

Specification of Pt Thermal Sensor

1. Electrical Characteristics of SB10242506N

- 1-1 Resistance value (at 0°C) : 1000±2.4 ohm
 1-2 Maximum applied current : 1mA
 1-3 Insulation resistance : exceed 100M ohm at 500V DC
 (@ room temp.)
 1-4 Thermal response time (90%) : 20 sec. max. (in air, 1m/sec.)
 1-5 Self heating : 5 mW/°C (in air, 1m/sec.)
 1-6 Operation temperature range : -20°C to 105°C

2. Outline Drawings

Please see attached figure.

3. Reliability Test

- 3-1 High temperature test
 keep the Pt sensor in 100°C for 1000 hours.
 3-2 Low temperature test
 keep the Pt sensor in -25°C for 1000 hours.
 3-3 Humidity test
 keep the Pt sensor in 60°C and 90 to 95% RH for 1000 hours.
 3-4 Thermal shock test
 keep the Pt sensor in 0°C ice water for at least 15 sec., then within 10 sec. directly put into 100°C hot water for at least 15 sec.. The above process should be proceeded for at least 10 cycles.

After each item test, valuation of item 1-1 should be within 0.24 % and item 1-3 should exceed 100M ohm at 500V DC.

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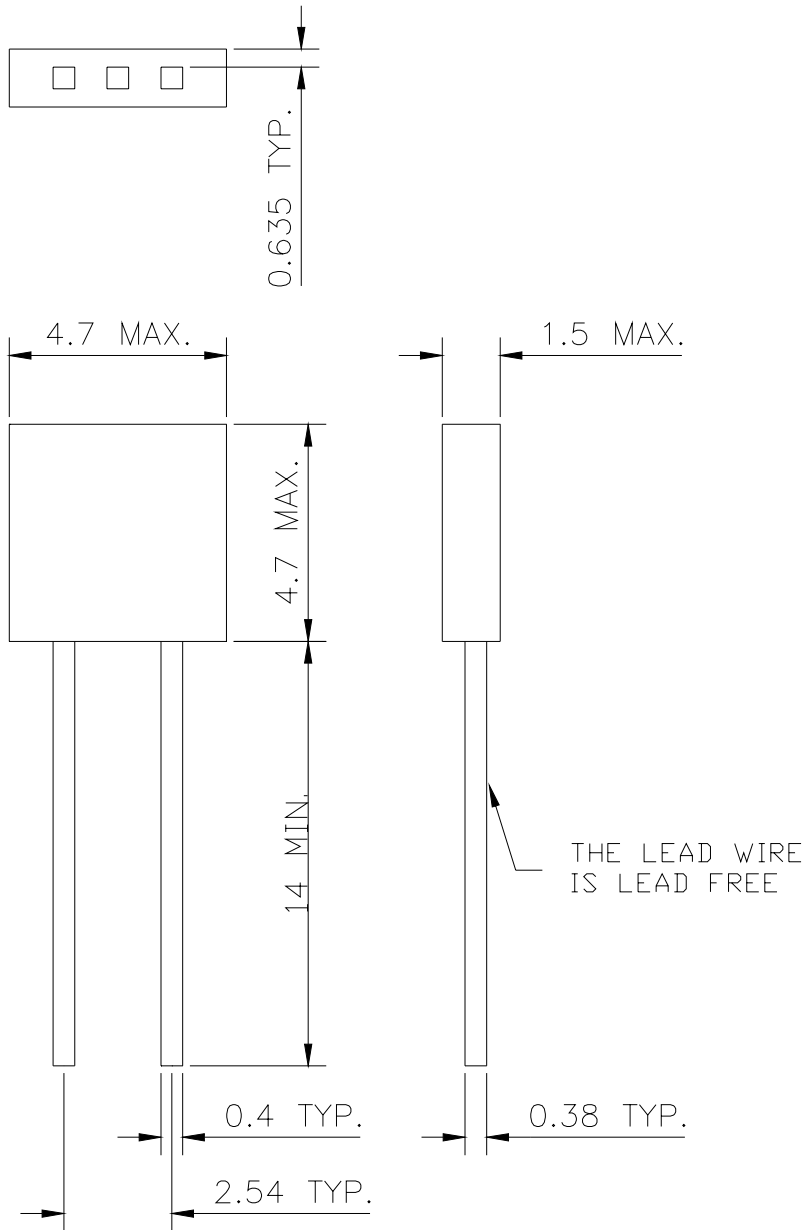
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SB10242506N

Temperature (°C)	Nominal Resistance(Ω)	Resistance Deviation(Ω)	Temperature Deviation(°C)
-20	923.55	2.84	0.74
-15	942.71	2.70	0.71
-10	961.84	2.56	0.67
-5	980.93	2.42	0.64
0	1000.00	2.40	0.60
5	1019.04	2.54	0.64
10	1038.04	2.67	0.67
15	1057.02	2.80	0.71
20	1075.96	2.93	0.74
25	1094.88	3.06	0.78
30	1113.76	3.18	0.81
35	1132.62	3.31	0.85
40	1151.44	3.44	0.88
45	1170.24	3.56	0.92
50	1189.00	3.69	0.95
55	1207.74	3.81	0.99
60	1226.44	3.94	1.02
65	1245.12	4.06	1.06
70	1263.76	4.18	1.09
75	1282.38	4.31	1.13
80	1300.96	4.43	1.16
85	1319.52	4.55	1.20
90	1338.04	4.68	1.23
95	1356.54	4.80	1.27
100	1375.00	4.80	1.30
105	1393.43	4.92	1.34

(1)Relationship of temperature with resistance

When $t \geq 0^\circ\text{C}$ When $t < 0^\circ\text{C}$
 $R_t = R_o (1 + At - Bt^2)$ $R_t = R_o [1 + At - Bt^2 - C(t-100)t^3]$
 $A = 3.8101875E-03$ $A = 3.8101875E-03$
 $B = 6.01875E-07$ $B = 6.01875E-07$
 $C = 6.14500E-12$
 $R_o = 1.000E+03$

(2)Temperature deviation

$\pm(a + b |t|) ^\circ\text{C}$
 $a = 0.600$
 $b = 0.007$

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