Waitrony

Thermistor – Thermal Sensor
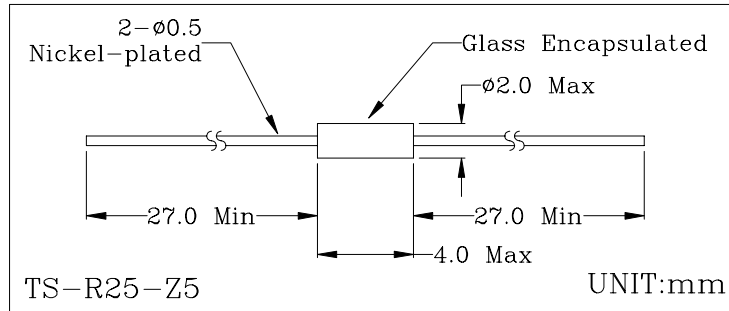
Module No.: TS-4K7Z5

1. General Description:

The TS-4K7Z5 is a compact size thermistor for temperature measurement, usually used for temperature measuring as well as sensor in wide range application. It is a newly developed thermistor for sensor of high heat resistance adding to bead, disk and chip ones.

2. Features

- Compact Size
- Light Weight
- High Reliability
- Low Cost
- Glass Encapsulated
- Widely Applicable

Dimensions

2-ø0.5 Nickel-plated
Glass Encapsulated
ø2.0 Max
27.0 Min
27.0 Min
4.0 Max
TS-R25-Z5
UNIT:mm

3. Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Rated Power at 25°C	P_{R25}	10.5	mW
Operating Temperature	Topr	-50 ~ +250	°C
Storage Temperature	Tstg	-50 ~ +250	°C
Soldering Temperature *1	Tsol	240	°C

*1 At the position of 2mm from the glass package within 5 second.
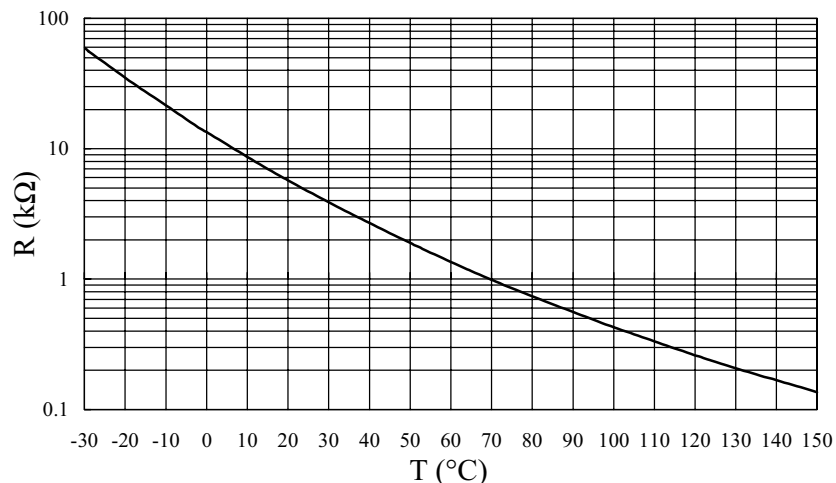
4. Electro-thermal Characteristics

Parameter	Symbol	Value	Unit	Tolerance
Resistance at 25°C	R_{25}	4.7	kΩ	±10%
Material Thermal Constant *2	B	3,540	K	±2%
Thermal Time Constant *3	τ	≤ 20	sec.	
Dissipation Factor *4	δ	2.0	mW/°C	

*2 Material thermal constant (B value) is calculated from R_{25} and R_{85} where R_{25} and R_{85} are the resistance at 25°C and 85°C respectively.

*3 Thermal time constant (τ) is the time required by a thermistor to change 63.2% of the difference between its initial and final temperature.

*4 Dissipation factor (δ) is power required to raise thermistor temperature 1°C.

Resistance vs Temperature

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5. Resistance – Temperature

T (°C)	R (kΩ)	T (°C)	R (kΩ)	T (°C)	R (kΩ)	T (°C)	R (kΩ)
-30	59.5531	16	6.7252	62	1.2685	108	0.3496
-29	56.0001	17	6.4546	63	1.2285	109	0.3410
-28	53.0091	18	6.1971	64	1.1899	110	0.3326
-27	50.3349	19	5.9517	65	1.1529	111	0.3245
-26	47.8446	20	5.7179	66	1.1175	112	0.3165
-25	45.4737	21	5.4949	67	1.0832	113	0.3088
-24	43.1979	22	5.2822	68	1.0501	114	0.3013
-23	41.0142	23	5.0792	69	1.0182	115	0.2940
-22	38.9289	24	4.8853	70	0.9876	116	0.2869
-21	36.9501	25	4.7000	71	0.9581	117	0.2800
-20	35.0838	26	4.5228	72	0.9297	118	0.2733
-19	33.3320	27	4.3534	73	0.9024	119	0.2667
-18	31.6923	28	4.1912	74	0.8761	120	0.2604
-17	30.1587	29	4.0359	75	0.8507	121	0.2543
-16	28.7225	30	3.8871	76	0.8263	122	0.2483
-15	27.3733	31	3.7445	77	0.8028	123	0.2425
-14	26.0998	32	3.6078	78	0.7801	124	0.2369
-13	24.8914	33	3.4766	79	0.7582	125	0.2315
-12	23.7385	34	3.3508	80	0.7371	126	0.2262
-11	22.6331	35	3.2300	81	0.7167	127	0.2211
-10	21.5696	36	3.1140	82	0.6970	128	0.2162
-9	20.5444	37	3.0027	83	0.6779	129	0.2114
-8	19.5564	38	2.8957	84	0.6595	130	0.2068
-7	18.6066	39	2.7930	85	0.6416	131	0.2023
-6	17.6979	40	2.6942	86	0.6243	132	0.1980
-5	16.8346	41	2.5993	87	0.6075	133	0.1938
-4	16.0221	42	2.5081	88	0.5911	134	0.1897
-3	15.2664	43	2.4204	89	0.5753	135	0.1857
-2	14.5736	44	2.3361	90	0.5599	136	0.1819
-1	13.9499	45	2.2550	91	0.5449	137	0.1781
0	13.4014	46	2.1771	92	0.5304	138	0.1745
1	12.8397	47	2.1021	93	0.5162	139	0.1710
2	12.2953	48	2.0300	94	0.5024	140	0.1675
3	11.7699	49	1.9608	95	0.4890	141	0.1641
4	11.2646	50	1.8941	96	0.4759	142	0.1608
5	10.7800	51	1.8300	97	0.4632	143	0.1575
6	10.3162	52	1.7684	98	0.4508	144	0.1543
7	9.8732	53	1.7092	99	0.4388	145	0.1512
8	9.4506	54	1.6522	100	0.4272	146	0.1480
9	9.0478	55	1.5974	101	0.4166	147	0.1449
10	8.6644	56	1.5447	102	0.4062	148	0.1418
11	8.2995	57	1.4941	103	0.3961	149	0.1386
12	7.9524	58	1.4453	104	0.3863	150	0.1355
13	7.6222	59	1.3985	105	0.3768		
14	7.3081	60	1.3535	106	0.3675		
15	7.0094	61	1.3102	107	0.3584		