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### Vishay BCcomponents

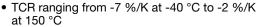
## SMD 0603, Glass Protected NTC Thermistors

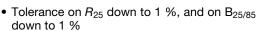




QUICK REFERENCE DATA					
PARAMETER	VALUE	UNIT			
Resistance value at 25 °C	2.0K to 100K	Ω			
Tolerance on R <sub>25</sub> -value	± 1; ± 2; ± 3; ± 5	%			
B <sub>25/85</sub> -value	3420 to 4100	K			
Tolerance on B <sub>25/85</sub> -value	± 1	%			
Maximum dissipation at 25 °C	125	mW			
Thermal time constant $\tau$	≈ 8	S			
Dissipation factor D	3.0	mW/K			
Operating temperature range at zero power	-40 to +150	°C			
Weight	≈ 0.006	g			

#### **FEATURES**





- · Suitable for wave or reflow soldering
- NiSn terminations
- Fully glass coated and protected
- cUL recognized for safety applications (file E148885)



 Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

### **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

#### **DESCRIPTION**

Size 0603 (M1608) glass protected SMD chip thermistor with negative temperature coefficient (TCR) and tin (Sn) plated terminations. The device has no marking.

### **PACKAGING**

Available in 8 mm punched paper tape on reel package of 4000 units.

### **DESIGN-IN SUPPORT**

For complete curve computation, please visit: <a href="https://www.vishay.com/thermistors/ntc-curve-list/">www.vishay.com/thermistors/ntc-curve-list/</a>

ELECTRICAL DATA AND ORDERING INFORMATION						
<b>R</b> <sub>25</sub> (Ω)	R <sub>25</sub> -TOL. (± %)	B <sub>25/85</sub> (K)	B <sub>25/85</sub> -TOL. (± %)	UL RECOGNIZED	SAP MATERIAL AND ORDERING NUMBER (1)	
2000	5	3420	1	Υ	NTCS0603E3202JLT	
2200	1, 2, 3, 5	3520	1	Υ	NTCS0603E3222*MT	
2700	1, 2, 3, 5	3600	1	Υ	NTCS0603E3272*MT	
4700	1, 2, 3, 5	3830	1	Υ	NTCS0603E3472*HT	
10 000	1, 2, 3, 5	3435	1	Υ	NTCS0603E3103*LT	
10 000	1, 2, 3, 5	3610	1	Υ	NTCS0603E3103*MT	
10 000	1, 2, 3, 5	3960	1	Υ	NTCS0603E3103*HT	
15 000	1, 2, 3, 5	3600	1	N	NTCS0603E3153*MT	
22 000	1, 2, 3, 5	3730	1	Υ	NTCS0603E3223*MT	
33 000	1, 2, 3, 5	3860	1	Υ	NTCS0603E3333*HT	
47 000	1, 2, 3, 5	3960	1	Υ	NTCS0603E3473*HT	
68 000	1, 2, 3, 5	3985	1	Υ	NTCS0603E3683*HT	
100 000	1, 2, 3, 5	4100	1	Y	NTCS0603E3104*XT	

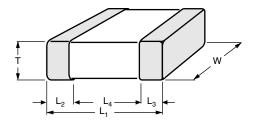
#### Note

(1) Replace \* in SAP material number by J for  $\pm$  5 %, H for  $\pm$  3 %, G for  $\pm$  2 %, F for  $\pm$  1 % tolerance on  $R_{25}$ 



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### **DIMENSIONS** in millimeters

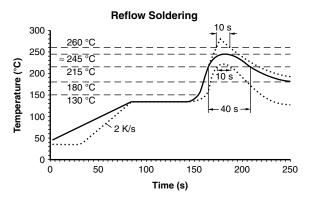


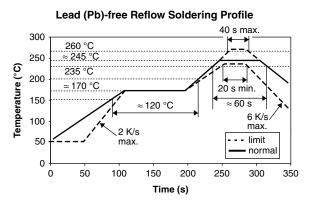
L <sub>1</sub>	w	Т	L <sub>2</sub> AND L <sub>3</sub> MIN.	L <sub>4</sub> MIN.
1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.2	0.4

### **SOLDERING CONDITIONS**

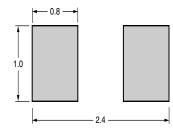
This SMD thermistor is only suitable for wave or reflow soldering, in accordance with JEDEC® J-STD-020. The maximum temperature of 260 °C during 40 s should not be exceeded.

Typical examples of a soldering processes that will provide reliable joints without damage, are shown below.





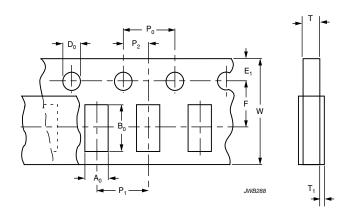
Recommended solder land pattern dimensions (mm)



# PACKAGING TAPE SPECIFICATIONS

All tape specifications are in accordance with IEC 60286-3. Basic dimensions are given below. Carrier tape material is paper.

### **PAPER TAPE**



<b>DIMENSIONS OF PAPER TAPE</b> in millimeters			
PARAMETER	DIMENSION		
A <sub>0</sub> <sup>(1)</sup>	1.15 ± 0.1		
B <sub>0</sub> <sup>(1)</sup>	1.9 ± 0.1		
W	8.0 ± 0.2		
E <sub>1</sub>	1.75 ± 0.1		
F	$3.5 \pm 0.05$		
$D_0$	1.55 ± 0.05		
P <sub>0</sub> (2)	4.0 ± 0.1		
P <sub>1</sub>	4.0 ± 0.1		
$P_2$	$2.0 \pm 0.05$		
T tape thickness max.	1.1		
T <sub>1</sub> cover tape thickness max.	0.1		

#### Notes

- (1) Measured 0.3 mm above base pocket
- (2) P<sub>0</sub> pitch cumulative error over any 10 pitches ± 0.2 mm



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