THERMISTOR SPECIFICATIONS

1) SCOPE

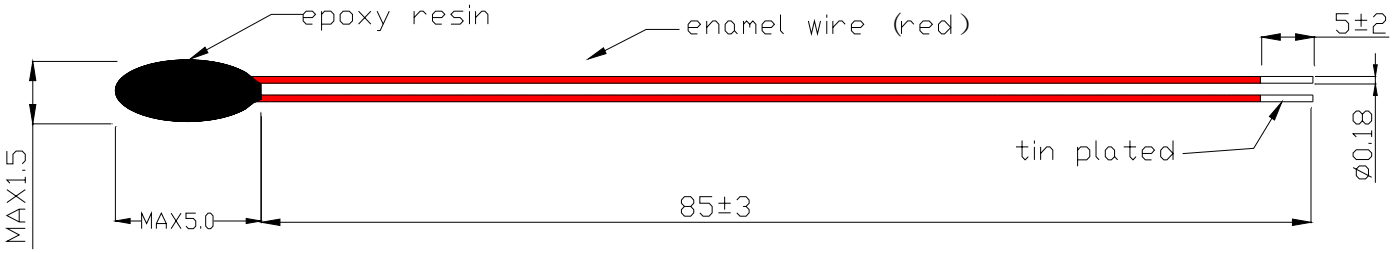
This specifications define ratings, dimension, insulation, climatic tests and mechanical characteristics for AT type temperature sensor.

2) PART NO. : TE N015NK050.00

3) RATING

3-1) Rated zero-power resistance R_{25} : 50kΩ ±1% (at 25℃)
3-2) B value. $B_{25/50}$: 3,950K ±1%
*The B value is calculated using the zero-power resistance values measured at 25℃ and 50℃.
3-3) Dissipation factor. : Approx. 0.7 mW/℃(in air)
3-4) Thermal time constant. : Approx. 3.2 s (in air)
3-5) Maximum power rating. : 3.5 mW (at 25℃)
3-6) Category temperature range (=Operating temperature range) : -30 to 110 ℃

4) DIMENSIONS UNIT: [mm]



5) Insulation (between epoxy resin and soldered terminals)

5-1) Dielectric withstanding voltage: AC 50V for one second.
5-2) Insulation resistance : Above 200 MΩ at DC 100V.

6) Climatic tests

6-1) Damp heat (under loading)

DC 1mA current shall be applied to the test samples in the temperature of 40℃ and relative humidity of 95%RH for 1,000 hours. After being stored in room temperature and humidity for one hour, the change ratio of R_{25} shall be within ±1% of the initial value.

6-2) Cold

Test samples shall be exposed in air at -30℃ for 1,000 hours. After being stored in room temperature and humidity for one hours, the change ratio of R_{25} shall be within ±1% of the initial value.

6-3) Rapid change of temperature

One cycle of the change of temperature shall be proceeded in the order of the following conditions.
. At -20℃, for 5 minutes.
. Room ambient temperature, for one minute.
. At + 70℃, for 5 minutes.
. Room ambient temperature, for one minute.
100 cycles of change of temperature shall be applied to the test samples. After being stored in room temperature and humidity for one hour, the change ratio of R_{25} shall be within ±1% of the initial value.

7) Mechanical Characteristics

7-1) Robustness of terminations

* Tensile to horizontal direction

Hold the thermistor body so that lead wire shall be horizontal. After 1 kg loading weight was applied to the lead wire horizontally for 10 seconds, there shall be no visible damage.

7-2) Free fall

After three times natural fall to a maple board from 75cm high, there shall be no visible damage.

8) TEMPERATURE VS RESISTANCE TABLE

$R_{25℃}$=50KΩ
$B_{25/50℃}$=3,950K

T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)	T(℃)	R(KΩ)
-30.0	868.567	4.0	132.796	38.0	29.020	72.0	8.187	106.0	2.854
-29.0	816.579	5.0	126.358	39.0	27.841	73.0	7.916	107.0	2.774
-28.0	768.089	6.0	120.268	40.0	26.733	74.0	7.655	108.0	2.696
-27.0	722.838	7.0	114.505	41.0	25.675	75.0	7.404	109.0	2.621
-26.0	680.588	8.0	109.050	42.0	24.664	76.0	7.163	110.0	2.548
-25.0	641.119	9.0	103.885	43.0	23.699	77.0	6.931		
-24.0	604.228	10.0	98.992	44.0	22.777	78.0	6.708		
-23.0	569.730	11.0	94.355	45.0	21.896	79.0	6.493		
-22.0	537.454	12.0	89.961	46.0	21.054	80.0	6.286		
-21.0	507.241	13.0	85.795	47.0	20.249	81.0	6.086		
-20.0	478.945	14.0	81.843	48.0	19.479	82.0	5.894		
-19.0	452.010	15.0	78.095	49.0	18.742	83.0	5.705		
-18.0	426.784	16.0	74.538	50.0	18.034	84.0	5.525		
-17.0	403.146	17.0	71.162	51.0	17.363	85.0	5.313		
-16.0	380.986	18.0	67.957	52.0	16.718	86.0	5.187		
-15.0	360.203	19.0	64.913	53.0	16.100	87.0	5.032		
-14.0	340.700	20.0	62.021	54.0	15.508	88.0	4.878		
-13.0	322.392	21.0	59.274	55.0	14.941	89.0	4.729		
-12.0	305.196	22.0	56.663	56.0	14.398	90.0	4.586		
-11.0	289.039	23.0	54.180	57.0	13.878	91.0	4.447		
-10.0	273.850	24.0	51.820	58.0	13.379	92.0	4.313		
-9.0	259.462	25.0	50.000	59.0	12.901	93.0	4.184		
-8.0	245.930	26.0	48.256	60.0	12.443	94.0	4.060		
-7.0	233.198	27.0	46.189	61.0	12.003	95.0	3.939		
-6.0	221.213	28.0	44.221	62.0	11.582	96.0	3.823		
-5.0	209.927	29.0	42.348	63.0	11.177	97.0	3.711		
-4.0	199.294	30.0	40.564	64.0	10.788	98.0	3.602		
-3.0	189.272	31.0	38.865	65.0	10.416	99.0	3.497		
-2.0	179.823	32.0	37.246	66.0	10.058	100.0	3.396		
-1.0	170.910	33.0	35.703	67.0	9.714	101.0	3.298		
0.0	162.499	34.0	34.233	68.0	9.384	102.0	3.203		
1.0	154.429	35.0	32.831	69.0	9.066	103.0	3.112		
2.0	146.806	36.0	31.494	70.0	8.761	104.0	3.023		
3.0	139.604	37.0	30.219	71.0	8.468	105.0	2.937		