

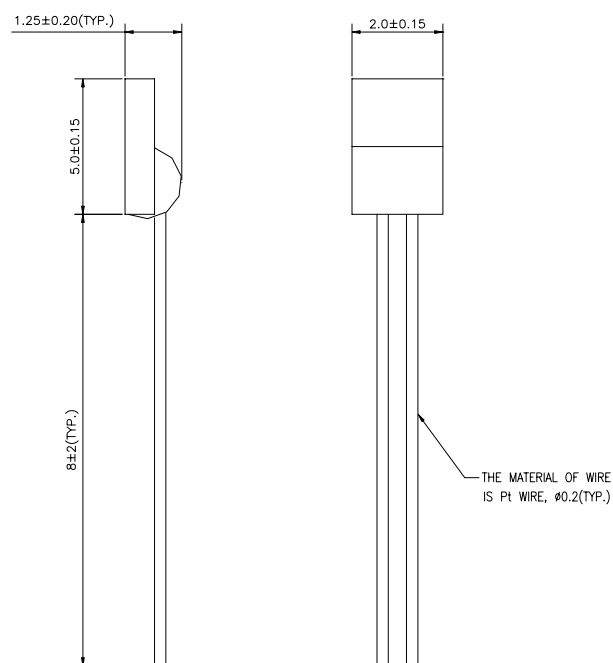
## Specification of Pt Thermal Sensor

### 1. Electrical Characteristics of SI10210508

- 1-1 Resistance value (at 0°C) :  $1000 \pm 2.4$  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%) : 15 sec. max. (in air, 1m/sec.)  
 1-5 Self heating : 4 mW/°C (in air, 1m, sec.)  
 1-6 Operation temperature range : -50°C to 750°C

### 2. Outline Drawings

Please see attached figure.



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

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Temperature (°C)	Nominal Resistance( $\Omega$ )	Resistance Deviation( $\Omega$ )	Temperature Deviation(°C)
-50	803.06	3.77	0.95
-25	901.92	3.05	0.78
0	1000.00	2.40	0.60
25	1097.35	3.01	0.78
50	1193.97	3.66	0.95
75	1289.87	4.30	1.13
100	1385.06	4.93	1.30
125	1479.51	5.55	1.48
150	1573.25	6.16	1.65
175	1666.27	6.76	1.83
200	1758.56	7.35	2.00
225	1850.13	7.94	2.18
250	1940.98	8.51	2.35
275	2031.11	9.07	2.53
300	2120.52	9.62	2.70
325	2209.20	10.16	2.88
350	2297.16	10.69	3.05
375	2384.40	11.21	3.23
400	2470.92	11.72	3.40
425	2556.72	12.22	3.58
450	2641.79	12.71	3.75
475	2726.14	13.19	3.93
500	2809.78	13.66	4.10
525	2892.68	14.12	4.28
550	2974.87	14.57	4.45
575	3056.34	15.00	4.63
600	3137.08	15.43	4.80
625	3217.10	15.85	4.98
650	3296.40	16.26	5.15
675	3374.98	16.66	5.33
700	3452.84	17.05	5.50
725	3529.97	17.43	5.68
750	3606.38	17.80	5.85

(1)Relationship of temperature with resistance

$$\begin{array}{ll} \text{When } t \geq 0^\circ\text{C} & \text{When } t < 0^\circ\text{C} \\ R_t = R_o (1 + At + Bt^2) & R_t = R_o [1 + At + Bt^2 + C(t-100)t^3] \\ A = 3.9083E-03 & A = 3.9083E-03 \\ B = -5.7750E-07 & B = -5.7750E-07 \\ & C = -4.1830E-12 \\ & R_o = 1.000E+03 \end{array}$$

(2)Temperature deviation

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

(3)Specification are subject to change without notice

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