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Vishay BCcomponents

NTC Thermistors, Radial Leaded, Accuracy Line





LINKS TO ADDITIONAL RESOURCES









QUICK REFERENCE DATA							
PARAMETER	VALUE	UNIT					
Resistance value at 25 °C	2K to 470K	Ω					
Tolerance on R_{25} -value	\pm 1; \pm 2; \pm 3; \pm 5	%					
B _{25/85} -value	3528 to 4570	K					
Tolerance on B _{25/85} -value	± 0.5 to ± 2.0	%					
Operating temperature range at:							
Zero power dissipation (continuously)	-40 to +125	°C					
Zero power dissipation (for short periods) (2)	≤ 150						
Maximum power dissipation at 55 °C	100	mW					
Dissipation factor δ in still air (for info)	2.2	mW/K					
Response time (1)	≈ 1.7	_					
Thermal time constant τ (1)	13	13 s					
Mass	≈ 0.11	g					

Notes

- (1) Response time in silicone oil MS200/50. This is the time needed for the sensor to reach 63.2 % of the total temperature difference when subjected to a temperature change from 25 °C in air to 85 °C in oil. Thermal time constant by cooling from electrically pre-heated body
- $^{(2)}$ Valid for all types with the exception of the R_{25} values 12 k Ω , 22 k Ω and 470 k Ω

FEATURES

- Accurate over a wide temperature range (tolerance on B-value down to 0.5 %)
- · Good stability over a long life
- Excellent price/performance ratio
- · Low heat conductivity through 0.4 mm Ni-leads
- cULus recognized, file E148885 (UL category XGPU2/XGPU8)



- · Mounting: radial
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

APPLICATIONS

 Temperature measurement, sensing and control in industrial, consumer, and telecom applications. For on-board sensing or accurate remote sensing

DESCRIPTION

These thermistors are made of NTC ceramic material. The device consists of a chip with two tinned nickel leads. The parts are coated and color marked.

PACKAGING

The thermistors are packed in cardboard boxes; the smallest packing quantity is 500 units.

DESIGN-IN SUPPORT

For complete curve computation, please visit: www.vishay.com/en/thermistors/ntc-rt-calculator/.

MARKING

The thermistors are marked with colored dots on a gray epoxy base coating; see Dimensions and "Electrical Data and Ordering Information".

CAUTIONS AND WARNINGS ON MOUNTING AND HANDLING

Please read the special instructions: see www.vishay.com/doc?29222.

By soldering in any position. Not intended for potting.

ELECTRICAL DATA AND ORDERING INFORMATION								
- P	R ₂₅ -TOL. (± %)	B _{25/85} (K)	B _{25/85} -TOL. (± %)	COLOR MARKING	UL RECOG.	SAP MATERIAL AND ORDERING NUMBER (1)		
R ₂₅ (Ω)						RoHS-COMPLIANT WITH EXEMPTION (2)	RoHS-COMPLIANT	
2000	1, 2, 3, 5	3528	0.5	Orange	✓	NTCLE203E3202*B0	NTCLE203E3202*B0A	
2700	1, 2, 3, 5	3977	0.75	Red	✓	NTCLE203E3272*B0	NTCLE203E3272*B0A	
4700	1, 2, 3, 5	3977	0.75	Green	√	NTCLE203E3472*B0	NTCLE203E3472*B0A	
5000	1, 2, 3, 5	3977	0.75	Pink	✓	NTCLE203E3502*B0	NTCLE203E3502*B0A	
10 000	1, 2, 3, 5	3977	0.75	Blue	✓	NTCLE203E3103*B0	NTCLE203E3103*B0A	
12 000	1, 2, 3, 5	3740	2	Yellow	√	NTCLE203E3123*B0	NTCLE203E3123*B0A	
22 000	1, 2, 3, 5	3740	2	White	✓	NTCLE203E3223*B0	NTCLE203E3223*B0A	
47 000	1, 2, 3, 5	4090	1.5	Black	√	NTCLE203E3473*B0	NTCLE203E3473*B0A	
68 000	1, 2, 3, 5	4190	1.5	Grey	✓	NTCLE203E3683*B0	NTCLE203E3683*B0A	
100 000	1, 2, 3, 5	4190	1.5	Brown	√	NTCLE203E3104*B0	NTCLE203E3104*B0A	
470 000	2, 3, 5	4570	1.5	Violet		NTCLE203E3474*B0	NTCLE203E3474*B0A	

Notes

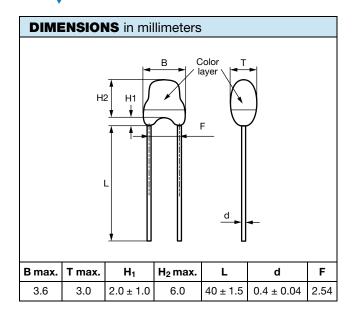
Preferred versions for new designs

- (1) Replace * in SAP by J for \pm 5 %, H for \pm 3 %, G for \pm 2 %, F for \pm 1 %
- (2) RoHS exemption 7(c)-I: electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezo-electronic devices, or in a glass or ceramic matrix compound

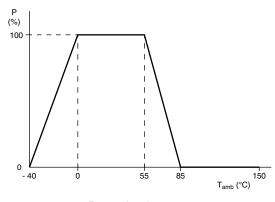


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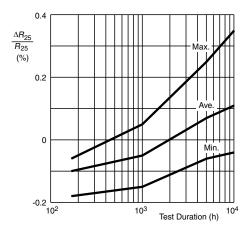
DERATING



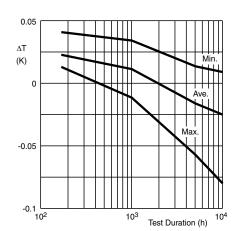
Power derating curve

Note

 Zero power is considered as measuring power max. 1 % of max. power



Typical curves valid for 2.2 $k\Omega$ to 10 $k\Omega$



Typical curves valid for 2.2 k Ω to 10 k Ω



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