

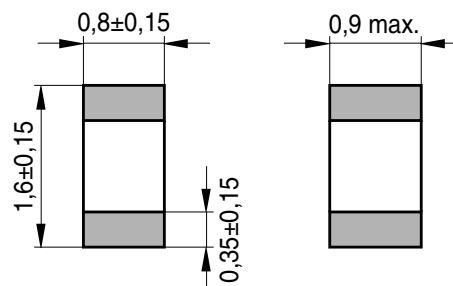


### Applications

- Temperature measurement and compensation in
  - mobile phone applications (e.g. battery pack, TCXO, LCD)
  - data systems
  - automotive electronics

### Features

- Multilayer SMD NTC with inner electrodes
- Ni barrier termination (Ag/Ni/Sn)
- High accuracy:  $\pm 5\%$  in resistance,  $B$  value tolerance down to  $\pm 1,5\%$  available on request
- Excellent long-term ageing stability in high-temperature and high-humidity environment
- Superior resistance stability during soldering (change  $< 1\%$ )


 Termination

TNT0396-Y

 Dimensions in mm  
 Approx. weight 6 mg

### Options

 Alternative resistance ratings, resistance tol.  $< 5\%$  and  $B$  value tol.  $< 3\%$  available on request

### Delivery mode

Cardboard tape, 180-mm reel, PU: 4000 pcs (standard); 330-mm reel, PU: 16 000 pcs (on request)

Climatic category (IEC 60068-1)		55/125/56	
Max. power at 25 °C (on PCB)	$P_{25}^{1)}$	180	mW
Resistance tolerance	$\Delta R_N/R_N$	$\pm 5\%$ , $\pm 10\%$	
Rated temperature	$T_N$	25	°C
$B$ value tolerance	$\Delta B/B$	$\pm 3\%$	
Dissipation factor (on PCB)	$\delta_{th}^{1)}$	approx. 3,0	mW/K
Thermal cooling time constant (on PCB)	$\tau_c^{1)}$	approx. 4,0	s
Heat capacity	$C_{th}^{1)}$	approx. 12,0	mJ/K

$R_{25}$	No. of $R/T$ characteristic	$B_{25/50}$	$B_{25/85}$	$B_{25/100}$	Ordering code
$\Omega$		K	K	K	
47	8501	3470	3540	3550	B57311V2470+060
100	8501	3470	3540	3550	B57311V2101+060
150	8501	3470	3540	3550	B57311V2151+060
220	8501	3470	3540	3550	B57311V2221+060
330	8501	3470	3540	3550	B57311V2331+060
470	8502	3940	3980	4000	B57321V2471+060
680	8502	3940	3980	4000	B57321V2681+060
1,0 k	8502	3940	3980	4000	B57321V2102+060
1,5 k	8502	3940	3980	4000	B57321V2152+060
10 k	8502	3940	3980	4000	B57321V2103+060

1) Depends on mounting situation

**SMD**

$R_{25}$ $\Omega$	No. of $R/T$ characteristic	$B_{25/50}$ K	$B_{25/85}$ K	$B_{25/100}$ K	Ordering code
2,2 k	8503	4390	4470	4500	B57331V2222+060
3,3 k	8503	4390	4470	4500	B57331V2332+060
4,7 k	8503	4390	4470	4500	B57331V2472+060
6,8 k	8503	4390	4470	4500	B57331V2682+060
10 k	8503	4390	4470	4500	B57331V2103+060
15 k	8503	4390	4470	4500	B57331V2153+060
22 k	8503	4390	4470	4500	B57331V2223+060
33 k	8503	4390	4470	4500	B57331V2333+060
47 k	8503	4390	4470	4500	B57331V2473+060
68 k	8503	4390	4470	4500	B57331V2683+060
100 k	8503	4390	4470	4500	B57331V2104+060

+: J for  $\Delta R_N/R_N = \pm 5\%$   
 K for  $\Delta R_N/R_N = \pm 10\%$


**Reliability data**

SMD NTC thermistors are tested in accordance with IEC 60068. The parts are mounted on a standardized PCB in accordance with IEC 60539-1.

Test	Standard	Test conditions	$\Delta R_{25}/R_{25}$ (typical)	Remarks
Storage in dry heat	IEC 60068-2-2 JIS C 0021	Storage at upper category temperature $T: (125 \pm 2) ^\circ\text{C}$ $t: 1000 \text{ h}$	< 2 %	
Storage in damp heat, steady state	IEC 60068-2-3 JIS C 0022	Temperature of air: $(40 \pm 2) ^\circ\text{C}$ Relative humidity of air: $(93 +2/-3) \%$ Duration: 56 days	< 2 %	
Rapid temperature cycling	IEC 60068-2-14 JIS C 0025	Lower test temperature: $-55 ^\circ\text{C}$ Upper test temperature: $125 ^\circ\text{C}$ Number of cycles: 100	< 2 %	
Endurance		$P_{\text{max}}$ : 180 mW $T: (65 \pm 2) ^\circ\text{C}$ $t: 1000 \text{ h}$	< 2 %	
Solderability	IEC 60068-2-58 JIS C 0054	Solderability: $(215 \pm 3) ^\circ\text{C} / (3 \pm 0,3) \text{ s}$ $(235 \pm 5) ^\circ\text{C} / (2 \pm 0,2) \text{ s}$  Resistance to soldering heat: $(260 \pm 5) ^\circ\text{C} / (10 \pm 1) \text{ s}$		95 % of terminations wetted
Resistance drift after soldering		Reflow soldering profile Wave soldering profile	< 1 %	

**Herausgegeben von EPCOS AG**

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