

# NTC Thermistors, SMD 0402, 0603, 0805, 1206 Chip



## FEATURES

- Extended resistance values available in standard sizes
- Wraparound Ni barrier terminations with 100 % Sn
- Allows design flexibility for use with hybrid circuitry
- High-density monolithic construction with glass overcoat
- Sn90Pb10 plated terminations version available
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## APPLICATIONS

Temperature sensing, protection and compensation in industrial, telecom and consumer applications.

Examples are:

- Battery chargers
- Power suppliers
- Office equipment
- LCD compensation
- In-car entertainment

## DESIGN-IN SUPPORT

For complete curve computation please visit the “My Vishay NTC curve” at: [www.vishay.com/resistors-non-linear/ntc-curve-list/](http://www.vishay.com/resistors-non-linear/ntc-curve-list/) or sent your part number to [thermistor1@vishay.com](mailto:thermistor1@vishay.com) to obtain a calculation spreadsheet.

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C	4.7K to 350K	Ω
Tolerance on $R_{25}$ -value	± 1, ± 2, ± 3, ± 5, ± 10	%
$B_{25/75}$ -value	3477 to 4247	K
$B_{25/85}$ -value	3486 to 4261	K
Tolerance on $B_{25/85}$ - value, $B_{25/75}$ -value	± 3	%
Operating temperature range at zero power (intermittent)	-40 to +125 (150)	°C

NTHS PRODUCT DATA AND $R_{25}$ RESISTANCE RANGE AVAILABILITY								
CURVE	$B_{25/75}$ (K)	$B_{25/85}$ (K)	TCR (%/K)	NTHS0402 (kΩ)	NTHS0603 (kΩ)	NTHS0805 (kΩ)	NTHS1206 (kΩ)	$R_{25} \pm$ TOL. AVAILABILITY
2	3477	3486	-3.84	10 to 12	6.8 to 12	4.7 to 10	6 to 10	3, 5, 10
11	3691	3715	-4.13	30 to 34	22 to 32	15 to 30	20 to 33	3, 5, 10
1	3964	3974	-4.39	68 to 100 <sup>(1)</sup>	50 to 100	33 to 78	38 to 100	1, 2, 3, 5, 10
5	3964	3974	-4.39	47 to 50	40 to 50	25 to 47	30 to 44	3, 5, 10
17	4064	4073	-4.50	250	150 to 220	100 to 200	100 to 220	3, 5, 10
4	4247	4262	-4.67	350	250 to 350	200 to 300	200 to 330	3, 5, 10
Maximum dissipation at 25 °C in mW				80	125	210	280	
Dissipation factor in mW/K				2.0	3.0	3.5	4.0	
Thermal time constant in s				5	8	10	13	

### Note

<sup>(1)</sup> Only  $R_{25}$  tolerance values ± 3 %, ± 5 %, and ± 10 % are available for NTHS0402N01N types

STANDARD RESISTANCE VALUES at 25 °C in Ω									
4.7K	6.8K	12K	20K	30K	47K	68K	150K	220K	330K
5.0K	10K	15K	22K	33K	50K	100K	200K	250K	

### Note

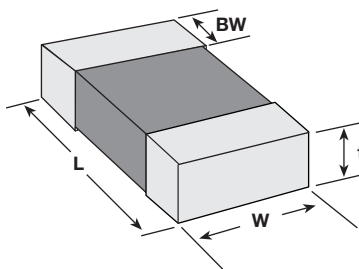
- Most popular and available values

**GLOBAL PART NUMBER INFORMATION**

Global Part Numbering: NTHS1206N02N1002JE (preferred part number format)

N	T	H	S	1	2	0	6	N	0	2	N	1	0	0	2	J	E
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GLOBAL MODEL	CONDUCTOR TYPE	CURVE	CHARACTERISTIC	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING
<b>NTHS0402</b> <b>NTHS0603</b> <b>NTHS0805</b> <b>NTHS1206</b>	Nickel barrier	<b>01</b> <b>02</b> <b>04</b> <b>05</b> <b>11</b> <b>17</b>	<b>N</b>	<b>1002 = 10K</b>	<b>F</b> = ± 1 % <b>G</b> = ± 2 % <b>H</b> = ± 3 % <b>J</b> = ± 5 % <b>K</b> = ± 10 %	<b>F</b> = Lead (Pb)-free, bulk <b>E</b> = Lead (Pb)-free, T/R (2K pcs, full) <b>U</b> = Lead (Pb)-free, T/R (5K pcs, full)  <b>P</b> = Tin/lead, bulk <b>R</b> = Tin/lead, T/R (2K pcs, full) <b>G</b> = Tin/lead, T/R (5K pcs, full)

**DIMENSIONS** in inches (millimeters)


PART NUMBER	L	W	BW	t <sub>max.</sub>
NTHS0402	0.040 ± 0.004 (1.02 ± 0.10)	0.022 ± 0.006 (0.56 ± 0.15)	0.010 ± 0.004 (0.25 ± 0.10)	0.028 (0.71)
NTHS0603	0.063 ± 0.008 (1.60 ± 0.20)	0.031 ± 0.008 (0.80 ± 0.20)	0.010 ± 0.006 (0.25 ± 0.15)	0.039 (1.00)
NTHS0805	0.079 ± 0.008 (2.01 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.012 ± 0.006 (0.30 ± 0.15)	0.057 (1.45)
NTHS1206	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.018 ± 0.008 (0.46 ± 0.20)	0.071 (1.80)

**Note**

- Thickness of the part is depending on the resistance value and curve



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