

## Data Sheet

**Customer:**

**Product:** SMD NTC Thermistor –NTG Series

**Sizes.:** 0402/0603/0805/1206

**Issued Date:** 20-Oct-22

**Edition:** REV.A1



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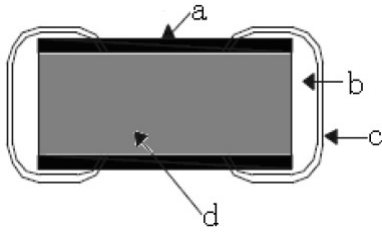
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20-Oct-22	20-Oct-22	20-Oct-22		
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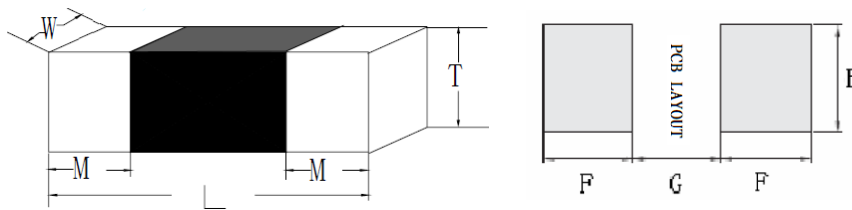
## SMD NTC Thermistor

### Construction



a	Glass Layer	c	Ni/Sn Plating
b	Ag Layer	d	NTC

### Dimensions



Unit: mm

Type	Size (Inch)	L	W	T	M	E	F	G
NTG02	0402	1.00±0.15	0.50±0.10	0.50±0.10	0.25±0.10	0.60	0.60	0.50
NTG03	0603	1.60±0.15	0.75±0.15	0.75±0.15	0.30±0.15	1.00	1.00	1.00
NTG05	0805	2.00±0.20	1.25±0.20	0.75±0.20	0.50±0.20	1.40	1.20	1.00
NTG06	1206	3.20±0.20	1.60±0.20	0.75±0.20	0.50±0.20	1.80	1.20	2.00

### Part Numbering

<b>NTG</b>	<b>05</b>	<b>T</b>	<b>102</b>	<b>J</b>	<b>320</b>	<b>H</b>	<b>A</b>
Product Type	Dimensions	Packaging Code	Resistance (25°C)	Resistance Tolerance	B Value Constant	B Value Tolerance	B Value Temperature
	02: 0402 03: 0603 05: 0805 06: 1206	T: Taping Reel	102: 1KΩ 103: 10KΩ 104: 100KΩ	F: ±1% G: ±2% H: ±3% J: ±5% K: ±10%	320: 3200K 395: 3950K 405: 4050K	F: ±1% G: ±2% H: ±3%	A: 25/50°C

**Electrical Characteristics**

0402 Type(□:Tolerance):

Part No.	Zero Power Resistance (25°C)	Zero Power Resistance Tolerance	B Value Constant (25/50°C)	B Value Constant Tolerance
NTG02T103□390□A	10KΩ	±1, 2, 3, 5, 10%	3900K	±1, 2, 3%
NTG02T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG02T503□395□A	50KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG02T683□395□A	68KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG02T104□390□A	100KΩ	±1, 2, 3, 5, 10%	3900K	±1, 2, 3%
NTG02T154□410□A	150KΩ	±1, 2, 3, 5, 10%	4100K	±1, 2, 3%
NTG02T224□395□A	220KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG02T334□405□A	330KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG02T474□405□A	470KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG02T684□420□A	680KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%

0603 Type(□:Tolerance):

Part No.	Zero Power Resistance (25°C)	Zero Power Resistance Tolerance	B Value Constant (25/50°C)	B Value Constant Tolerance
NTG03T102□320□A	1KΩ	±1, 2, 3, 5, 10%	3200K	±1, 2, 3%
NTG03T202□340□A	2KΩ	±1, 2, 3, 5, 10%	3400K	±1, 2, 3%
NTG03T222□345□A	2.2KΩ	±1, 2, 3, 5, 10%	3450K	±1, 2, 3%
NTG03T332□338□A	3.3KΩ	±1, 2, 3, 5, 10%	3380K	±1, 2, 3%
NTG03T472□345□A	4.7KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG03T472□395□A	4.7KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T502□345□A	5.0KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG03T502□395□A	5.0KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T682□395□A	6.8KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T103□350□A	10KΩ	±1, 2, 3, 5, 10%	3500K	±1, 2, 3%
NTG03T103□360□A	10KΩ	±1, 2, 3, 5, 10%	3600K	±1, 2, 3%
NTG03T223□330□A	22KΩ	±1, 2, 3, 5, 10%	3300K	±1, 2, 3%
NTG03T303□395□A	30KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T333□395□A	33KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T503□395□A	50KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T683□395□A	68KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T104□395□A	100KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T154□395□A	150KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG03T204□405□A	200KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG03T224□405□A	220KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG03T334□405□A	330KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG03T474□420□A	470KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTG03T564□420□A	560KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTG03T684□420□A	680KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%

**■Electrical Characteristics**

0805 Type(□:Tolerance):

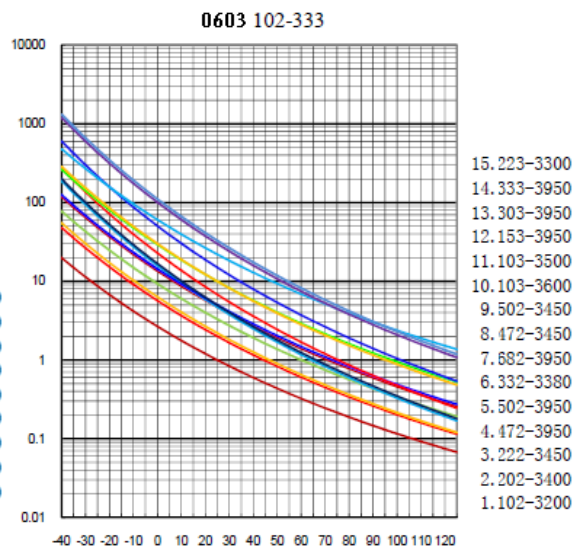
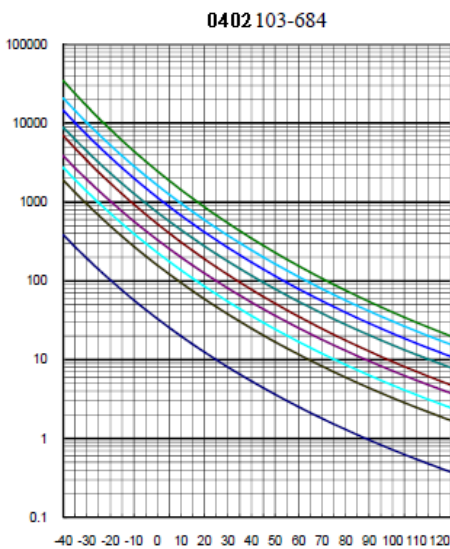
Part No.	Zero Power Resistance (25°C)	Zero Power Resistance Tolerance	B Value Constant (25/50°C)	B Value Constant Tolerance
NTG05T801□320□A	0.8KΩ	±1, 2, 3, 5, 10%	3200K	±1, 2, 3%
NTG05T102□320□A	1.0KΩ	±1, 2, 3, 5, 10%	3200K	±1, 2, 3%
NTG05T202□340□A	2.0KΩ	±1, 2, 3, 5, 10%	3400K	±1, 2, 3%
NTG05T222□345□A	2.2KΩ	±1, 2, 3, 5, 10%	3450K	±1, 2, 3%
NTG05T332□340□A	3.3KΩ	±1, 2, 3, 5, 10%	3400K	±1, 2, 3%
NTG05T472□345□A	4.7KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG05T472□395□A	4.7KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T502□345□A	5.0KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG05T502□395□A	5.0KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T682□395□A	6.8KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T103□350□A	10KΩ	±1, 2, 3, 5, 10%	3500K	±1, 2, 3%
NTG05T103□360□A	10KΩ	±1, 2, 3, 5, 10%	3600K	±1, 2, 3%
NTG05T103□395□A	10KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T123□350□A	12KΩ	±1, 2, 3, 5, 10%	3500K	±1, 2, 3%
NTG05T223□395□A	22KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T303□395□A	30KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T333□395□A	33KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T503□395□A	50KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T683□395□A	68KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T104□395□A	100KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T124□395□A	120KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T154□395□A	150KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG05T204□405□A	200KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG05T224□405□A	220KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG05T304□415□A	300KΩ	±1, 2, 3, 5, 10%	4150K	±1, 2, 3%
NTG05T334□415□A	330KΩ	±1, 2, 3, 5, 10%	4150K	±1, 2, 3%
NTG05T474□415□A	470KΩ	±1, 2, 3, 5, 10%	4150K	±1, 2, 3%
NTG05T564□415□A	560KΩ	±1, 2, 3, 5, 10%	4150K	±1, 2, 3%
NTG05T684□420□A	680KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%

**Electrical Characteristics**

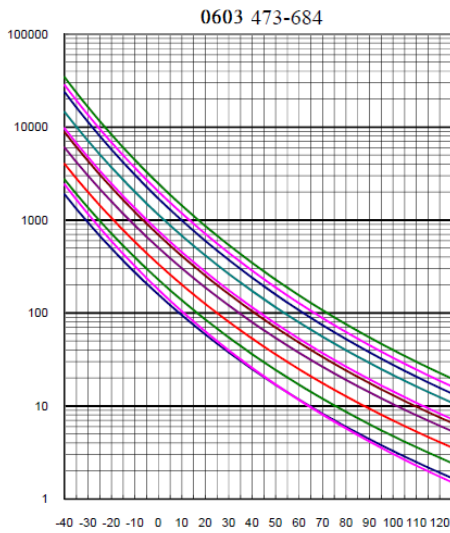
1206 Type(□:Tolerance):

Part No.	Zero Power Resistance (25°C)	Zero Power Resistance Tolerance	B Value Constant (25/50°C)	B Value Constant Tolerance
NTG06T472□345□A	4.7KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG06T472□390□A	4.7KΩ	±1, 2, 3, 5, 10%	3900K	±1, 2, 3%
NTG06T502□345□A	5.0KΩ	±1, 2, 3, 5, 10%	3450K	±3%
NTG06T502□390□A	5.0KΩ	±1, 2, 3, 5, 10%	3900K	±1, 2, 3%
NTG06T682□390□A	6.8KΩ	±1, 2, 3, 5, 10%	3900K	±1, 2, 3%
NTG06T103□360□A	10KΩ	±1, 2, 3, 5, 10%	3600K	±1, 2, 3%
NTG06T103□395□A	10KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T223□395□A	22KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T333□395□A	33KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T473□395□A	47KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T503□395□A	50KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T683□395□A	68KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T104□395□A	100KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T154□395□A	150KΩ	±1, 2, 3, 5, 10%	3950K	±1, 2, 3%
NTG06T224□405□A	220KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG06T334□405□A	330KΩ	±1, 2, 3, 5, 10%	4050K	±1, 2, 3%
NTG06T474□420□A	470KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTG06T564□420□A	560KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%
NTG06T684□420□A	680KΩ	±1, 2, 3, 5, 10%	4200K	±1, 2, 3%

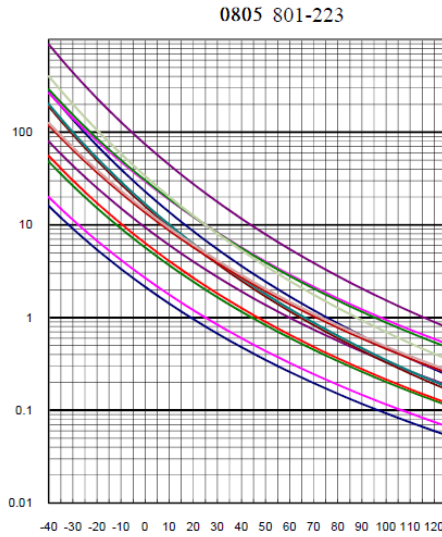
**Resistance-Temperature Characteristics**



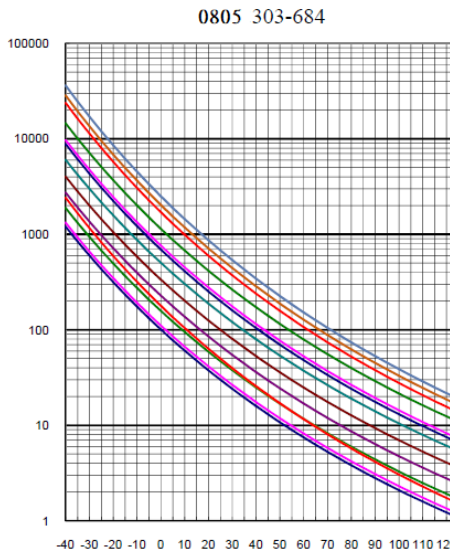
**SMD NTC Thermistor**



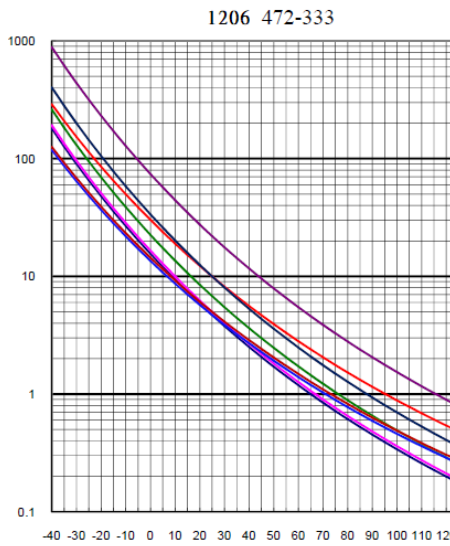
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- 10.560-4200
- 9.474-4200
- 8.334-4050
- 7.224-4050
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- 5.154-3950
- 4.104-3950
- 3.683-3950
- 2.473-3950
- 1.503-3950



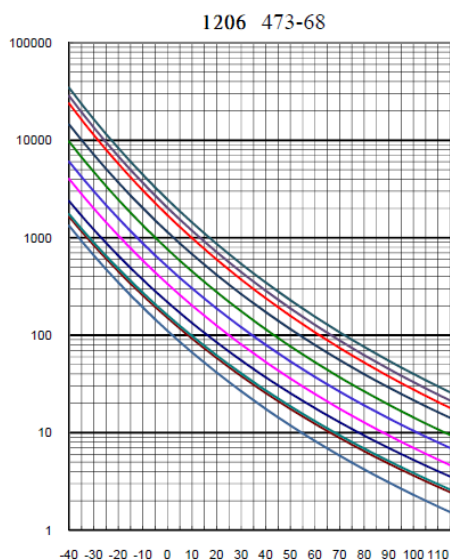
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- 13.103-3500
- 12.103-3600
- 11.103-3950
- 10.502-3450
- 9.472-3450
- 8.682-3950
- 7.332-3400
- 6.502-3950
- 5.472-3950
- 4.222-3450
- 3.202-3400
- 2.102-3200
- 1.801-3200



- 13.684-4200
- 12.564-4200
- 11.474-4200
- 10.334-4050
- 9.224-4050
- 8.204-4050
- 7.154-3950
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- 4.473-3950
- 3.503-3950
- 2.333-3950
- 1.303-3950

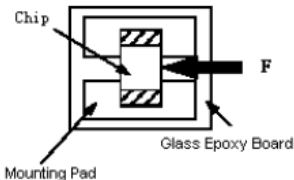
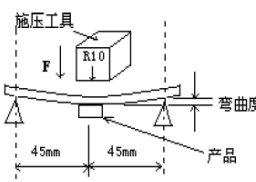


- 8.223-3950
- 7.103-3950
- 6.103-3600
- 5.502-3450
- 4.472-3450
- 3.682-3900
- 2.502-3900
- 1.472-3900



- 11.684-4200
- 10.564-4200
- 9.474-4200
- 8.334-4050
- 7.224-4050
- 6.154-3950
- 5.104-3950
- 4.683-3950
- 3.503-3950
- 2.473-3950
- 1.333-3950

**■ Environmental Characteristics**

Item	Performances	Conditions															
Solderability Test	At least 95% of the electrode on each end of the ceramic chip must be covered with solder	Preheating Temp: 120~150℃ Preheating Time: 60sec 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: 3~5sec															
Resistance to Soldering	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) change shall be less than ±2%	Preheating Temp: 120~150℃ Preheating Time: 60sec 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: 3~5sec															
Adhesion of Electrode	The termination and body should be no damage	<table border="1"> <thead> <tr> <th>Type</th> <th>Force(N)</th> <th>Time(s)</th> </tr> </thead> <tbody> <tr> <td>0402</td> <td>4</td> <td>10±1</td> </tr> <tr> <td>0603</td> <td>5</td> <td>10±1</td> </tr> <tr> <td>0805</td> <td>6</td> <td>10±1</td> </tr> <tr> <td>1206</td> <td>10</td> <td>10±1</td> </tr> </tbody> </table> 	Type	Force(N)	Time(s)	0402	4	10±1	0603	5	10±1	0805	6	10±1	1206	10	10±1
Type	Force(N)	Time(s)															
0402	4	10±1															
0603	5	10±1															
0805	6	10±1															
1206	10	10±1															
Vibration	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) change shall be less than ±2%	Frequency : 10~55~10Hz Amplitude : 1.50mm Applied time : 2 hrs in each X,Y,Z directions															
Resistance to Flexure	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) 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>0.7</td> <td>30</td> </tr> <tr> <td>0805/1206</td> <td>1.0</td> <td>30</td> </tr> </tbody> </table> <p>Condition: print circuit board Pressing speed: 0.5mm/s</p> 	Type	Camber(mm)	Time(s)	0402/0603	0.7	30	0805/1206	1.0	30						
Type	Camber(mm)	Time(s)															
0402/0603	0.7	30															
0805/1206	1.0	30															
High Temperature Resistance	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) change shall be less than ±2%	Temp: 125±2℃ Time: 1000+24/-0hrs															
Low Temperature Resistance	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) change shall be less than ±2%	Temp: -40±2℃ Time: 1000+24/-0hrs															
Static Humidity	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) change shall be less than ±2%	Temp: 60±2℃ Humidity: 90~95%RH Time: 1000+24/-0hrs															
Thermal Shock	No mechanical damage R <sub>25</sub> change shall be less than ±5% B-constant(B <sub>25/50</sub> ) 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

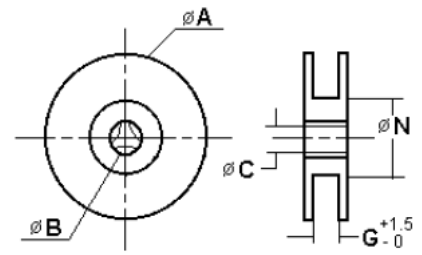
■ Operating Temperature: -40 ~ +125℃

**■Packaging**

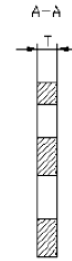
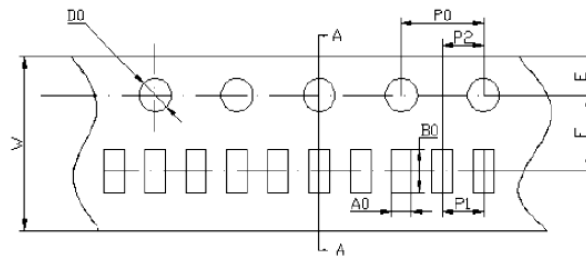
Reel Specifications & Packaging Quantity

Unit: mm

Type	A	B	N	C	G	Packaging
						Quality
NTG02	178.0±2.0	22.0±2.0	57.0±2.0	12.5±1.5	8.0	10K
NTG03	178.0±2.0	22.0±2.0	57.0±2.0	12.5±1.5	8.0	4K
NTG05	178.0±2.0	22.0±2.0	57.0±2.0	12.5±1.5	8.0	4K
NTG06	178.0±2.0	22.0±2.0	57.0±2.0	12.5±1.5	8.0	4K



Paper Tape Specifications



Unit: mm

Type	A0	B0	W	F	E	P1	P2	P0	D0	T
NTG02	0.65±0.1	1.15±0.1	8.0±0.2	3.5±0.1	1.75±0.2	2.0±0.1	2.0±0.1	4.0±0.2	1.55±0.1	0.6±0.1
NTG03	1.1±0.2	1.9±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
NTG05	1.5±0.2	2.3±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
NTG06	1.9±0.2	3.5±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

**■Soldering Condition**

