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# SPECIFICATIONS

Product : ET Thermistor  
Part No. : 503ET-1S87L-40203  
Spec. No. : S04-0203  
Application : Thermometer

ACCEPTED BY CUSTOMER
Signature

CHECKED BY	SUBMITTED BY

SPECIFICATIONS	User Part No.;	Approved	Checked	Drawn
	Application ; Thermometer	Part No. ; 503ET-1S87L-40203	<i>H. Ishida</i>	<i>M. Miyake</i> <i>E. Egawa</i>

1. Scope

This specification defines rating, dimensions, electric properties, mechanical properties and climatic properties for the following part.

2. Part No.

503ET-1S87L-40203

3. Rating and Characteristic

3.1 Rated zero-power resistance R25 49.460 kohm ~ 50.542 kohm

3.2 Tolerance on rated zero-power resistance R25 +/- 0.09 % / group

Group	Resistance(kohm) Min. / Center / Max	Group	Resistance(kohm) Min. / Center / Max
C	49.460 / 49.505 / 49.549	I	50.000 / 50.045 / 50.090
D	49.550 / 49.595 / 49.639	J	50.091 / 50.136 / 50.180
E	49.640 / 49.685 / 49.729	K	50.181 / 50.226 / 50.270
F	49.730 / 49.775 / 49.819	L	50.271 / 50.316 / 50.360
G	49.820 / 49.865 / 49.909	M	50.361 / 50.406 / 50.451
H	49.910 / 49.955 / 49.999	N	50.452 / 50.497 / 50.542

Remark : the resistance values may vary slightly as the testing temperature is  $\pm 0.03^{\circ}\text{C}$  in accuracy.

3.3 Rated B-value

B25/85 4 055 K

(The B-value is calculated from R25 and R85)

3.4 Tolerance on rated B-value

B25/85 +/- 1 %

3.5 Thermal time constant

Approx. 3.2 s (in still air)

3.6 Dissipation factor

Approx. 0.7 mW/deg. C (in still air)

3.7 Rated maximum power dissipation

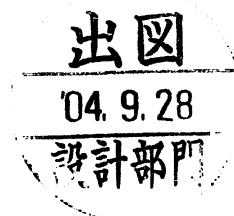
Approx. 3.5 mW (in still air)  
(Including self-heat of approx. 5 deg. C)

4. Category temperature range

-40 deg. C ~ 100 deg. C

5. Storage temperature range

-10 deg. C ~ 40 deg. C

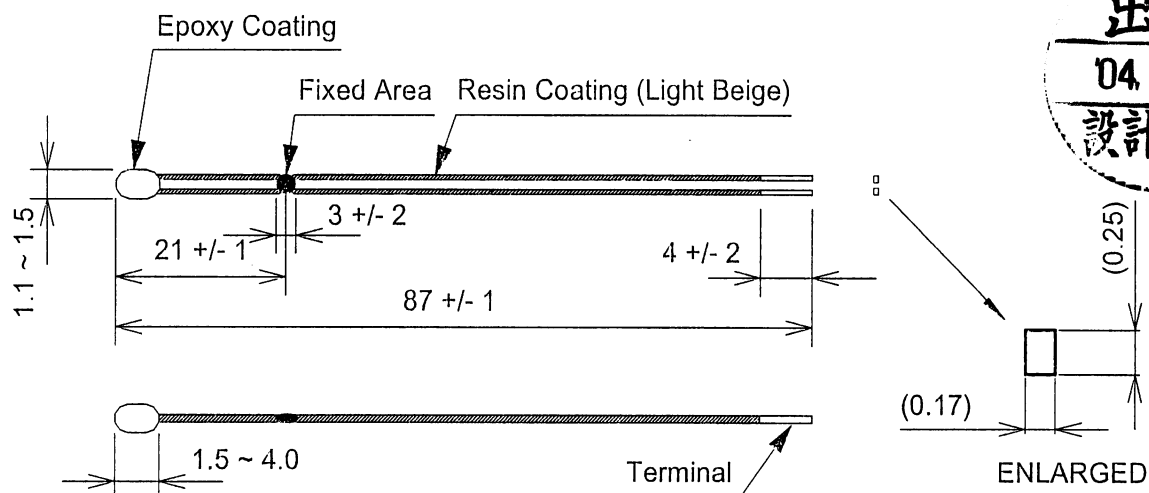


Company ;	Note ;	Date	Sep.27.2004
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## 6. Dimensions

Unit: mm

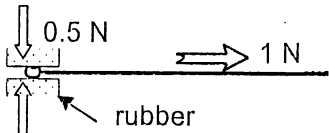


## 7. Properties

### 7.1 Electric properties

Item	Test Conditions	Criteria
7.1.1 Insulation resistance	Measured at DC 100 V between part of the epoxy coating and terminals.	Over 100 M ohm.

### 7.2 Mechanical properties

Item	Test Conditions	Criteria
7.2.1 Tensile of terminations	After 1N loading weight was applied to the wire terminations for 10 s +/- 1 s. 	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values. No visible damage.
7.2.2 Free fall	After three times natural fall to a maple board from 1 m high.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values. No visible damage.
7.2.3 Solderability	Terminals of the test samples shall be one time immersed into solder bath at 245 deg. C +/- 5 deg. C for 2 s ~ 3 s.  Solder : Sn-3.0Ag-0.5Cu flux : rosin 25 %, ethyl alcohol 75 %	Soldered area, more than 90 %.

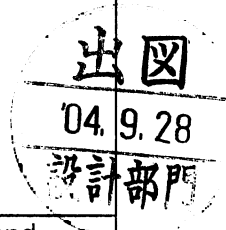
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7.2.4 Resistance to soldering heat	Terminals of the test samples shall be one time immersed into solder bath at 260 deg. C +/- 5 deg. C for 10 s +/- 1 s.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values. No visible damage.
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### 7.3. Climatic properties

Item	Test Conditions	Criteria
7.3.1 Cold	At -40 deg. C +/- 3 deg. C for 1 000 h and then stored at room temperature and humidity for 1 h.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.
7.3.2 Dry heat	At 100 deg. C +/- 3 deg. C for 1 000 h and then stored at room temperature and humidity for 1 h.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.
7.3.3 Change of temperature	100 times in the following order and conditions and then stored at room temperature and humidity for 1 h "Room temperature (Initial value)." "-20 deg. C +/- 3 deg. C for 5 min". "Room temperature for 3 min". "100 deg. C +/- 3 deg. C for 5 min". "Room temperature for 3 min".	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.
7.3.4 Damp heat	At 40 deg. C +/- 3 deg. C, 90 %RH ~ 95 %RH for 1 000 h and then stored at room temperature and humidity for 1 h.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.
7.3.5 Damp heat (Under loading)	At 40 deg. C +/- 3 deg. C, 90 %RH ~ 95 %RH with the DC 0.1 mA load for 1 000 h and then stored at room temperature and humidity for 1 h.	Variation of R25 and B25/85 after test shall be within +/- 1 % of those of the initial values.



#### Note

"Room temperature" is defined as the temperature between 15 deg.C to 35 deg.C.

"Room humidity" is defined as the humidity between 25 %RH to 75 %RH.

#### 8.Quantity balance

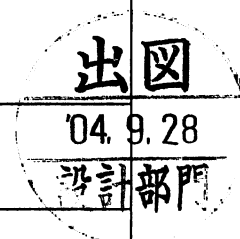
A Quantity balance of the tolerance group per shipment shall not be specified in purchase order.  
Quantity of each group may depend on production result.

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Revision records

Revision No.	Date	Revised by	Revision item	Former specification	New specification
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					



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