

SMD NTC Thermistor

SMD NTC Thermistor with Ni-Barrier Termination

B57431V2474x062

Data sheet

Applications

Temperature measurement and compensation for

- Charging control of battery packs in portable devices
- LCDs and power amplifiers in mobile phones, car radio equipment, etc.
- HDD in computers, digital cameras, DVD recorders
- Air conditioning and heating control systems

Features

- Standard EIA chip size 0805
- Ni - Barrier termination (Ag/Ni/Sn)
- Excellent long term ageing stability in high temperature
- High resistance stability during soldering
- Suitable for lead-free soldering
- The component is compliant with ROHS (DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

Electrical Specifications

Part Number	Zero-Power Resistance (at 25°C)	B _{25/100}	B _{25/85}	B _{25/50}
B57431V2474*062	470 kΩ	4500 K ± 3%	(4470 K)	(4390K)

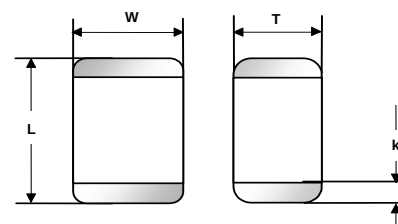
* = Resistance Tolerance: J for $\Delta R/R_{25} = \pm 5\%$ K for $\Delta R/R_{25} = \pm 10\%$
 Alternative resistance ratings, resistance tolerance < 5% and B-value tolerance < 3% on request.

Climatic Category (IEC 60068-1)	55/125/21
Lower category temperature	-55°C
Higher category temperature	125°C
Power rating at 25°C	P ₂₅ 210mW ¹⁾
Dissipation factor (on PCB)	G _{th} approx. 3.5 mW/K ¹⁾
Thermal cooling time constant (on PCB)	T _{th} approx. 10 s ¹⁾
Heat capacity	C _{th} approx. 35 mJ/K ¹⁾
Weight of component	approx. 13 mg

¹⁾ Depends on mounting situation

Part Dimensions

Dimensions in mm				
Type	L	W	T	k
0805	2.0±0.2	1.25±0.15	1.3 max.	0.5±0.25



Termination Ag/Ni/Sn Dimensions in [mm]

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Resistance - Temperature Characteristic

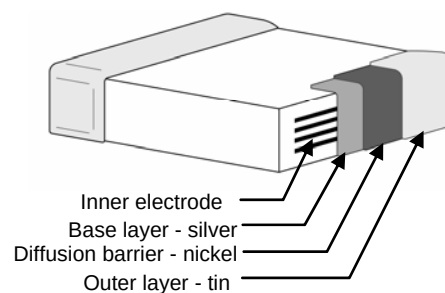
R at 25°C 470000 $\Omega \pm 5\%$

B_{25/100} 4500 K $\pm 3\%$

T [°C]	R_Nom [Ω]	R_Min [Ω]	R_Max [Ω]	$\Delta R/R_{25}$ [%]	ΔT [°C]
-55,00	62.282.719,00	48.795.519,00	75.769.919,00	21,70	2,80
-50,00	42.545.774,00	33.922.511,00	51.169.037,00	20,30	2,70
-45,00	29.439.454,00	23.862.922,00	35.015.986,00	18,90	2,60
-40,00	20.617.301,00	16.973.519,00	24.261.082,00	17,70	2,50
-35,00	14.603.281,00	12.199.911,00	17.006.651,00	16,50	2,40
-30,00	10.454.645,00	8.855.915,00	12.053.376,00	15,30	2,30
-25,00	7.560.693,00	6.489.089,00	8.632.297,00	14,20	2,20
-20,00	5.520.586,00	4.797.453,00	6.243.719,00	13,10	2,10
-15,00	4.067.979,00	3.577.138,00	4.558.819,00	12,10	2,00
-10,00	3.023.837,00	2.689.028,00	3.358.646,00	11,10	1,90
-5,00	2.266.499,00	2.037.226,00	2.495.772,00	10,10	1,80
0,00	1.712.436,00	1.554.992,00	1.869.880,00	9,20	1,70
5,00	1.303.738,00	1.195.453,00	1.412.023,00	8,30	1,50
10,00	999.882,00	925.404,00	1.074.360,00	7,40	1,40
15,00	772.261,00	721.126,00	823.395,00	6,60	1,30
20,00	600.506,00	565.543,00	635.469,00	5,80	1,20
25,00	470.000,00	446.500,00	493.500,00	5,00	1,00
30,00	370.169,00	348.711,00	391.627,00	5,80	1,20
35,00	293.309,00	274.187,00	312.431,00	6,50	1,40
40,00	233.765,00	216.890,00	250.640,00	7,20	1,60
45,00	187.358,00	172.563,00	202.152,00	7,90	1,80
50,00	150.980,00	138.066,00	163.893,00	8,60	2,00
55,00	122.303,00	111.064,00	133.542,00	9,20	2,20
60,00	99.576,00	89.810,00	109.341,00	9,80	2,40
65,00	81.468,00	72.991,00	89.946,00	10,40	2,60
70,00	66.970,00	59.611,00	74.328,00	11,00	2,80
75,00	55.303,00	48.914,00	61.692,00	11,60	3,10
80,00	45.871,00	40.320,00	51.422,00	12,10	3,30
85,00	38.211,00	33.383,00	43.039,00	12,60	3,50
90,00	31.962,00	27.757,00	36.166,00	13,20	3,70
95,00	26.842,00	23.176,00	30.509,00	13,70	4,00
100,00	22.630,00	19.428,00	25.833,00	14,20	4,20
105,00	19.151,00	16.350,00	21.953,00	14,60	4,40
110,00	16.266,00	13.811,00	18.722,00	15,10	4,70
115,00	13.865,00	11.709,00	16.021,00	15,50	4,90
120,00	11.858,00	9.962,00	13.755,00	16,00	5,20
125,00	10.176,00	8.505,00	11.847,00	16,40	5,40

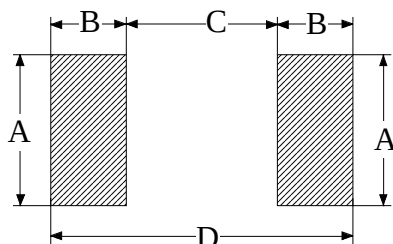
MOUNTING INSTRUCTIONS

1. Termination Ni-barrier termination (Ag/Ni/Sn)



2. Recommended geometry of solder pads

Size	A [mm]	B [mm]	C [mm]	D [mm]
0805	1,3	1,2	1,0	3,4



3. Requirements for Solderability

- Wettability test in accordance with IEC 60068-2-58 (= JIS C 0054) :

Preconditioning: Immersion into flux F-SW 32.

Evaluation criteria: Wetting of soldering areas $\geq 95\%$.

Pb-containing solder: *Sn(60)Pb(40)*

Bath temperature (°C): 215 ± 3

Dwell time (s): 3 ± 0.3

Pb-free solder: *Sn(95.1-96.0)Ag(3.0-4.0)Cu(0.5-0.9)*

Bath temperature (°C): 245 ± 5

Dwell time (s): 3 ± 0.3

- Soldering heat resistance test in accordance with IEC 60068-2-58 (= JIS C 0054) :

Preconditioning: Immersion into flux F-SW 32.

Evaluation criteria: Leaching of side edges $\leq 1/3$.

Solder: *Sn(60)Pb(40)*, *Sn(95.1-96.0)Ag(3.0-4.0)Cu(0.5-0.9)*

Bath temperature (°C): 260 ± 5

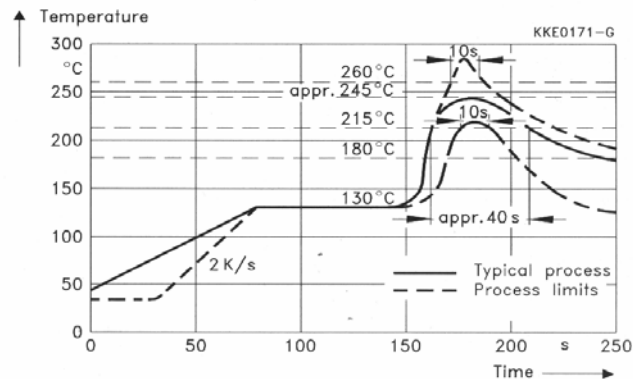
Dwell time (s): 10 ± 1

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4. Recommended soldering profiles

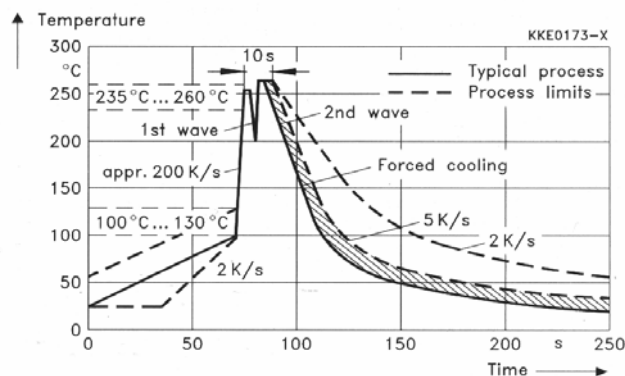
Reflow soldering profile: (according to CECC 00802)

Temperature characteristics at component terminals during reflow soldering (two cycles are permitted).



Wave soldering profile:

Temperature characteristics at component terminals during wave soldering can be recommended once in general.



5. Storage conditions

Solderability is guaranteed for 12 months from date of delivery for types with Ni-barrier termination, provided that the components are stored in the original packages.

Storage temperature: -25 ... +45°C

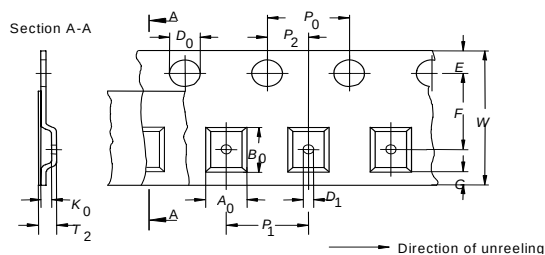
Relative humidity: < 75% annual average, < 95% on max. 30 days in a year, dew precipitation and wetness are inadmissible.

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TAPING AND PACKING

Taping: Tape and reel packing comply with specifications of IEC 60286-3

Blister tape

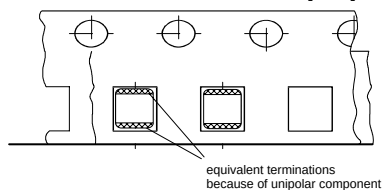


Dimensions and tolerances:

Definition	Symbol	Dimension (mm)	Tol. (mm)
		Size 0805	
Compartment width x Compartments length	$A_0 \times B_0$	1.60 x 2.40	± 0.2
Compartment height	K_0	1.40	max.
Overall thickness	T_2	2.50	max.
Sprocket hole diameter	D_0	1.5	$+0.1/-0$
Sprocket hole pitch	P_0	4.0	$\pm 0.1^{1)}$
Distance centre hole to centre compartment	P_2	2.0	± 0.05
Pitch of the component compartments	P_1	4.0	± 0.1
Tape width	W	8.0	± 0.3
Distance edge to centre of hole	E	1.75	± 0.1
Distance centre hole to centre compartment	F	3.5	± 0.05
Distance edge to centre compartment	G	0.75	min.

¹⁾ ≤ 0.2 mm over 10 sprocket holes.

Part orientation in tape pocket



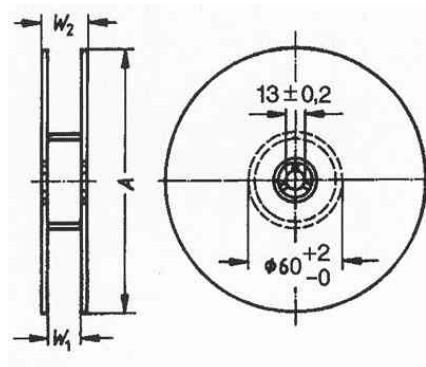
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Reel Packing:



Reel material: PS.

Tape material: Blister

Tape break force: min. 10N

Top cover tape peel force: 0.1 - 0.65N at a peel speed of 300 mm/min, angle between top cover tape and the direction of feed during peel off: 165 -180°.

Top cover tape strength: min. 10N

Length of tape:

Leader section: additional top cover tape, length min 400 mm, before component section (including carrier tape with empty cavities, length min. 150 mm or min. 20 pcs. of empty cavities).

Trailer section: length min. 40 mm.

Empty part cavities at leader and trailer section on tape is sealed with top cover tape.

Cavity play:

Each part rests in the cavity so that the angle between the part centreline and the cavity centreline is no more than 20°.

Weight of loaded reel: max. 1500 g

Package 8 mm tape

Definition	Symbol	Dim. (mm)	Tol. (mm)
Reel diameter	A	180	-3/+0
Reel width (inside)	W ₁	8.4	+1.5/-0
Reel width (outside)	W ₂	14.4	max.

Packing units: 3000pcs

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