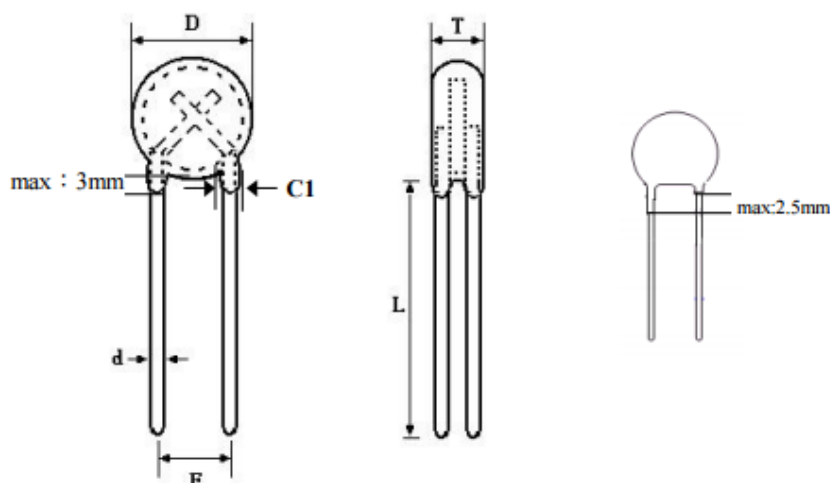


Datasheet

RS 5Ω Protection NTC Thermistor, 93s, 13 Dia. x 6mm

RS Stock number [516-7833](#)

Dimensions: (mm)



D : Diameter with coating
F : Forming Pitch
T : Thickness of thermistor with coating
L : Length of leads
d : Diameter of leads

2. Marking

15SP	Nominal Diameter
UEI 010	Resistance at 25°C
0R7	: 0.7 Ω
1R3	: 1.3 Ω
003~008	: 3~8 Ω
010~080	: 10~80 Ω
120	: 120 Ω

Specifications

Style: Disc Type Thermistor (negative temperature coefficient)

Material Coating: Silicone


Colour Coating: Black

Material of Lead: Cu,Fe,Sn

Maximum Ratings (Ambient TA=25°C)

	Item	Conditions	Max. Rated Value
a	Rated Temperature	in still air	-40 ~ +200 °C
b	Max. Permissible Working Current	Ta : 25 °C	5 Amp.

Electrical Characteristics

	Item	Conditions	Specification
a	Zero Power Resistance	Ta : 25 ±0.2 °C , I ≤ 0.5mA	10 Ω ± 20 %
b	Beta Value	8876*Log(R25/R50)	3047 ± 7 %
c	Thermal Dissipation Constant	Ta : 25 °C	19 mW/°C (Approx.)
d	Thermal Time Constant	Ta : 25 °C	103 sec. (Approx.)
e	Insulation	1000 Vdc	> 500 MΩ
f	V-I Test	Steady State Current I : 1 Amps I : 2 Amps I : 3 Amps I : 4 Amps I : 5 Amps	Resistance Under Load 1471 mΩ (Approx.) 611 mΩ (Approx.) 370 mΩ (Approx.) 241 mΩ (Approx.) 182 mΩ (Approx.)
g	UL APPROVAL MAX. load capacitance(uf), { 240Vac/1240uf } , compares of the twice R-T value of Before test & After test, the variation of temperature must be within ±20°C.		
h	Permissible Electrolytic Capacitor suggestion to use in the safety range is under {340Vdc/440uf}		
i	UL Test Temperature (min : 0 °C)		
k	<p>Maximum power rating(Pmax.)</p>  <p>The customer makes the test according to the actual design demand temperature</p>		

Resistance : Thermistor shall be tested in constant temperature oil bath .

Suggested that every three months enter UEI the website downloading electrical specification related news or contact with the Sales Dept. to demand the new electrical specification related news.

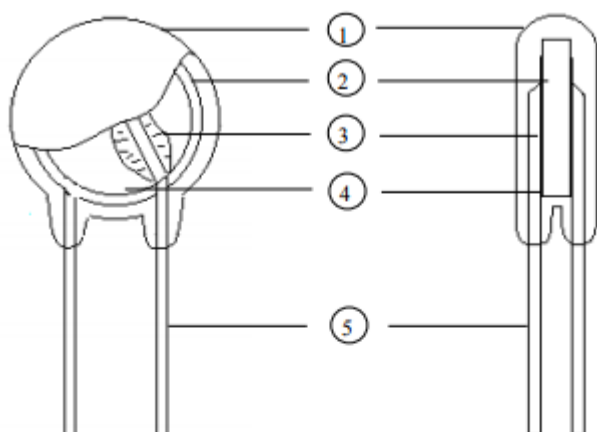
Mechanical Characteristics

	Item	Conditions	Specification
a	Terminal Pull	Load : 2.5 kg, time : 5 sec.	No Break Out
b	Terminal Bend	Load : 1 kg Bend : 0° → 90° → 0° * 2 Cycles	No Break Out
c	Solderability	230±5°C , 3± 0.5 sec.	at Least 95% of the lead wire circumference is covered with solder.
d	Solder Heat Resistance	260± 5°C , 3± 0.5 sec.	$\Delta R/R : \leq \pm 10\%$

Reliability Test

	Item	Conditions	Specification Variable Rate of Resistance
a	Thermal Shock	-40°C *30' → +25°C *30' → +150°C *30' → + 25°C *30' *8 Cycles	Max.+15%
b	Humidity	45°C, 95% R.H.*1000 Hours 300mA on 2 Min. off 6 Min. * 5000 Times	Max.+15%
c	Continuous Load Life	25°C , 5 Amps *1000 Hours	Max.+25%
d	Temperature Storage	60°C *300 mA*1000 Hours	Max.+25%

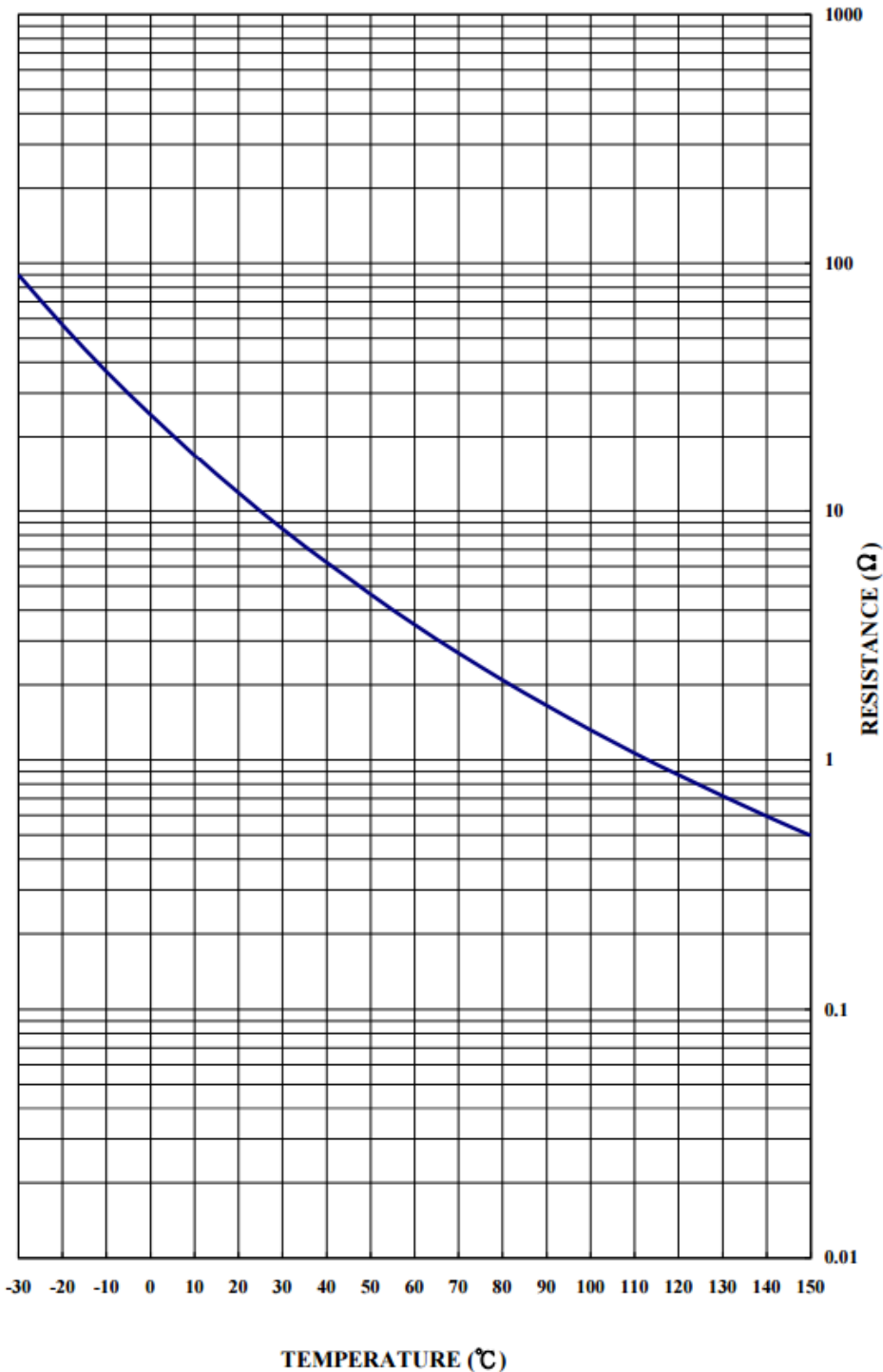
Construction Diagram



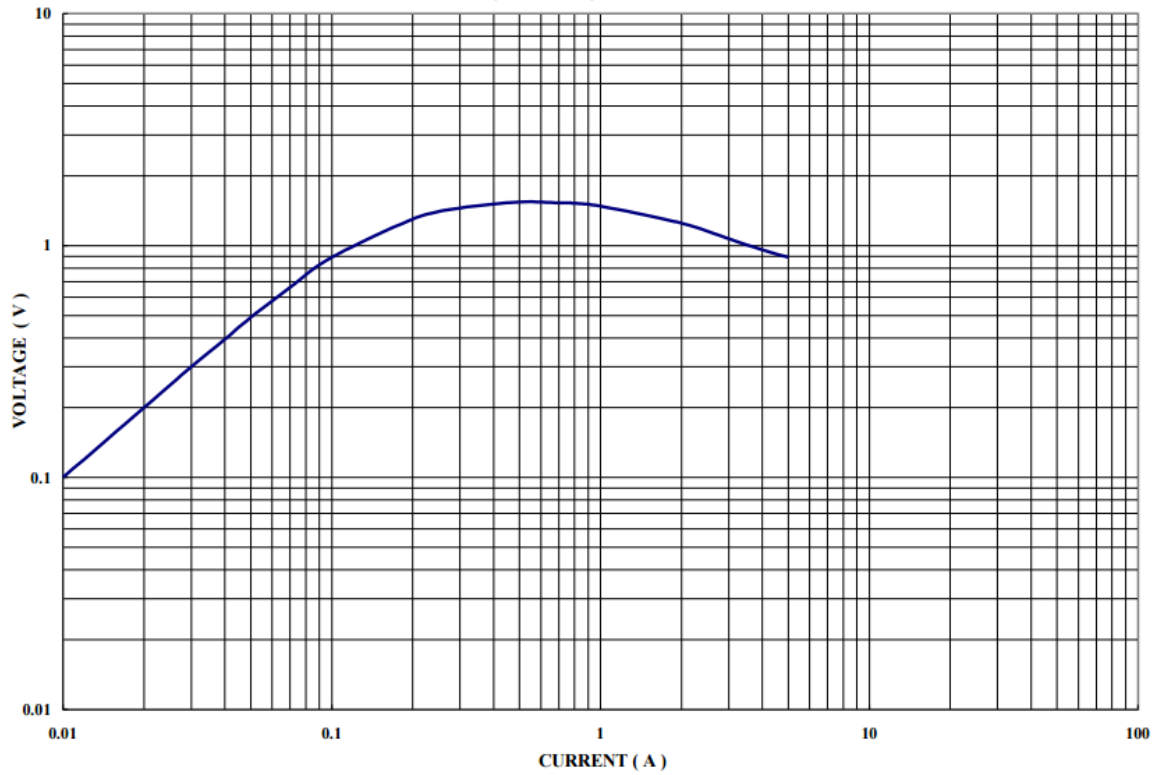
No.	Component	Material
1	Coating	Silicone
2	NTC Thermistor	Mn,Ni,Cu,Fe,Oxide
3	Solder	Sn-Ag
4	Electrode	Ag
5	Lead Wire	(Cu,Fe,Sn) Material

Silicone	Flame Class	94V-0
	UL File No.	E153067

R-T Curve (Nominal) Part No : N15SP010



V-I Curve (Nominal) Part No. : N15SP010



Life Stress Test

Continuous load life

Ambient Temperature: 25 ± 5 °C

Current : 5 Amps.

Duration : 1000 hours

Specification: Within Max.+25% of initial value.

NO.	INITIAL	AFTER		RESULT.
	RESISTANCE @ 25°C (Ω)	RESISTANCE @ 25°C (Ω)	CHANGE (%)	
1	9.40	9.85	4.79	PASS
2	9.87	10.23	3.65	PASS
3	9.39	9.85	4.90	PASS
4	10.31	9.89	-4.07	PASS
5	9.69	10.23	5.57	PASS
AVG	9.73	10.01	2.97	
DATE	Aug.07,2008	Sep.22,2008		

Temperature Storage

Ambient Temperature: 60 ± 5 °C

Current : 300 Amps.

Duration : 1000 hours

Specification: Within Max.+25% of initial value.

NO.	INITIAL	AFTER		RESULT.
	RESISTANCE @ 25°C (Ω)	RESISTANCE @ 25°C (Ω)	CHANGE (%)	
1	9.94	10.30	3.62	PASS
2	9.64	10.11	4.88	PASS
3	9.54	10.03	5.14	PASS
4	9.61	10.06	4.68	PASS
5	9.45	9.92	4.97	PASS
AVG	9.64	10.08	4.66	
DATE	Aug.07,2008	Sep.22,2008		

Humidity

Ambient Temperature: 45 ± 5 °C

Relative Humidity: 90~95%

Current : 300 mA / On 2 min Off 6 min

Duration : 1000 hours

Specification: Within Max.+15% of initial value.

NO.	INITIAL	AFTER		RESULT.
	RESISTANCE @ 25°C (Ω)	RESISTANCE @ 25°C (Ω)	CHANGE (%)	
1	9.63	9.91	2.91	PASS
2	9.63	9.25	-3.95	PASS
3	9.71	9.38	-3.40	PASS
4	9.35	9.74	4.17	PASS
5	9.29	9.69	4.31	PASS
AVG	9.52	9.59	0.81	
DATE	Aug.07,2008	Sep.22,2008		

Thermal Shock

Condition: -40°C * 30 min - +25 °C * 30 min

+150 °C * 3 min - 25 °C * min

(8 cycles)

Specification: Within Max.+15% of initial value.

NO.	INITIAL	AFTER		RESULT.
	RESISTANCE @ 25°C (Ω)	RESISTANCE @ 25°C (Ω)	CHANGE (%)	
1	10.96	11.05	0.82	PASS
2	11.21	11.13	-0.71	PASS
3	10.80	10.84	0.37	PASS
4	10.69	10.75	0.56	PASS
5	10.82	10.86	0.37	PASS
AVG	10.90	10.93	0.28	
DATE	Sep.21,2008	Sep.22,2008		



Mechanical Characteristics Test

Lead terminal pull strength (on 5 devices)

Load: 2.5kg

Holding Time: 5 ± 1 SEC

The results are satisfactory

Lead terminal bend strength test (on 5 devices)

Load: 1kg

Bend: $0^\circ \rightarrow 90^\circ \rightarrow 0^\circ$, 2 cycles

The results are satisfactory

Solderability (on 5 devices)

Solder bath: $230 \pm 5^\circ\text{C}$

Time: 3 ± 0.5 SEC

Specification: The coverage of fresh solder on lead terminals were more than 95%

The results are satisfactory

Solder hear resistance (on 5 devices)

Solder bath: $260 \pm 5^\circ\text{C}$

Time: 3 ± 0.5 SEC

Specification: Within $\pm 10\%$ of the initial value

The results are satisfactory

NO.	INITIAL	AFTER			RESULT
	RESISTANCE @ 25°C (Ω)	RESISTANCE @ 25°C (Ω)	CHANGE (%)	MECHANICAL DAMAGE	
1	10.99	10.89	-0.91	NONE	PASS
2	10.23	10.21	-0.20	NONE	PASS
3	10.25	10.12	-1.27	NONE	PASS
4	10.67	10.55	-1.12	NONE	PASS
5	10.88	10.67	-1.93	NONE	PASS
AVG	10.60	10.49	-1.09		
DATE	Sep.22,2008	Sep.22,2008			