# 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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


## 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/thermistors/curve-computation-list/ or sent your part number to thermistor1@vishay.com to obtain a calculation spreadsheet.

| NTHS PRODUCT DATA AND $\mathbf{R}_{\mathbf{2 5}}$ RESISTANCE RANGE AVAILABILITY |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURVE | $\begin{aligned} & \mathbf{B}_{25 / 75} \\ & (\mathbf{K}) \end{aligned}$ | $\begin{gathered} \mathrm{B}_{25 / 85} \\ \text { (K) } \end{gathered}$ | $\begin{gathered} \hline \text { TCR } \\ (\% / K) \end{gathered}$ | NTHS0402 ( $k \Omega$ ) | $\begin{gathered} \text { NTHSO603 } \\ (k \Omega) \end{gathered}$ | $\begin{gathered} \text { NTHS0805 } \\ (\mathrm{k} \Omega) \end{gathered}$ | NTHS1206 <br> ( $\mathrm{k} \Omega$ ) | $R_{25} \pm \text { TOL. }$ <br> 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 |
| 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 $25^{\circ} \mathrm{C}$ 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 $\pm 3 \%, \pm 5 \%$, and $\pm 10 \%$ are available for NTHS0402N01N types.

| STANDARD RESISTANCE VALUES at $25^{\circ} \mathrm{C}$ in $\Omega$ |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4.7 K | 6.8 K | 12 K | 20 K | 30 K | 47 K | 68 K | 150 K | 220 K | 330 K |
| 5.0 K | 10 K | 15 K | 22 K | 33 K | 50 K | 100 K | 200 K | 250 K |  |

## Note

- Most popular and available values.


DIMENSIONS in inches (millimeters)


| PART NUMBER | $\mathbf{L}$ | $\mathbf{W}$ | BW | $\mathbf{t}_{\text {max. }}$ |
| :--- | :---: | :---: | :---: | :---: |
| NTHS0402 | $0.040 \pm 0.004$ | $0.022 \pm 0.006$ | $0.010 \pm 0.004$ | 0.028 |
|  | $(1.02 \pm 0.10)$ | $(0.56 \pm 0.15)$ | $(0.25 \pm 0.10)$ | $(0.71)$ |
| NTHS0603 | $0.063 \pm 0.008$ | $0.031 \pm 0.008$ | $0.010 \pm 0.006$ | 0.039 |
|  | $(1.60 \pm 0.20)$ | $(0.80 \pm 0.20)$ | $(0.25 \pm 0.15)$ | $(1.00)$ |
| NTHS0805 | $0.079 \pm 0.008$ | $0.049 \pm 0.008$ | $0.012 \pm 0.006$ | 0.057 |
|  | $(2.01 \pm 0.20)$ | $(1.25 \pm 0.20)$ | $(0.30 \pm 0.15)$ | $(1.45)$ |
| NTHS1206 | $0.126 \pm 0.008$ | $0.063 \pm 0.008$ | $0.018 \pm 0.008$ | 0.071 |
|  | $(3.20 \pm 0.20)$ | $(1.60 \pm 0.20)$ | $(0.46 \pm 0.20)$ | $(1.80)$ |

## Note

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


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| :---: | :---: | :---: | :---: |
| NTHS0805N02N4601JP | NTHS0805J14N5000JP | NTHS0805J08N5003JP | NTHS0805N02N6001KP |
| NTHS0805N02N1002KP | NTHS0805N02N1002JP | NTHS0805N01N1002JP | NTHS0805N17N1003JP |
| NTHS0805N17N1003KP | NTHS1206N04N2503JR | NTHS1206N01N2002JP | NTHS1206N03N2000JP |
| NTHS1206N03N2000KP | NTHS1206N02N2201JR | NTHS1206N17N2203JP | NTHS0603N02N4701JP |
| NTHS0603N03N2001JP | NTHS0603N02N1002JR | NTHS1206N03N6800JR | NTHS0603N01N1003JP |
| NTHS0603N17N2003JP | NTHS1012J14N3000JP | NTHS1012J14N3000KP | NTHS0603N02 5K 5\%TR |
| NTHS0603N03N1001JE | NTHS0805J08N5003JR | NTHS0805N11N1502JE | NTHS1006N02N5001JE |
| 100K 5\%T NTHS1206J02 4.7K 5\% NTHS1206J14 300 10\% NTHS1206J14 330 10\% NTHS1206N01 100K 5\%T |  |  |  |
| NTHS1206N01 50K 5\% NTHS1206N02 4.7K 10\% NTHS1206N02 5K 10\%TR NTHS1206N02N1002JE |  |  |  |
| NTHS1206N02N4701KE NTHS1206N03 220 5\%TR NTHS1206N17 220K 5\% NTHS0805N01N2202JR |  |  |  |
| NTHS0805J02N1002JP NTHS0805J02N1002KP NTHS0603J04N2203JP NTHS0805N03N1001JR |  |  |  |
| NTHS1206N02N2001JP NTHS1206J02N1002JP NTHS1206J14N1001JP NTHS1006N02N7001JP |  |  |  |
| NTHS0805N17N1503JR NTHS1006N02N6001KP NTHS0603N02N2332JP NTHS0603N01N2332JP |  |  |  |
| NTHS0603J02N1002JP NTHS1206N03N3300JR NTHS1206N01N1003JP NTHS1206N02N1002KP |  |  |  |
| NTHS1206N02N1002JP NTHS1206N01N1002JP NTHS1012N02N2001KP NTHS1206N03N1001JP |  |  |  |
| NTHS1206N01N1003KP NTHS1005N02N9201JP NTHS1012N01N3002JP NTHS1006N02N5001JP |  |  |  |
| NTHS1006N02N5001KP NTHS1206N02N6001JP NTHS1006J14N3000KP NTHS0805N02N4701JP |  |  |  |
| NTHS1206J02N0050JP NTHS0603N01N1683JE NTHS1206N02N5001JE NTHS1006N02N5001KE |  |  |  |
| NTHS1206N03N1001JE NTHS0805J02N1002KE NTHS0805J02N1002JE NTHS0805N01N1123JE |  |  |  |
| NTHS1206N01N4702JE NTHS1012N01N3002JE NTHS0805N02N1002KE NTHS0805N01N1002JE |  |  |  |
| NTHS0805N02N1002JE NTHS0805N02N5001JE NTHS1206N02N1501JE NTHS0805J08N5003J |  |  |  |
| NTHS1206N01N5002JE NTHS1206N01N5002KE NTHS1206N01N1003JE NTHS1206N01N1003KE |  |  |  |
| NTHS1006N02N7001JE NTHS0603N01N1003JE NTHS0805N02N4701JE NTHS1012N01N1002KE |  |  |  |
| NTHS1205N01N1003JE NTHS1206N02N7001KE NTHS1206N02N7001JE NTHS0603J02N1002JE |  |  |  |
| NTHS0603N02N1002JE NTHS1012N04N1003JE NTHS0805N01N1503JE |  |  |  |

