

Data Sheet

Customer:

Product: High Reliability SMD NTC Thermistor-NTGH Series

Sizes.: 0402 / 0603 / 0805

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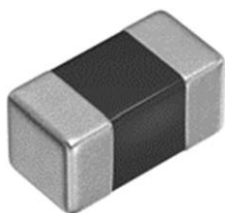
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15-Apr-25	15-Apr-25	15-Apr-25	15-Apr-25	
Mandy Chang	Ben Chang	Ben Chang		

High Reliability SMD NTC Thermistor



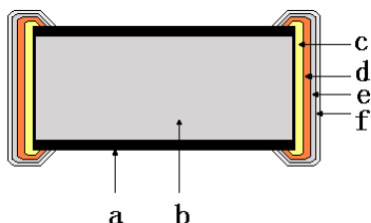
Features

— High reliability, good resistance to mechanical stress and thermal shock.

Applications

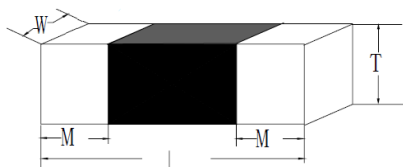
— Rechargeable batteries and supporting systems, LED car lights, small motor, cell phone, Wearable devices.

Construction



a	Glass Layer	d	Soft Terminal Electrode
b	NTC	e	Ni Plating
c	Ag Layer	f	Sn Plating

Dimensions



Unit: mm

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	M (mm)
NTGH02	0402	1.00±0.15	0.50±0.10	0.50±0.10	0.25±0.10
NTGH03	0603	1.60±0.15	0.75±0.15	0.75±0.15	0.30±0.15
NTGH05	0805	2.00±0.20	1.25±0.20	0.75±0.20	0.50±0.20

Part Numbering

NTGH	02	T	103	F	338	F	A
Product Type	Dimensions	Packaging Code	Resistance (25°C)	Resistance Tolerance	B-Constant	B-Constant Tolerance	B-Constant Temperature
	02: 0402 03: 0603 05: 0805	T: Taping Reel	103: 10KΩ 104: 100KΩ 105: 1000KΩ	F: 1% G: 2% H: 3% J: 5% K: 10%	338: 3380K 395: 3950K 405: 4050K 420: 4200K	F: ±1% G: ±2% H: ±3%	A: 25/50°C B: 25/85°C

■Electrical Characteristics

0402 Type(□:Tolerance) / (25/50℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/50℃)	B-Constant Tolerance
NTGH02T103□338□A	10KΩ	±1, 2, 3, 5, 10%	3380K	±1, 2, 3%
NTGH02T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH02T104□395□A	100KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH02T154□395□A	150KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH02T474□405□A	470KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTGH02T105□430□A	1000KΩ	±1, 2, 3, 5, 10%	4300K	±1, 2, 3%
NTGH02T155□450□A	1500KΩ	±1, 2, 3, 5, 10%	4500K	±1, 2, 3%

0603 Type(□:Tolerance) / (25/50℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/50℃)	B-Constant Tolerance
NTGH03T103□338□A	10KΩ	±1, 2, 3, 5, 10%	3380K	±1, 2, 3%
NTGH03T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH03T104□405□A	100KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTGH03T154□395□A	150KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH03T474□420□A	470KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTGH03T684□420□A	680KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTGH03T105□430□A	1000KΩ	±1, 2, 3, 5, 10%	4300K	±1, 2, 3%

0805 Type(□:Tolerance) / (25/50℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/50℃)	B-Constant Tolerance
NTGH05T502□338□A	5KΩ	±1, 2, 3, 5, 10%	3380K	±1, 2, 3%
NTGH05T103□338□A	10KΩ	±1, 2, 3, 5, 10%	3380K	±1, 2, 3%
NTGH05T223□395□A	22KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH05T473□405□A	47KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTGH05T104□395□A	100KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTGH05T154□405□A	150KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTGH05T224□405□A	220KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTGH05T474□415□A	470KΩ	±1, 2, 3, 5, 10%	4150K	±1, 2, 3%
NTGH05T684□430□A	680KΩ	±1, 2, 3, 5, 10%	4300K	±1, 2, 3%
NTGH05T105□450□A	1000KΩ	±1, 2, 3, 5, 10%	4500K	±1, 2, 3%

■Electrical Characteristics

0402 Type(□:Tolerance) / (25/85℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/85℃)	B-Constant Tolerance
NTGH02T103□344□B	10KΩ	±1, 2, 3, 5, 10%	3435K	±1, 2, 3%
NTGH02T473□398□B	47KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH02T104□398□B	100KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH02T154□398□B	150KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH02T474□408□B	470KΩ	±1, 2, 3, 5, 10%	4080K	±1, 2, 3%
NTGH02T105□433□B	1000KΩ	±1, 2, 3, 5, 10%	4330K	±1, 2, 3%
NTGH02T155□453□B	1500KΩ	±1, 2, 3, 5, 10%	4530K	±1, 2, 3%

0603 Type(□:Tolerance) / (25/85℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/85℃)	B-Constant Tolerance
NTGH03T103□344□B	10KΩ	±1, 2, 3, 5, 10%	3435K	±1, 2, 3%
NTGH03T473□398□B	47KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH03T104□408□B	100KΩ	±1, 2, 3, 5, 10%	4080K	±1, 2, 3%
NTGH03T154□398□B	150KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH03T474□423□B	470KΩ	±1, 2, 3, 5, 10%	4230K	±1, 2, 3%
NTGH03T684□423□B	680KΩ	±1, 2, 3, 5, 10%	4230K	±1, 2, 3%
NTGH03T105□433□B	1000KΩ	±1, 2, 3, 5, 10%	4330K	±1, 2, 3%

0805 Type(□:Tolerance) / (25/85℃)

Part No.	Resistance (25℃)	Resistance Tolerance	B-Constant (25/85℃)	B-Constant Tolerance
NTGH05T502□344□B	5KΩ	±1, 2, 3, 5, 10%	3435K	±1, 2, 3%
NTGH05T103□344□B	10KΩ	±1, 2, 3, 5, 10%	3435K	±1, 2, 3%
NTGH05T223□398□B	22KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH05T473□408□B	47KΩ	±1, 2, 3, 5, 10%	4080K	±1, 2, 3%
NTGH05T104□398□B	100KΩ	±1, 2, 3, 5, 10%	3980K	±1, 2, 3%
NTGH05T154□408□B	150KΩ	±1, 2, 3, 5, 10%	4080K	±1, 2, 3%
NTGH05T224□408□B	220KΩ	±1, 2, 3, 5, 10%	4080K	±1, 2, 3%
NTGH05T474□418□B	470KΩ	±1, 2, 3, 5, 10%	4180K	±1, 2, 3%
NTGH05T684□433□B	680KΩ	±1, 2, 3, 5, 10%	4330K	±1, 2, 3%
NTGH05T105□453□B	1000KΩ	±1, 2, 3, 5, 10%	4530K	±1, 2, 3%

■ Environmental Characteristics

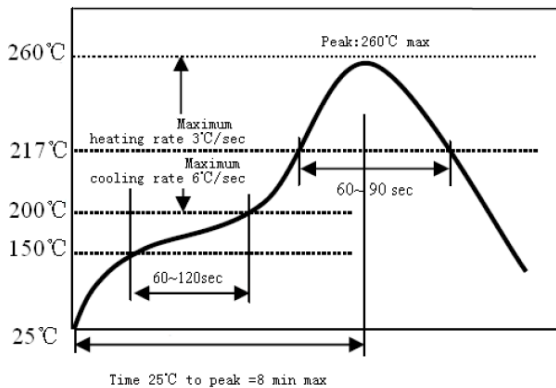
Item	Performances	Conditions												
Solder ability	At least 95% of terminal electrode should be covered with solder	Preheating Temp: 120~150℃ Preheating Time: 60 sec Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder Soldering temperature : 245±5℃ Immersion tin depth: 10mm Duration : 5 ± 1 sec. Dip performance to a flux of about: 3 ~ 5 sec												
Resistance to Soldering	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	Preheating Temp: 120~150℃ Preheating Time: 60 sec Solder 96.5%Sn/3.0%Ag/0.5%Cu of the Sn solder Soldering temperature : 260±5℃ Immersion tin depth: 10mm Duration of immersion : 10 ± 1 sec Dip performance to a flux of about: 3 ~ 5 sec												
Adhesion of Electrode	The termination and body should be no damage	<table border="1"> <thead> <tr> <th>Type</th><th>Force(N)</th><th>Times(s)</th></tr> </thead> <tbody> <tr> <td>0402</td><td>4</td><td>10±</td></tr> <tr> <td>0603</td><td>5</td><td>10±</td></tr> <tr> <td>0805</td><td>6</td><td>10±</td></tr> </tbody> </table>	Type	Force(N)	Times(s)	0402	4	10±	0603	5	10±	0805	6	10±
Type	Force(N)	Times(s)												
0402	4	10±												
0603	5	10±												
0805	6	10±												
Vibration	No mechanical damage R ₂₅ change shall be less than ±5% B-constant(B _{25/50}) change shall be less than ±2%	Frequency : 10~55~10Hz Amplitude : 1.50mm Time :Vibrated for a period of 2 hrs in three directions perpendicularly intersecting each other.												
Resistance to Flexure	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	<table border="1"> <thead> <tr> <th>Type</th><th>Camber(mm)</th><th>Time(s)</th></tr> </thead> <tbody> <tr> <td>0402 / 0603</td><td>1</td><td>30</td></tr> <tr> <td>0805</td><td>2</td><td>30</td></tr> </tbody> </table> Condition: print circuit board Pressing speed: 0.5 mm/s	Type	Camber(mm)	Time(s)	0402 / 0603	1	30	0805	2	30			
Type	Camber(mm)	Time(s)												
0402 / 0603	1	30												
0805	2	30												
High Temperature	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	Temp: 125±2℃ Test Time: 1000+24/-0 hrs												
Low Temperature	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	Temp: -40±2℃ Test Time: 1000+24/-0 hrs												
Static Humidity	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	Temp: 60±2℃ Humidity: 90~95%RH Test Time: 1000+24/-0 hrs												
Temperature Shock	No mechanical damage R ₂₅ change shall be less than ±5% B-constant change shall be less than ±2%	-40℃×30±3min→25℃×5±3min →125℃×30±3min→25℃×5±3min 32cycles												

■ Storage Temperature: -10 ~ +40℃; Humidity 30%~70%RH

■ Operating Temperature:-40~125℃

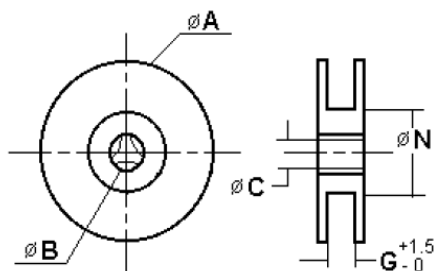
■ Shelf life: 6 months max

■ Reflow Soldering Condition



■Packaging

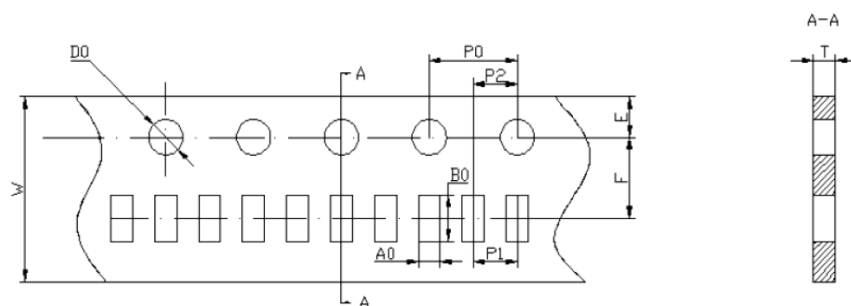
Reel Specifications & Packaging Quantity



Unit: mm

Type	A	B	C	N	G	Packaging
						Quality
NTGH02	178.0±2.0	22.0±2.0	12.5±1.5	57.0±2.0	8	10,000
NTGH03	178.0±2.0	22.0±2.0	12.5±1.5	57.0±2.0	8	4,000
NTGH05	178.0±2.0	22.0±2.0	12.5±1.5	57.0±2.0	8	4,000

Paper Tape Specifications

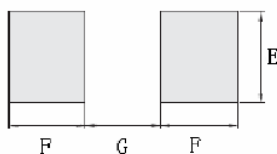


Unit: mm

Type	A0	B0	W	F	E	P1	P2	P0	D0	T
NTGH02	0.65±0.1	1.15±0.1	8.0±0.2	3.5±0.1	1.75±0.2	2.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.60±0.1
NTGH03	1.10±0.2	1.90±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1
NTGH05	1.50±0.2	2.30±0.2	8.0±0.2	3.5±0.1	1.75±0.2	4.0±0.2	2.0±0.1	4.0±0.2	1.55±0.1	0.95±0.1

■Recommended Maximum Dimensions

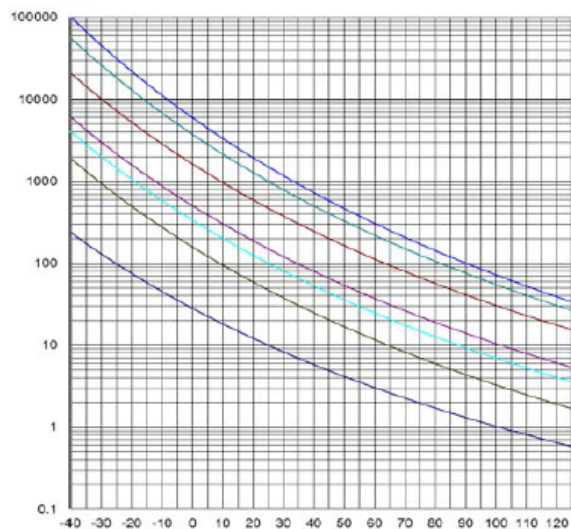
Unit: mm



Type	E	F	G
NTGH02	0.60	0.60	0.50
NTGH03	1.00	1.00	1.00
NTGH05	1.40	1.20	1.00

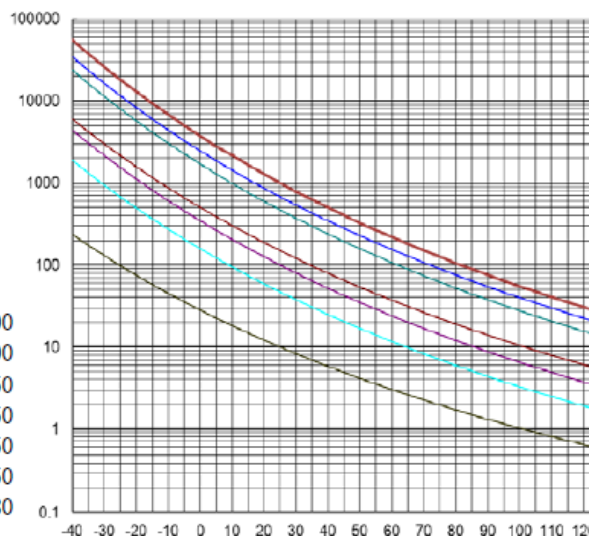
■ Resistance-Temperature Characteristics(25/50°C)

NTGH02 Series



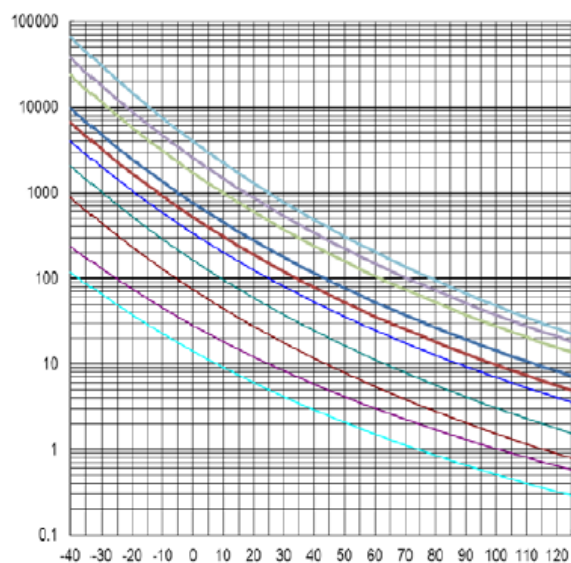
155-4500
105-4300
474-4050
154-3950
104-3950
473-3950
103-3380

NTGH03 Series



105-4300
684-4200
474-4200
154-3950
104-4050
473-3950
103-3380

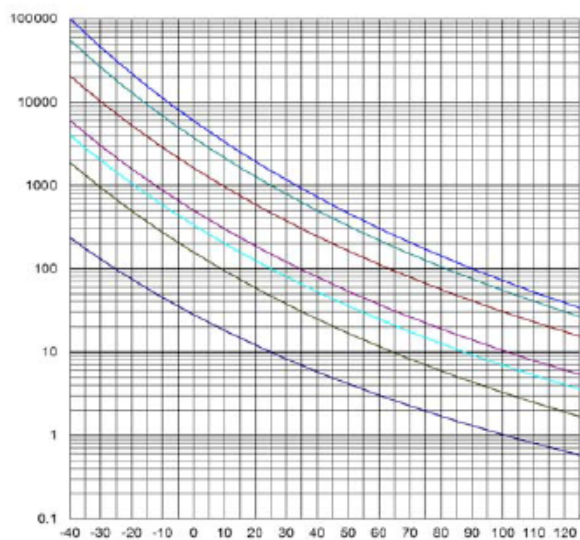
NTGH05 Series



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684-4300
474-4150
224-4050
154-4050
104-3950
473-4050
223-3950
103-3380
502-3380

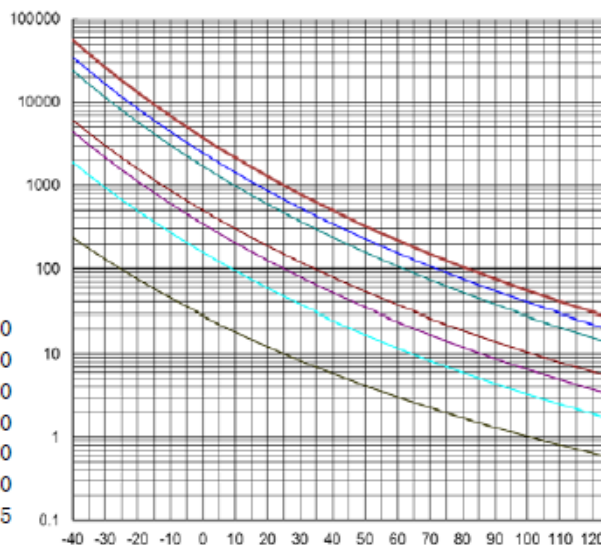
■ Resistance-Temperature Characteristics(25/85°C)

NTGH02 Series



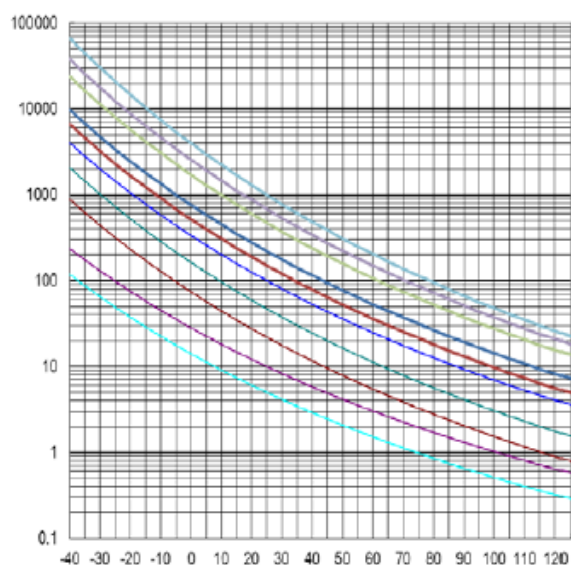
155-4530
105-4330
474-4080
154-3980
104-3980
473-3980
103-3435

NTGH03 Series



105-4330
684-4230
474-4230
154-3980
104-4080
473-3980
103-3435

NTGH05 Series



105-4530
684-4330
474-4180
224-4080
154-4080
104-3980
473-4080
223-3980
103-3435
502-3435

REVISION HISTORY

<u>REVISION</u>	<u>DATE</u>	<u>CHANGE NOTIFICATION</u>	<u>DESCRIPTION</u>
Version A1	Apr 15 ,2025		-Add Shelf life.