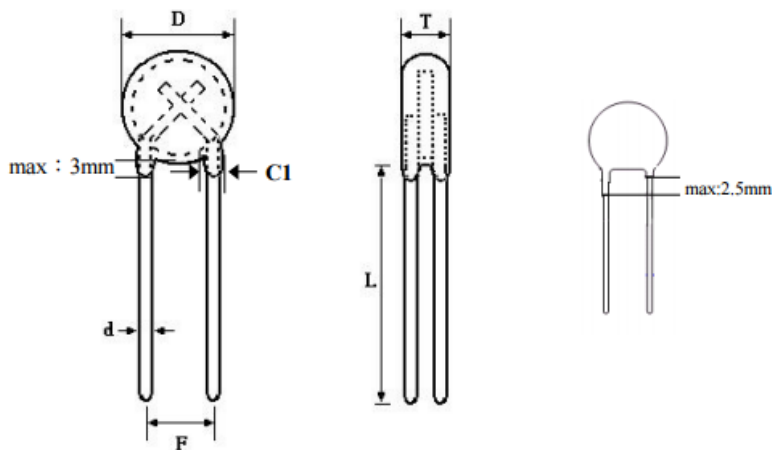


# Datasheet

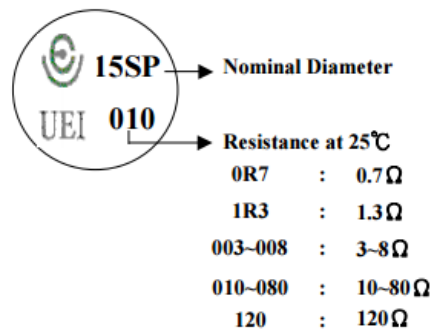
## Protection NTC Thermistor

RS Stock number [516-7849](#)

Dimensions: (mm)



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



15Φ	D	F	T	L	d	C1
max.	17.0	8.5	6.0	-	1.02	2.20
$\bar{X}$	-	7.5	-	-	1.00	-
min.	-	6.5	-	25.0	0.98	1.00

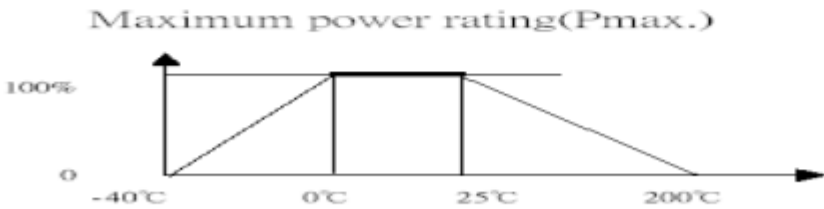
## Specifications

- Style : Disc Type Thermistor (Negative Temperature Coefficient)
- Material of Coating : Silicone
- Color of Coating : Black
- Material of Lead : ( Cu,Fe,Sn ) Material

Maximum Ratings (Ambient  $T_a=25^\circ\text{C}$ )

	Item	Conditions	Max. Rated Value
a	Rated Temperature	in still air	-40 ~ +200 °C
b	Max. Permissible Working Current	$T_a : 25^\circ\text{C}$	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**

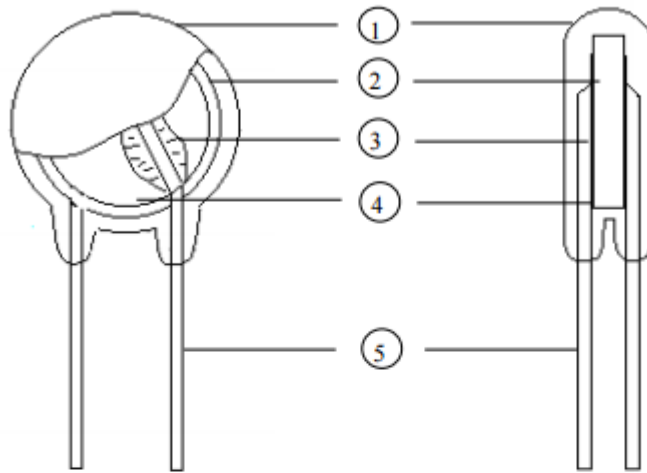
	Item	Conditions	Specification
a	Terminal Pull	Load : 2.5 kg, time : 5 sec.	No Break Out
b	Terminal Bend	Load : 1 kg Bend : 0° → 90° → 0° * 2 Cycles	No Break Out
c	Solderability	230±5°C , 3± 0.5 sec.	at Least 95% of the lead wire circumference is covered with solder.
d	Solder Heat Resistance	260± 5°C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

**Note : Each test shall be performed with new sample individually**

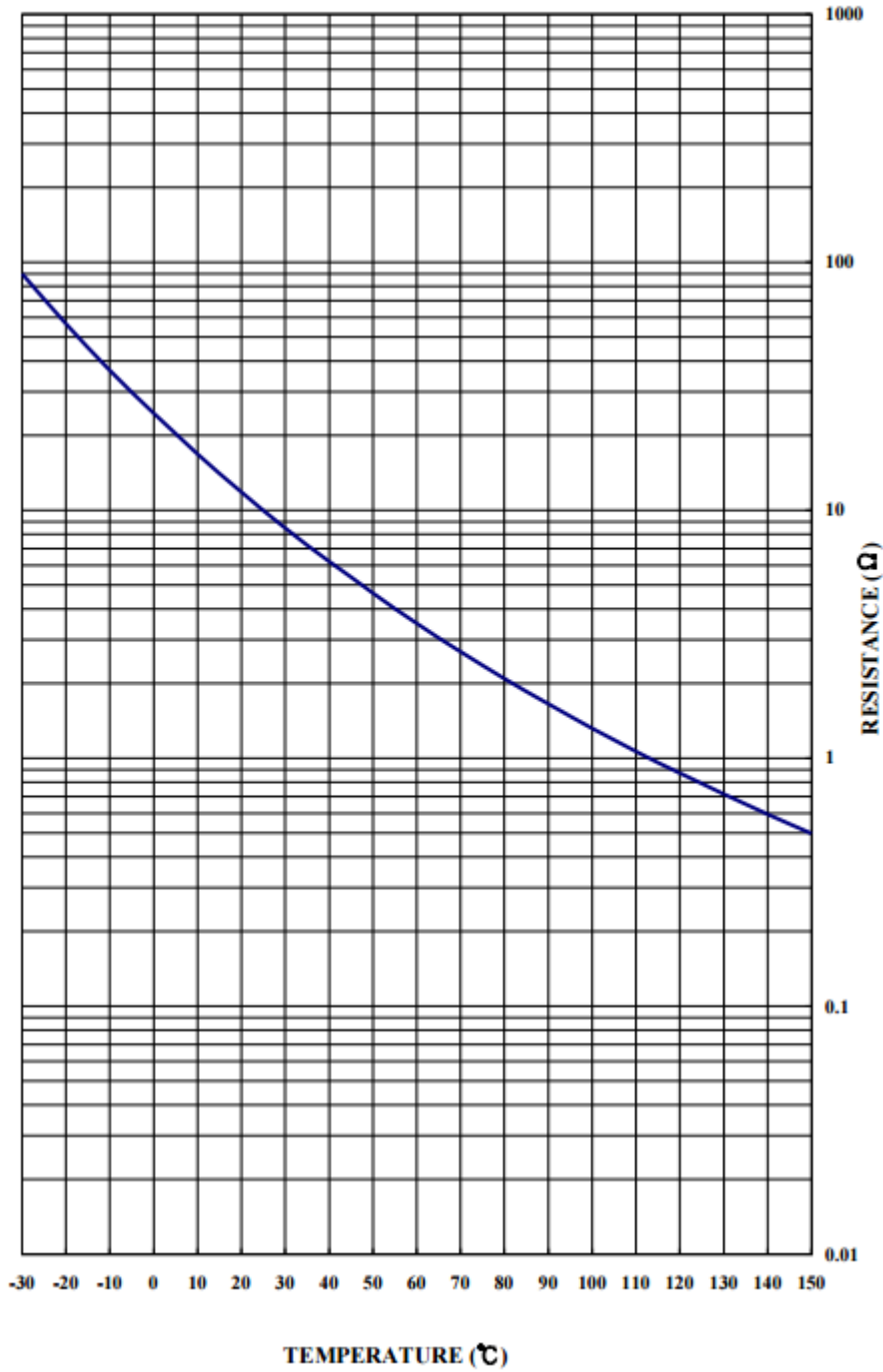
**Construction Diagram**



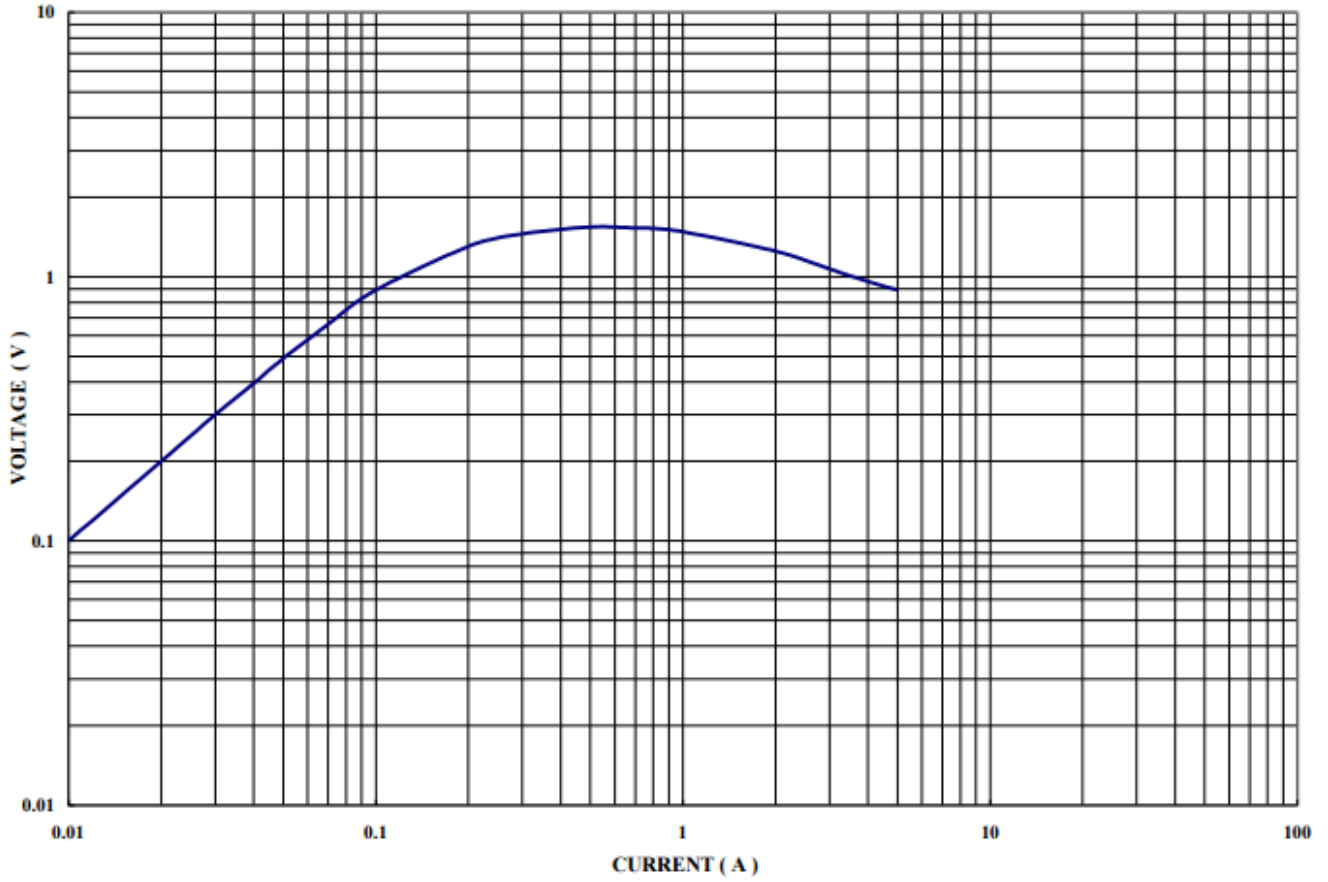
No.	Component	Material
1	Coating	Silicone
2	NTC Thermistor	Mn,Ni,Cu,Fe,Oxide
3	Solder	Sn-Ag
4	Electrode	Ag
5	Lead Wire	( Cu,Fe,Sn ) Material

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

R-T Curve (Nominal) Part No : N15SP010



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





1. LIFE STRESS TEST

1-1. 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		

1-2. TEMPERATURE STORAGE

AMBIENT TEMPERATURE : 60 ± 5 °C

CURRENT : 300 mAmps.

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		

**1-3. 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		

**1-4. THERMAL SHOCK.**

CONDITION : -40 °C \* 30 MIN. → +25 °C \* 30 MIN.

+150 °C \* 30 MIN. → +25 °C \* 30 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		



2. MECHANICAL CHARACTERISTICS TEST

2-1. LEAD TERMINAL PULL STRENGTH TEST (ON 5 DEVICES)

LOAD : 2.5 Kg  
HOLDING TIME : 5 ± 1 SEC  
THE TEST RESULTS ARE SATISFACTORY.

2-2. LEAD TERMINAL BEND STRENGTH TEST (ON 5 DEVICES)

LOAD : 1 Kg  
BEND : 0° → 90° → 0°, 2 CYCLES  
THE TEST RESULTS ARE SATISFACTORY.

2-3. 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 TEST RESULTS ARE SATISFACTORY.

2-4 SOLDER HEAT RESISTANCE. (ON 5 DEVICES)

SOLDER BATH : 260 ± 5 °C  
TIME : 3 ± 0.5 SEC  
SPECIFICATION : WITHIN ± 10 % OF INITIAL VALUE.

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			