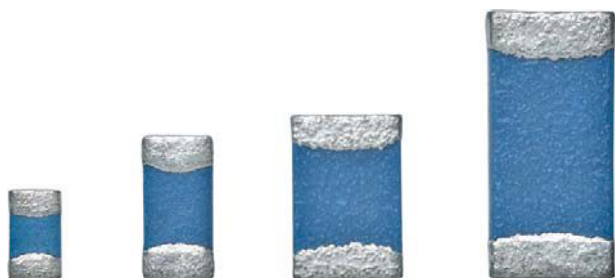


NTC Thermistors, SMD 0402, 0603, 0805, 1206 Chip



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 | 1.0K to 350K | Ω |
| Tolerance on R_{25} -value | ± 1, ± 2, ± 3, ± 5, ± 10 | % |
| $B_{25/75}$ -value | 3181 to 4247 | K |
| $B_{25/85}$ -value | 3185 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 |
| 3 | 3181 | 3185 | - 3.50 | - | 1 to 2 | 1 to 1.5 | 1 to 2 | 5, 10 |
| 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 | | | | | | |
|--|------|-----|-----|-----|------|------|
| 1.0K | 5.0K | 12K | 22K | 47K | 100K | 220K |
| 2.0K | 6.8K | 15K | 30K | 50K | 150K | 250K |
| 4.7K | 10K | 20K | 33K | 68K | 200K | 330K |

Note

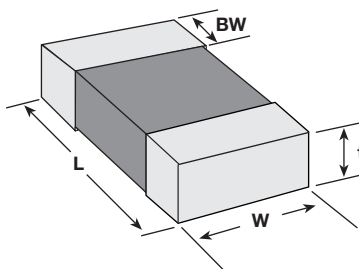
- Most popular and available values

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 03 04 05 06 10 11 17 | N | 1002 = 10K | F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 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



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