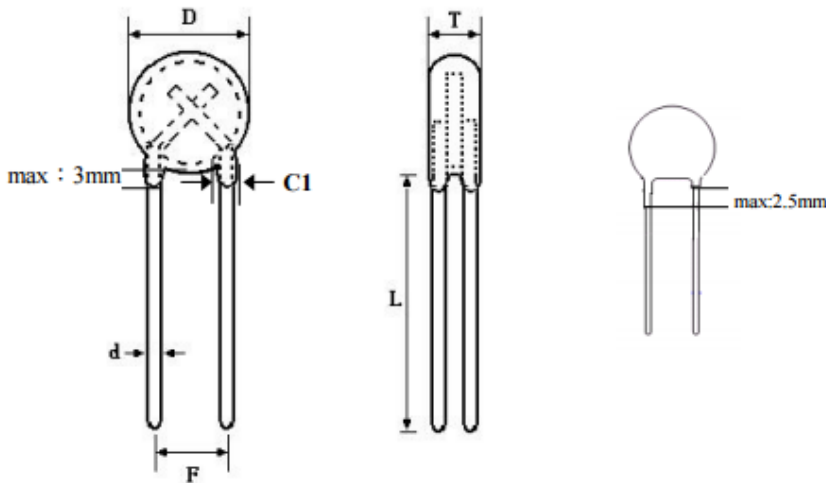


# Datasheet

## RS 5Ω Protection NTC Thermistor, 100s, 15 Dia. x 6mm

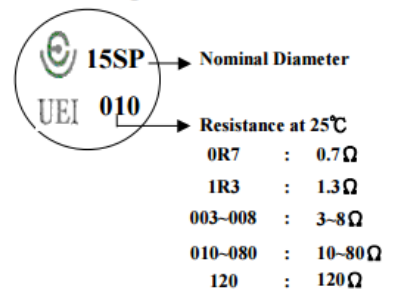
RS Stock number [516-7861](#)

### 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



## Specifications

Style: Disc Type Thermistor ( negative temperature coefficient)

Material Coating: Silicone

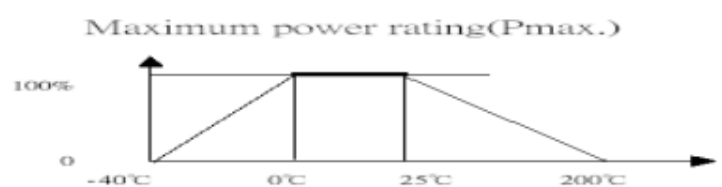
Colour Coating: Black

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 style="text-align: center;">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.

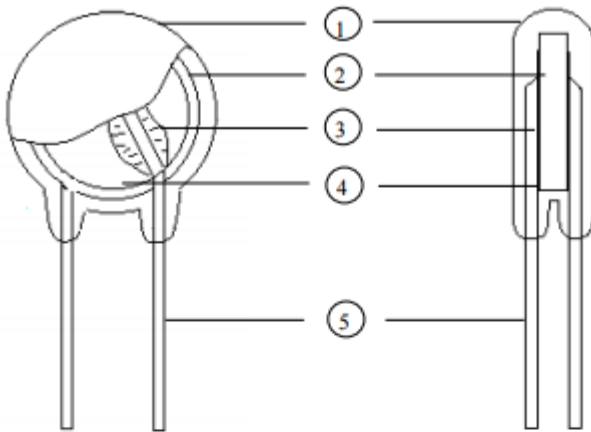
## Mechanical Characteristics

	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%

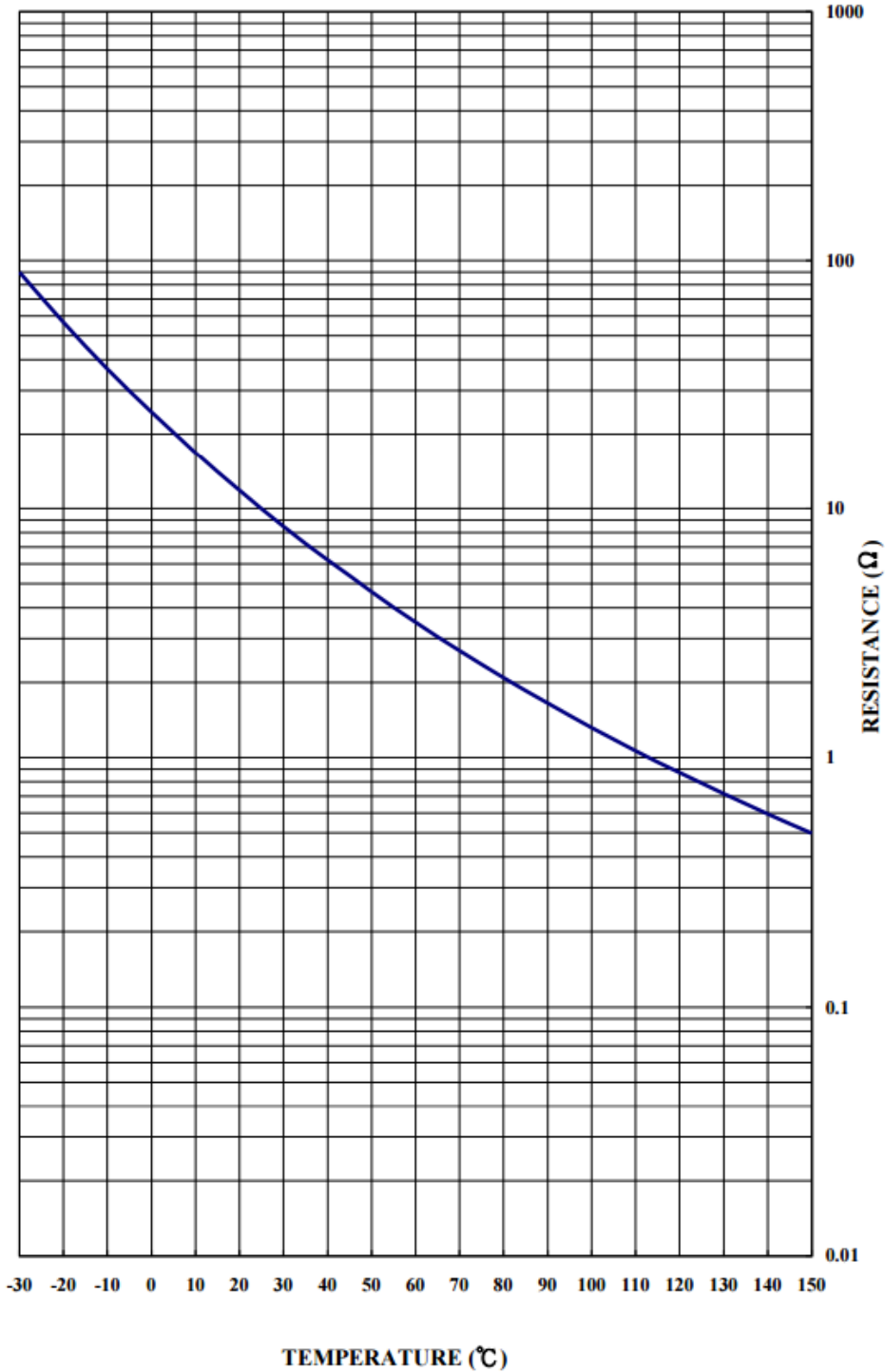
### Construction Diagram



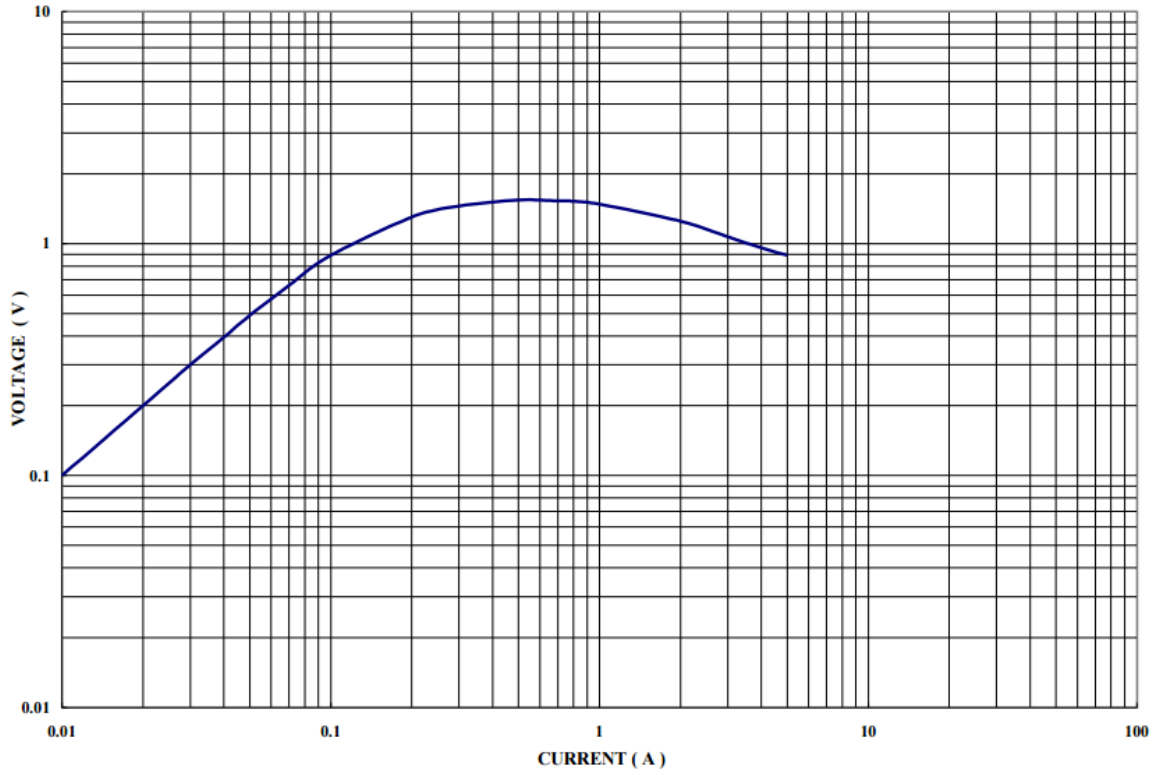
No.	Component	Material
1	Coating	Silicone
2	NTC Thermistor	Mn,Ni,Cu,Fe,Oxide
3	Solder	Sn-Ag
4	Electrode	Ag
5	Lead Wire	( Cu,Fe,Sn ) Material

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:  $25 \pm 5$  °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:  $60 \pm 5$  °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° → 90° → 0° , 2 cycles

The results are satisfactory

Solderability (on 5 devices)

Solder bath: 230 ± 5 °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 ± 5 °C

Time: 3 ± 0.5 SEC

Specification: Within ± 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			