

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



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

Temperature sensing, protection and compensation in automotive, 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/ or sent your part number to 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 ⁽¹⁾	50 to 100	33 to 78	38 to 100	1, 2, 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

⁽¹⁾ 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

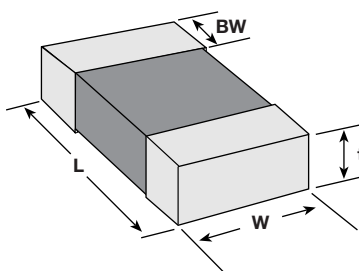
- Most popular and available values

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
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

DIMENSIONS in inches (millimeters)


PART NUMBER	L	W	BW	t _{max.}
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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.