



VISHAY INTERTECHNOLOGY, INC.



## NTC AND LINEAR PTC THERMISTORS

For Commercial Applications

NTHS

M, C and T Series

Assemblies

PTFT

TFPT



# NTC and Linear PTC Thermistors

For Commercial Applications





## Key Benefits


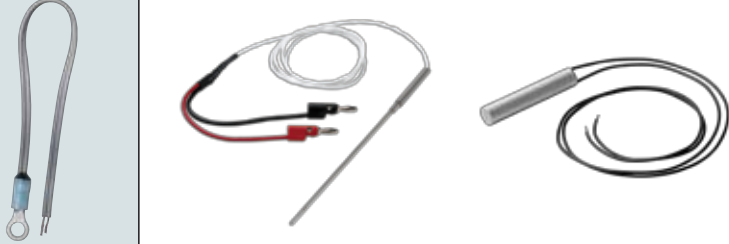
### NTC Thermistors

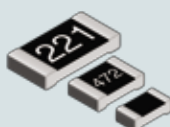
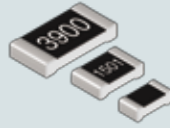
- Available in sizes 0402 to 1206
- Resistance range is 1 k $\Omega$  to 350 k $\Omega$  for surface-mount parts; 10  $\Omega$  to 40 M $\Omega$  for leaded parts
- Tolerance on R<sub>25</sub> down to 1 % for surface-mount parts; down to  $\pm$  0.2  $^{\circ}$ C with curve tracking for leaded parts
- Fit-for-use solutions with broad range of products available for custom assembly

### Linear PTC Thermistors

- Available in sizes 0603 to 1206
- Resistance range: 10  $\Omega$  to 15 k $\Omega$
- Tolerance is down to  $\pm$  5 % for PTFT, and down to  $\pm$  0.5 % for TFPT

Product	R 25 $^{\circ}$ C Range ( $\Omega$ )	Standard Curve	B 25 $^{\circ}$ C/75 $^{\circ}$ C (K)	Tolerance	Applications
<b>NTHS0402</b> 	10 k – 12 k 18 k – 25 k 30 k – 34 k 47 k – 50 k 68 k – 100 k 250 k 350 k	2 10 11 5 1 17 4	3477 3890 3964 4064 4247	3 %, 5 %, 10 %	Battery chargers for cell phones, laptop computers, palm pilots, and LED display compensation
<b>NTHS0603</b> 	1000 – 2000 3.5 k – 4.7 k 6.8 k – 12 k 12 k – 20 k 22 k – 32 k 38 k – 57 k 32 k – 100 k 150 k – 220 k 250 k – 350 k	3 6 2 10 11 5 1 17 4	3181 3477 3964 4064 4247	3 %, 5 %, 10 %  1 %	Battery chargers for cell phones, laptop computers, palm pilots, and LED display compensation
<b>NTHS0805</b> 	1000 – 1500 2.8 k – 2.8 k 4.7 k – 10 k 6 k – 12 k 15 k – 30 k 35 k – 50 k 33 k – 78 k 100 k – 200 k 200 k – 300 k	3 6 2 10 11 5 1 17 4	3181 3477 3964 4064 4247	3 %, 5 %, 10 %  1 %	Battery chargers for cell phones, laptop computers, electric shavers, palm pilots, and LED display compensation
<b>NTHS1206</b> 	1000 – 2000 1.5 k – 3.5 k 4.7 k – 10 k 10 k – 20 k 20 k – 33 k 30 k – 44 k 32 k – 70 k 100 k – 200 k 200 k – 330 k	3 6 2 10 11 5 1 17 4	3181 3477 3964 4064 4247	3 %, 5 %, 10 %  1 %	Battery chargers for laptop computers, electric shavers, electric tools, LED display compensation, thermal printer compensation, hard disc drive control and compensation

Product	R 25 °C Range (Ω)	Standard Curve	B 25 °C/75 °C (K)	Tolerance	Applications
<b>M, C and T Series</b> 	10 – 250 20 – 200 200 – 3 k 300 – 30 k 2 k – 50 k 10 k – 30 k 20 k – 100 k 20 k – 100 k 15 k – 200 k 60 k – 15 M 3 M – 40 M	14 3 2 1 17 9 4 8 7 12 13	3022 3181 3477 3964 4064 3679 4247 3925 4437 4842 5718	Point Match 1 %, 2 %, 3 %, 5 % and 10 %  Curve Track ± 0.2 °C to ± 1 °C	Coffee makers, hair dryers, thermostats, alarm/head/ smoke detectors, heating irons, and microwave ovens
<b>Assemblies</b> 	Based on above M, C and T Series features.			1 %, 2 %, 3 %, 5 % and 10 %	Immersion probes, general purpose sensors, and surface sensors

Product	TCR Lot PPM – 55 °C to + 125 °C	TCR*	R <sub>25</sub> Ω Value Range (5 % and 10 % Tolerance)**			Applications
			0603	0805	1206	
			Ω	Ω	Ω	
<b>PTFT</b> 	3500 3300 3100 2900 2700 2500 2300	± 300 ± 300 ± 300 ± 300 ± 300 ± 300 ± 300	10 – 22 27 – 120 150 – 270 330 – 560 680 – 1.2 k 1.5 k – 5.6 k 6.8 k – 10 k	10 – 39 47 – 180 220 – 330 390 – 680 820 – 1.5 k 1.8 k – 6.8 k 8.2 k – 10 k	10 – 47 56 – 220 270 – 470 560 – 1 k 1.2 k – 3.9 k 4.7 k – 8.2 k 10 k – 15 k	Battery chargers for cell phones, laptop computers, electric shavers, palm pilots, and led display compensation
Product	TCR at Room Temperature (25 °C)	TCR*	R <sub>25</sub> Ω Value Range (0.5 %, 1 % and 5 % Tolerance)**			Applications
			0603	0805	1206	
			Ω	Ω	Ω	
<b>TFPT</b> 	+ 4110 ppm/°C	± 400	100 – 1 k	100 – 5 k	100 – 10 k	Battery chargers for cell phones, laptop computers, electric shavers, palm pilots, and led display compensation

\* Contact Vishay Dale if closer TCR lot tolerance is desired.

\*\* Other R<sub>25</sub> values and tolerances are available upon request.



**SEMICONDUCTORS:**

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• FETs • RF Transistors • Optoelectronics • ICs • Modules and Assemblies

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**One of the World's Largest  
Manufacturers  
of Discrete Semiconductors and Passive Components**

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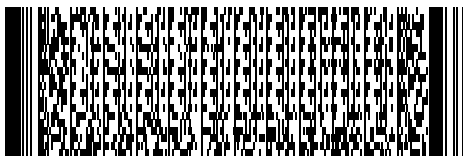
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