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Vishay BCcomponents

AUTOMOTIVE

RoHS

COMPLIANT HALOGEN

FREE

SMD 0603, Glass Protected NTC Thermistors





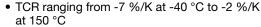
DESIGN SUPPORT TOOLS AVAILABLE

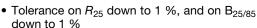




QUICK REFERENCE DATA			
PARAMETER	VALUE	UNIT	
Resistance value at 25 °C	2.0K to 100K	Ω	
Tolerance on R ₂₅ -value	± 1; ± 2; ± 3; ± 5	%	
B _{25/85} -value	3420 to 4100	K	
Tolerance on B _{25/85} -value	± 1	%	
Maximum dissipation at 25 °C	125	mW	
Thermal time constant τ	≈ 8	S	
Dissipation factor D	3.0	mW/K	
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)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

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: www.vishav.com/thermistors/ntc-curve-list/

ELECTRICAL DATA AND ORDERING INFORMATION						
R ₂₅ (Ω)	R ₂₅ -TOL. (± %)	B _{25/85} (K)	B _{25/85} -TOL. (± %)	UL RECOGNIZED	SAP MATERIAL AND ORDERING NUMBER (1)	
2000	3, 5	3420	1	Y	NTCS0603E3202*LT	
2200	1, 2, 3, 5	3520	1	Y	NTCS0603E3222*MT	
2700	1, 2, 3, 5	3600	1	Y	NTCS0603E3272*MT	
4700	1, 2, 3, 5	3830	1	Y	NTCS0603E3472*HT	
10 000	1, 2, 3, 5	3435	1	Y	NTCS0603E3103*LT	
10 000	1, 2, 3, 5	3610	1	Y	NTCS0603E3103*MT	
10 000	1, 2, 3, 5	3960	1	Y	NTCS0603E3103*HT	
15 000	1, 2, 3, 5	3600	1	N	NTCS0603E3153*MT	
22 000	1, 2, 3, 5	3730	1	Y	NTCS0603E3223*MT	
33 000	1, 2, 3, 5	3860	1	Y	NTCS0603E3333*HT	
47 000	1, 2, 3, 5	3960	1	Y	NTCS0603E3473*HT	
68 000	1, 2, 3, 5	3985	1	Y	NTCS0603E3683*HT	
100 000	1, 2, 3, 5	4100	1	Y	NTCS0603E3104*XT	

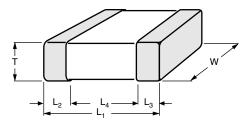
Note

(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

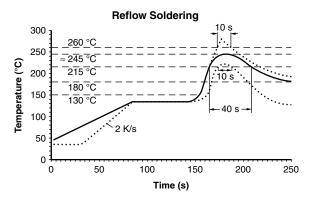


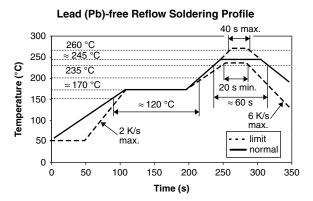
L ₁	w	Т	L ₂ AND L ₃ MIN.	L ₄ MIN.
1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.2	0.4

SOLDERING CONDITIONS

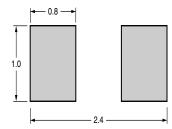
This SMD thermistor is only suitable for wave or reflow soldering, in accordance with JEDEC® J-STD-020. The maximum temperature of 260 °C during 40 s should not be exceeded.

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





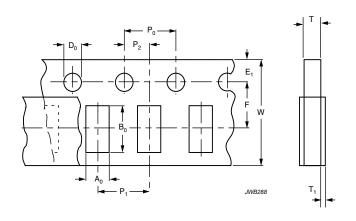
Recommended solder land pattern dimensions (mm)



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



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

Notes

- (1) Measured 0.3 mm above base pocket
- (2) P₀ pitch cumulative error over any 10 pitches ± 0.2 mm



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