_ _101_338TRF	100	3380	3.1			
NST04_ _151_338TRF	150	3380	2.5			
NST04_ _221_345TRF	220	3450	2.1			
NST04_ _331_345TRF	330	3450	1.7			
NST04_ _471_345TRF	470	3450	1.4			
NST04_ _681_345TRF	680	3450	1.2			
NST04_ _102_345TRF	1K	3450	1.0			
NST04_ _152_395TRF	1.5K	3950	0.81			
NST04_ _222_395TRF	2.2K	3950	0.67			
NST04_ _332_395TRF	3.3K	3950	0.55			
NST04_ _472_395TRF	4.7K	3950	0.46			
NST04_ _682_395TRF	6.8K	3950	0.38	<3sec	1	100
NST04_ _103_338TRF	10K	3380	0.31			
NST04_ _153_345TRF	15K	3450	0.25			
NST04_ _223_345TRF	22K	3450	0.21			
NST04_ _333_350TRF	33K	3500	0.14			
NST04_ _473_410TRF	47K	4100	0.12			
NST04_ _503_410TRF	50K	4100	0.12			
NST04_ _683_415TRF	68K	4150	0.11			
NST04_ _104_415TRF	100K	4150	0.10			
NST04_ _154_415TRF	150K	4150	0.08			
NST04_ _224_425TRF	220K	4250	0.06			
NST04_ _334_430TRF	330K	4300	0.05			
NST04_ _474_435TRF	470K	4350	0.04			
NST04_ _684_440TRF	680K	4400	0.03			

_ _ Insert Beta temp. code (D=+25°C~+50°C, A=+25°C~+85°C, E=+25°C~+105°C) & resistance tol. code (F=1%, H=±3%, J=±5%, K=±10%)

_ Insert Beta tolerance code (F = 1%, H = ±3%)

Contact NIC regarding availability of resistance and beta values not shown.

NST06 (0603 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

NST04 Part Number	Resistance Value +25°C	Beta Value (B25/50)	Maximum Operating Current (mA)	Termal Time Constant (sec.)	Dissipation Factor (mW/°C)	Rated Power (mW)
NST06_ _101_338TRF	100	3380	3.1	<5sec	1	100
NST06_ _151_338TRF	150	3380	2.5			
NST06_ _221_345TRF	220	3450	2.1			
NST06_ _331_345TRF	330	3450	1.7			
NST06_ _471_345TRF	470	3450	1.4			
NST06_ _681_345TRF	680	3450	1.2			
NST06_ _102_345TRF	1K	3450	1.0			
NST06_ _152_345TRF	1.5K	3450	0.81			
NST06_ _222_395TRF	2.2K	3950	0.67			
NST06_ _302_395TRF	3K	3950	0.55			
NST06_ _332_395TRF	3.3K	3950	0.55			
NST06_ _472_395TRF	4.7K	3950	0.46			
NST06_ _502_395TRF	5K	3950	0.44			
NST06_ _682_395TRF	6.8K	3950	0.38			
NST06_ _103_345TRF	10K	3450	0.31			
NST06_ _103_395TRF	10K	3950	0.33			
NST06_ _153_395TRF	15K	3950	0.25			
NST06_ _223_405TRF	22K	4050	0.21			
NST06_ _333_405TRF	33K	4050	0.17			
NST06_ _473_415TRF	47K	4150	0.14			
NST06_ _503_415TRF	50K	4150	0.13			
NST06_ _683_415TRF	68K	4150	0.12			
NST06_ _104_425TRF	100K	4250	0.10			
NST06_ _154_430TRF	150K	4300	0.08			
NST06_ _224_435TRF	220K	4350	0.06			
NST06_ _334_440TRF	330K	4400	0.05			
NST06_ _474_450TRF	470K	4500	0.04			
NST06_ _684_450TRF	680K	4500	0.03			

_ _ Insert beta temp. code (D=+25°C~+50°C, A=+25°C~+85°C, E=+25°C~+105°C) & resistance tol. code (F=1%, H=±3%, J=±5%, K=±10%)

_ Beta tolerance code (F = 1%, H = ±3%)

Contact NIC regarding availability of resistance and beta values not shown.

NST10 (0805 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

NST04 Part Number	Resistance Value +25°C	Beta Value (B25/50)	Maximum Operating Current (mA)	Termal Time Constant (sec.)	Dissipation Factor (mW/°C)	Rated Power (mW)
NST10_ _101_338TRF	100	3380	4.0	<5sec	2	200
NST10_ _151_338TRF	150	3380	3.5			
NST10_ _221_345TRF	220	3450	3.0			
NST10_ _331_345TRF	330	3450	2.5			
NST10_ _471_345TRF	470	3450	2.0			
NST10_ _681_345TRF	680	3450	1.7			
NST10_ _102_345TRF	1K	3450	1.4			
NST10_ _152_395TRF	1.5K	3950	1.2			
NST10_ _202_395TRF	2K	3950	1.0			
NST10_ _222_395TRF	2.2K	3950	0.9			
NST10_ _332_395TRF	3.3K	3950	0.72			
NST10_ _472_395TRF	4.7K	3950	0.65			
NST10_ _502_395TRF	5K	3950	0.60			
NST10_ _682_395TRF	6.8K	3950	0.50			
NST10_ _103_345TRF	10K	3450	0.40			
NST10_ _103_395TRF	10K	3950	0.44			
NST10_ _153_350TRF	15K	3500	0.32			
NST10_ _223_405TRF	22K	4050	0.31			
NST10_ _333_405TRF	33K	4050	0.24			
NST10_ _473_415TRF	47K	4150	0.20			
NST10_ _503_415TRF	50K	4150	0.18			
NST10_ _683_415TRF	68K	4150	0.16			
NST10_ _104_425TRF	100K	4250	0.14			
NST10_ _154_430TRF	150K	4300	0.11			
NST10_ _224_450TRF	220K	4350	0.08			
NST10_ _334_440TRF	330K	4400	0.06			
NST10_ _474_450TRF	470K	4500	0.05			
NST10_ _684_450TRF	680K	4500	0.04			

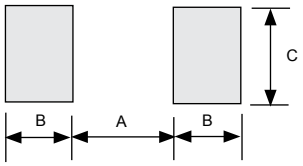
_ _ Insert beta temp. code (D=+25°C~+50°C, A=+25°C~+85°C, E=+25°C~+105°C) & resistance tol. code (F=1%, H=±3%, J=±5%, K=±10%)

_ Beta tolerance code (F = 1%, H = ±3%)

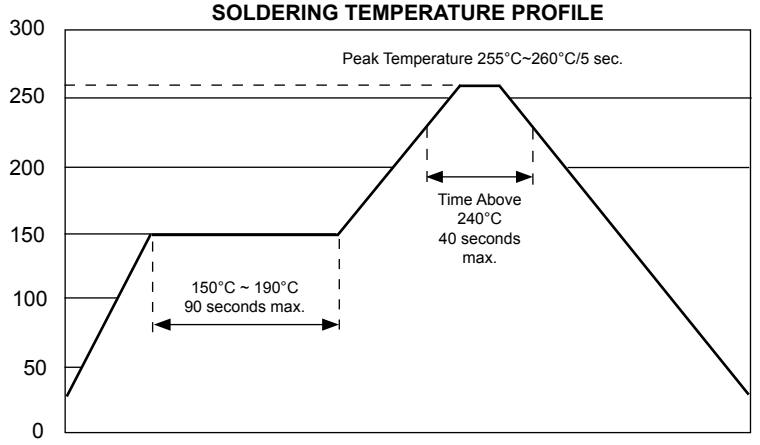
Contact NIC regarding availability of resistance and beta values not shown.

LAND PATTERN DIMENSIONS (mm)

Type	A	B	C
NST02	0.20 ~ 0.30	0.20 ~ 0.30	0.30 ~ 0.35
NST04	0.45 ~ 0.55	0.40 ~ 0.50	0.45 ~ 0.55
NST06	0.60 ~ 0.80	0.60 ~ 0.80	0.60 ~ 0.80
NST10	0.80 ~ 1.20	0.80 ~ 1.20	0.90 ~ 1.60

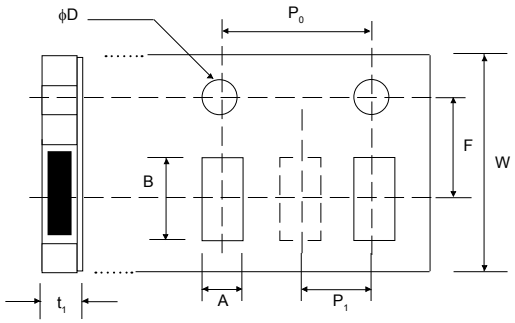


RECOMMENDED REFLOW SOLDERING TEMPERATURE PROFILE



CARRIER TAPE DIMENSIONS (mm)

Type	A	B	W	F	E	P_1	P_0	ϕD	T_1
NST02	0.40 ± 0.10	0.70 ± 0.10	8.00 ±0.30	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05	4.00 ±0.10	1.5 +0.1/-0	0.55 max.
NST04	0.65 ± 0.05	1.15 ± 0.05							0.80 max.
NST06	1.00 ± 0.10	1.80 ± 0.10				4.00 ±0.10			1.10 max.
NST10	1.50 ± 0.10	2.30 ± 0.10							



REEL DIMENSIONS (mm) AND QUANTITY

Type	A ± 2.0	B ± 2.0	C ±0.20	W ±1.5	Quantity
NST02	178	58	13.5	9.0	15,000
NST04					10,000
NST06					4,000
NST10