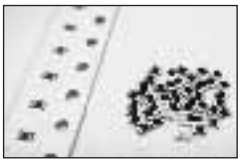
Surface Mount NTC Thermistors

NNT Series

FEATURES

- NEGATIVE TEMPERATURE COEFFICIENT
- FAST RESPONSE TO TEMPERATURE VARIATIONS MAKE THEM IDEALLY FOR TEMPERATURE SENSORS AND COMPENSATORS
- STANDARD EIA 0402 AND 0603 SIZES
- NICKEL BARRIER SOLDER PLATE TERMINATIONS
- TAPE AND REEL FOR AUTOMATIC MOUNTING



RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

CHARACTERISTICS AND PERFORMANCE

Series	NNT04	NNT06
EIA Size	0402	0603
Resistance Range (+25°C)	1K ohm ~ 470K ohm	1K ohm ~ 470K ohm
Power Rating (+25°C)	5mW	5mW
Resistance Tolerance (+25°C)	1% (F), ±2% (G), ±3% (H), 5% (J), 10% (K)	
Operating Temperature Range	-40°C ~ +125°C	
Dissipation Constant	≤3.0mW/°C (power to heat thermistor 1°C, measured at 25°C)	
Typical Thermal Time Constant	≤ 5 seconds	
Beta Temperature Range	+25°C ~ +85°C	
Beta Value Range	2800K ~ 4400K	3100K ~ 4350K
Beta Value Tolerance	±3% (H)	
Resistance to Soldering Heat	+260°C ± 5°C for 5 ±1 seconds, ΔR ≤3%	
Damp Heat	+40°C ± 2°C, 90% ~ 95% RH for 1,000 hours, ΔR ≤3%	
Thermal Shock	-40°C ± 5°C (30 min.) > 25°C ± 5°C (5 min.) > +125°C ± 5°C (30 min.) >25°C ± 5°C (5 min.) 100 Cycles, ΔR ≤3%	
Life Test @ +25°C	1,000 hours ± 24 hrs (no load), after after stablizing for 24 hrs @ +25°C ΔR ≤3%	
High Temperature Storage	+125°C ± 2°C 1,000 hours ± 24 hrs, after stablizing for 24 hrs @ +25°C ΔR ≤5%	

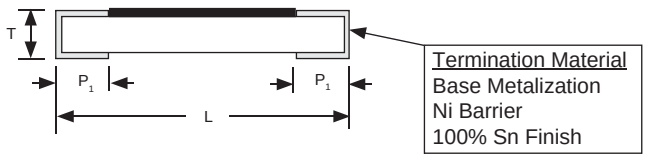
DIMENSIONS (mm)

Series	EIA Size	L	W	T max.	P_1	P_2
NNT04	0402	1.0 ± 0.05	0.50 ± 0.05	0.40	0.20 ± 0.10	0.25 ± 0.10
NNT06	0603	1.6 ± 0.10	0.80 ± 0.10	0.55	0.30 ± 0.20	0.30 ± 0.20

Link: RT Tables

TOP VIEW

SIDE VIEW



Applications Notes & Precautions:

1. To insure accuracy and reliability do not exceed zero power current rating.

2. Do not exceed 5mW power rating or zero power current rating.

3. The Life Test Specification is based on operation at +25°C. Operation at higher temperatures may have an impact on the life expectancy of the component.

4. Component performance should be tested under actual application conditions to determine its suitability for a particular application. Contact NIC is you have questions regarding a particular application.

PART NUMBER SYSTEM

NNT06 A J 103 H 3435 TR F

- F — RoHS compliant
- TR — Packaging TR: Tape and Reel
- 3435 — Beta Value
- H — Beta Value Tolerance: H=±3%
- 103 — Resistance Value Code (E-24 Standard Values)
- J — Resistance Value Tolerance: K=±10%, J=±5%, H=±3%, G=±2%, F=±1%
- A — Temperature Characteristic (A=+25°C ~ +85°C)
- NNT06 — Series

NNT04 (0402 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

NNT Part Number	Resistance Value +25°C	Zero Power Current +25°C (mA)	Beta Value (B25/85)
NNT04A_102H2800TRF	1K ohm	0.100	2800
NNT04A_152H2800TRF	1.5K ohm	0.081	2800
NNT04A_202H2800TRF	2.0K ohm	0.070	2800
NNT04A_222H2800TRF	2.2K ohm	0.067	2800
NNT04A_332H3100TRF	3.3K ohm	0.055	3100
NNT04A_472H3300TRF	4.7K ohm	0.046	3300
NNT04A_502H3435TRF	5.0K ohm	0.044	3435
NNT04A_682H3435TRF	6.8K ohm	0.038	3435
NNT04A_103H3435TRF	10K ohm	0.031	3435
NNT04A_223H3700TRF	22K ohm	0.021	3700
NNT04A_333H3950TRF	33K ohm	0.017	3950
NNT04A_473H3950TRF	47K ohm	0.014	3950
NNT04A_503H4000TRF	50K ohm	0.014	4000
NNT04A_683H4000TRF	68K ohm	0.012	4000
NNT04A_104H4000TRF	100K ohm	0.010	4000
NNT04A_224H4000TRF	220K ohm	0.006	4000
NNT04A_474H4400TRF	470K ohm	0.004	4400

_ Insert code for thermistor resistance tolerance (F = 1%, G = ±2%, H = ±3%, J = ±5%, K = ±10%)

NNT06 (0603 CASE SIZE) STANDARD VALUES AND SPECIFICATIONS

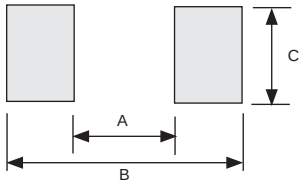
NNT Part Number	Resistance Value +25°C	Zero Power Current +25°C (mA)	Beta Value (B25/85)
NNT06A_102H3100TRF	1K ohm	0.100	3100
NNT06A_152H3100TRF	1.5K ohm	0.081	3100
NNT06A_202H3400TRF	2.0K ohm	0.070	3400
NNT06A_222H3400TRF	2.2K ohm	0.067	3400
NNT06A_332H3400TRF	3.3K ohm	0.055	3400
NNT06A_472H3435TRF	4.7K ohm	0.046	3435
NNT06A_502H3435TRF	5.0K ohm	0.044	3435
NNT06A_682H3435TRF	6.8K ohm	0.038	3435
NNT06A_103H3435TRF	10K ohm	0.031	3435
NNT06A_223H3950TRF	22K ohm	0.021	3950
NNT06A_333H3950TRF	33K ohm	0.017	3950
NNT06A_473H3950TRF	47K ohm	0.014	3950
NNT06A_503H4000TRF	50K ohm	0.014	4000
NNT06A_683H4000TRF	68K ohm	0.012	4000
NNT06A_104H4000TRF	100K ohm	0.010	4000
NNT06A_204H4000TRF	200K ohm	0.007	4000
NNT06A_224H4000TRF	220K ohm	0.006	4000
NNT06A_474H4350TRF	470K ohm	0.004	4350

_ Insert code for thermistor resistance tolerance (F = 1%, G = ±2%, H = ±3%, J = ±5%, K = ±10%)

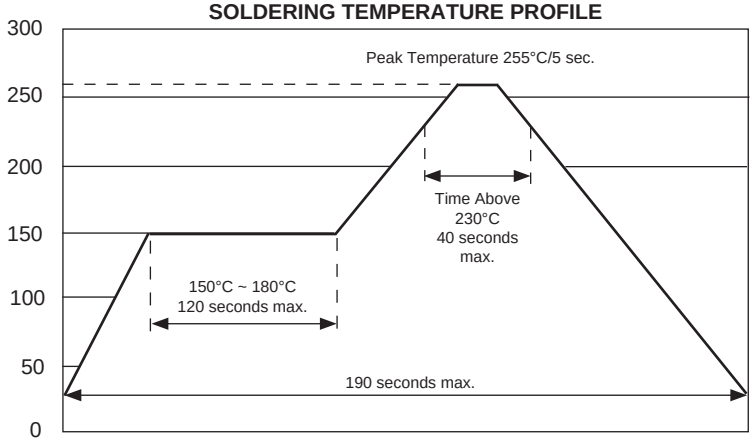
NOTE: TO MAXIMIZE THERMISTOR ACCURACY CURRENT SHOULD BE LIMITED TO THE SPECIFIED ZERO POWER CURRENT SPECIFIED IN THE STANDARD VALUES TABLES

LAND PATTERN DIMENSIONS (mm)

Type	A	B	C
NNT04	0.5 ~ 0.6	1.4 ~ 1.6	0.4 ~ 0.6
NNT06	0.7 ~ 0.9	2.0 ~ 2.2	0.8 ~ 1.0

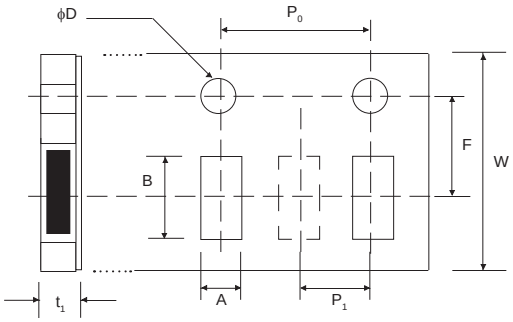


RECOMMENDED REFLOW SOLDERING TEMPERATURE PROFILE



CARRIER TAPE DIMENSIONS (mm)

Type	A	B	W	F	E	P_1	P_0	ϕD	T_1
NNT04	0.7 ±0.05	1.2 ±0.05	8.00 ±0.20	3.50 ±0.05	1.75 ±0.10	2.00 ±0.10	4.00 ±0.10	1.5 +0.1/-0	0.45 ± 0.1
NNT06	1.10 ±0.10	1.90 ±0.10							0.64 ± 0.1



REEL DIMENSIONS (mm) AND QUANTITY

Type	A ± 2.0	B +1/-0	C ±0.20	W ±1.0	Quantity
NNT04	178	60	13	9.0	10,000
NNT06					5,000