

SB SERIES SMD Chip Thermistor

Sensor Scientific SMD chip thermistors represent a major advance in thermistor technology. The use of proven multilayer technology results in a variety of nominal resistance/beta combinations. The use of solder plating over a Ni barrier assures an electrode that is highly solderable and resistant to leaching.

FEATURES:

- Multilayer Structure Results In A Wide Choice Of Beta And Resistance Values
- Robust Construction-Ni Barrier Resists Soldering Process Damage

OPTIONS:

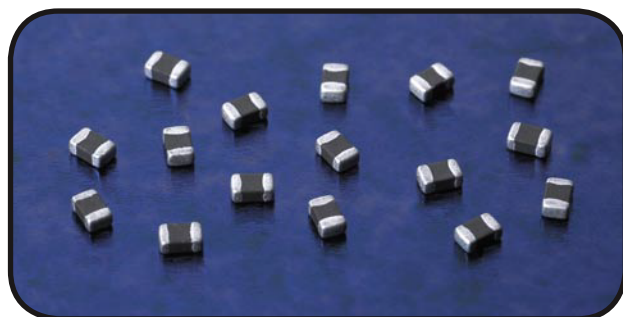
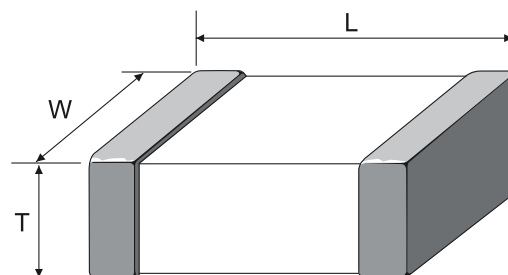
- Rechargeable Battery Packs
- Crystal Oscillator (Tcxo) Temperature Compensation
- Gas Sensor Temperature Compensation
- Cpu Temperature Monitoring

SPECIFICATIONS

- Operating Temperature Range: -40°C to 120°C
- Time Constant: 10 Sec Max. In Still Air
- Dissipation Constant: 0402 & 0603 Package: 3.0 Mw/°C Min.
0805 Package: 3.5 Mw/°C Min.
- Soldering Parameters: Reflow Or Wave, 260°C For 5 Seconds Max., With 150°C Preheat For 1 Minute

Recommended Storage Conditions:

- Temperature 10-30 C, Humidity less than 60% RH (without dewing)
- After unpacking, reseal and/or store product in a dry environment
- Do not store near corrosive materials or direct sunlight



SB20-202H03 specifies an SMD chip thermistor, 0805 package (2.0mm L x 1.2mm W), 2000 ohms at 25 Deg. C., H beta, a resistance tolerance of ±3%

Code	Package Size	Actual Size
SB10	1005 (0402)	1.0 X 0.5 mm
SB16	1608 (0603)	1.6 X 0.8 mm
SB20	2012 (0805)	2.0 X 1.2 mm
SB10	ONE REEL	10K PIECES
SB16	ONE REEL	4K PIECES
SB20	ONE REEL	4K PIECES

Beta Code	Beta (25/85) °K
H	3250
J	3435
K	3670
L	3890
M	4150
N	4550
P	4750

Part Numbers
SB20 = Size
202 = 2000 ohm at 25 °C
H = BETA (25 °/85°) K = 3250
03 = 3%

"The information contained herein is believed to be accurate. The user, however, should verify the suitability of a particular product for a specific application. Sensor Scientific, Inc. does not warrant the accuracy of this information, and disclaims any liability with respect to its use"

RESISTANCE VS TEMPERATURE TABLE

CURVE	H	J	K	L	M	N	P
Beta 25-85	3250	3435	3670	3890	4150	4550	4750
Alpha @25 Deg C	-3.02	-3.78	-4.04	-4.30	-4.58	-4.92	-4.95
T °C	RESISTANCE MULTIPLIER						
-40	17.75	19.81	24.00	30.17	38.38	55.57	65.27
-35	13.65	15.08	17.97	22.11	27.46	36.20	38.85
-30	10.58	11.58	13.57	16.34	19.84	24.40	24.64
-25	8.256	8.952	10.33	12.19	14.48	16.93	16.45
-20	6.491	6.976	7.926	9.167	10.67	12.04	11.45
-15	5.139	5.475	6.126	6.952	7.932	8.728	8.40
-10	4.096	4.328	4.770	5.316	5.951	6.435	6.082
-5	3.287	3.445	3.741	4.096	4.503	4.809	4.578
0	2.655	2.760	2.954	3.181	3.437	3.634	3.495
5	2.158	2.226	2.349	2.489	2.644	2.771	2.695
10	1.765	1.806	1.880	1.961	2.051	2.129	2.093
15	1.452	1.475	1.514	1.556	1.602	1.646	1.632
20	1.202	1.211	1.227	1.243	1.261	1.280	1.276
25	1.000	1.000	1.000	1.000	1.000	1.000	1.000
30	0.8368	0.8304	0.8199	0.8093	0.7982	0.785	0.784
35	0.7039	0.6931	0.6759	0.6590	0.6414	0.619	0.616
40	0.5952	0.5815	0.5602	0.5398	0.5186	0.490	0.485
45	0.5058	0.4902	0.4667	0.4446	0.4219	0.390	0.382
50	0.4318	0.4151	0.3907	0.3683	0.3452	0.312	0.302
55	0.3704	0.3531	0.3287	0.3066	0.2840	0.251	0.240
60	0.3192	0.3017	0.2777	0.2565	0.2348	0.203	0.192
65	0.2762	0.2587	0.2357	0.2157	0.1952	0.165	0.154
70	0.2399	0.2228	0.2009	0.1821	0.1630	0.136	0.125
75	0.2093	0.1925	0.1718	0.1545	0.1367	0.112	0.102
80	0.1833	0.1669	0.1476	0.1315	0.1152	0.093	0.084
85	0.1610	0.1452	0.1272	0.1125	0.0974	0.078	0.069
90	0.1420	0.1266	0.1100	0.0965	0.0827	0.065	0.058
95	0.1256	0.1108	0.0954	0.0831	0.0704	0.055	0.049
100	0.1115	0.0972	0.0830	0.0717	0.0601	0.047	0.041
105	0.0992	0.0855	0.0724	0.0621	0.0515	0.040	0.035
110	0.0885	0.0753	0.0633	0.0540	0.0443	0.034	0.029
115	0.0792	0.0665	0.0555	0.0470	0.0381	0.029	0.024
120	0.0710	0.0588	0.0487	0.0410	0.0329	0.024	0.020

STANDARD PARTS

Part Number	Beta Constant 25/85 C	Resistance @ 25C
SB -300H ●●	3250	30
SB -400H ●●	3250	40
SB -470H ●●	3250	47
SB -101H ●●	3250	100
SB -471H ●●	3250	470
SB -102K ●●	3670	1K
SB -202M ●●	4150	2K
SB -222M ●●	4150	2.2K
SB -272M ●●	4150	2.7K
SB -332M ●●	4150	3.3K
SB -472K ●●	3670	4.7K
SB -502K ●●	3670	5K
SB -602K ●●	3670	6K
SB -682K ●●	3670	6.8K
SB -103J ●●	3435	10K
SB -103K ●●	3670	10K
SB -103L ●●	3890	10K
SB -103M ●●	4150	10K
SB -223L ●●	3890	22K
SB -223N ●●	4550	22K
SB -333N ●●	4550	33K
SB -473J ●●	3435	47K
SB -473M ●●	4150	47K
SB -503M ●●	4150	50K
SB -683M ●●	4150	68K
SB -683N ●●	4550	68K
SB -104M ●●	4150	100K
SB -154M ●●	4150	150K
SB -204M ●●	4150	200K
SB -474M ●●	4150	470K
SB -474P ●●	4750	470K
SB -205P ●●	4750	2 MEG

Replace with package size

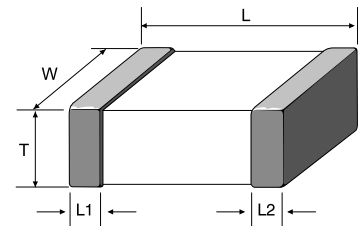
10 = 1.0 X 0.5mm (0402)
16 = 1.6 X 0.8mm (0603)
20 = 2.0 X 1.2mm (0805)

Replace with tolerance

●● 3% = 03
●●● 5% = 05
●●●● 10% = 10

SMD CHIP THERMISTOR SPECIFICATIONS

- Product name: SMD Chip Thermistor
- Operating temperature: -40°C to +120°C
- Dimensions (mm)



	L	W	T	L1, L2
2012	2.0±0.1	1.2±0.1	0.8±0.1	0.4±0.1
1608	1.6±0.1	0.8±0.1	0.8±0.1	0.3±0.1
1005	1.0±0.1	0.5±0.1	0.5±0.1	0.2±0.1

4. Structure

Number Name

- 1 = Thermistor Ceramic
- 2 = Inner Electrode
- 3 = External Electrode
- 4 = Electroplating Layer(Ni)
- 5 = Electroplating Layer(SnPb)