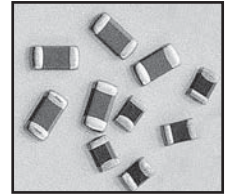


FEATURES

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

RoHS Compliant
includes all homogeneous materials



*See Part Number System for Details

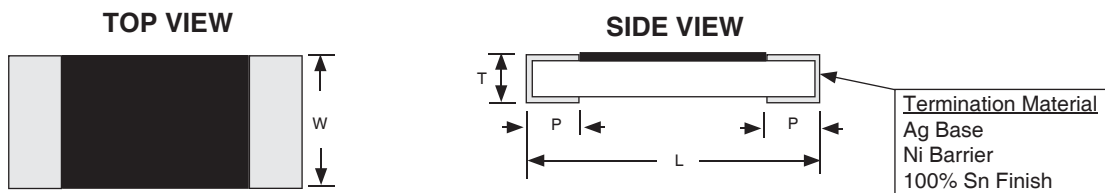
CHARACTERISTICS AND PERFORMANCE

| Series | NST04 | NST06 | NST10 |
|---|--|--------------|--------------|
| EIA Size | 0402 | 0603 | 0805 |
| Resistance Range (+25°C) | 22Ω ~ 680KΩ | 100Ω ~ 680KΩ | 100Ω ~ 680KΩ |
| Power Rating (+25°C) | 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 | 2mW/°C |
| Thermal Time Constant | <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 ~ 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 | | | |

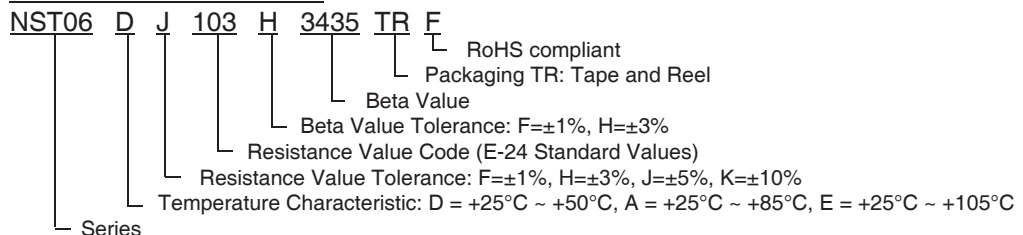
DIMENSIONS (mm)

| Series | EIA Size | L | W | T max. | P |
|--------|----------|------------|------------|------------|------------|
| NST04 | 0402 | 1.0 ± 0.15 | 0.5 ± 0.15 | 0.5 ± 0.15 | 0.25 ± 0.1 |
| NST06 | 0603 | 1.6 ± 0.15 | 0.8 ± 0.15 | 0.8 ± 0.15 | 0.3 ± 0.2 |
| NST10 | 0805 | 2.0 ± 0.2 | 1.25 ± 0.2 | 0.85 ± 0.2 | 0.5 ± 0.3 |

Link: RT Tables



PART NUMBER SYSTEM



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 | <3sec | 1 | 100 |
| NST04__400_338TRF | 40 | 3380 | 5 | | | |
| 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 | | | |
| 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 | | | |
| 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 | 0.1 | | | |
| 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) | Thermal 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 | | | |
| 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 | 0.1 | | | |
| 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) | Thermal Time Constant (sec.) | Dissipation Factor (mW/°C) | Rated Power (mW) |
|-------------------|---------------------------|------------------------|--------------------------------------|------------------------------------|----------------------------------|------------------------|
| NST10__101_338TRF | 100 | 3380 | 4 | <5sec | 2 | 200 |
| NST10__151_338TRF | 150 | 3380 | 3.5 | | | |
| NST10__221_345TRF | 220 | 3450 | 3 | | | |
| NST10__331_345TRF | 330 | 3450 | 2.5 | | | |
| NST10__471_345TRF | 470 | 3450 | 2 | | | |
| 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 | | | |
| 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 | 0.6 | | | |
| NST10__682_395TRF | 6.8K | 3950 | 0.5 | | | |
| NST10__103_345TRF | 10K | 3450 | 0.4 | | | |
| 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 | 0.2 | | | |
| 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 | | | |

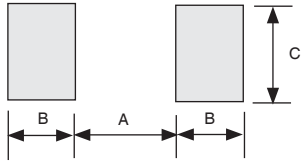
_ _ Insert beta temp. code (D=+25°C~+50°C, A=+25°C~+85°C, E=+25°C~+105°C) & resistance tol. code (F=1%, H=±3%, J=±5%, K=±10%)

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

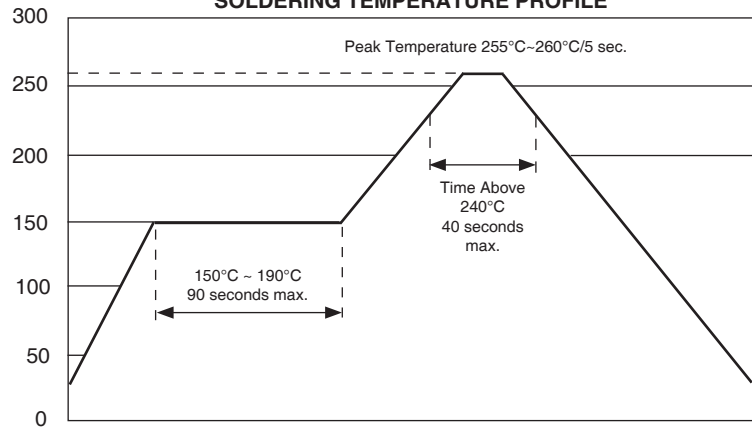
Contact NIC regarding availability of resistance and beta values not shown.

LAND PATTERN DIMENSIONS (mm)

| Type | A | B | C |
|-------|-------------|-------------|-------------|
| NST04 | 0.45 ~ 0.55 | 0.40 ~ 0.50 | 0.45 ~ 0.55 |
| NST06 | 0.6 ~ 0.8 | 0.6 ~ 0.8 | 0.6 ~ 0.8 |
| NST10 | 0.8 ~ 1.2 | 0.8 ~ 1.2 | 0.9 ~ 1.6 |

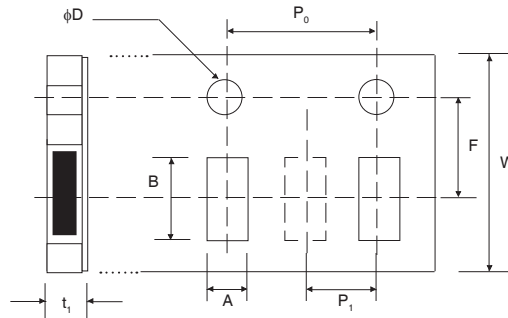


RECOMMENDED REFLOW SOLDERING TEMPERATURE PROFILE



CARRIER TAPE DIMENSIONS (mm)

| Type | A | B | W | F | E | P ₁ | P ₀ | φD | T ₁ |
|-------|------------|------------|------------|------------|------------|----------------|----------------|-------------|----------------|
| NST04 | 0.65 ±0.05 | 1.15 ±0.05 | 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 | 0.80 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 |
|-------|---------|---------|----------|---------|----------|
| NST04 | 178 | 58 | 13.5 | 9.0 | 10,000 |
| NST06 | | | | | 4,000 |
| NST10 | | | | | |

