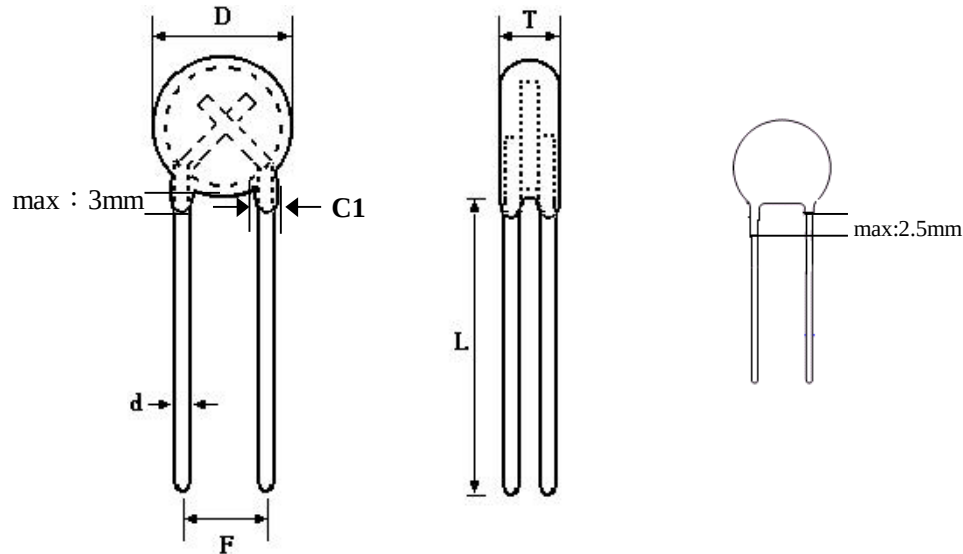


1. Dimensions



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

UNIT : mm

D : Diameter with coating

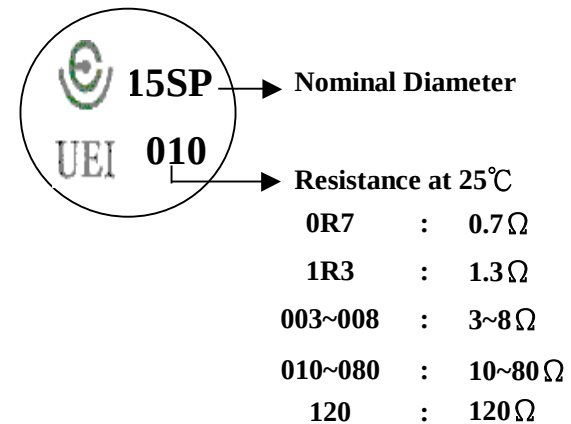
F : Forming Pitch

T : Thickness of thermistor with coating

L : Length of leads

d : Diameter of leads

2. Marking



NTC THERMISTORS

PART NO : N15SP010M-5



UPPERMOST ELECTRONIC INDUSTRIES CO., LTD.

SPECIFICATION :

1. Style : Disc Type Thermistor (Negative Temperature Coefficient)

1-1 Material of Coating : Silicone

1-2 Color of Coating : Black

1-3 Material of Lead : (Cu,Fe,Sn) Material

2. Maximum Ratings (Ambient Ta=25℃)

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

3. Electrical Characteristics

	Item	Conditions	Specification
a	Zero Power Resistance	Ta : 25 ±0.2 ℃ , I ≤ 0.5mA	10 Ω ± 20 %
b	Beta Value	8876*Log(R25/R50)	3047 ± 7 %
c	Thermal Dissipation Constant	Ta : 25 ℃	19 mW/℃ (Approx.)
d	Thermal Time Constant	Ta : 25 ℃	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℃ .		
h	Permissible Electrolytic Capacitor suggestion to use in the safety range is under 《 340Vdc/440uf 》		
i	UL Test Temperature (min : 0 ℃)		
k	Maximum power rating(Pmax.) The customer makes the test according to the actual design demand temperature		

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.

4.Mechanical Characteristics

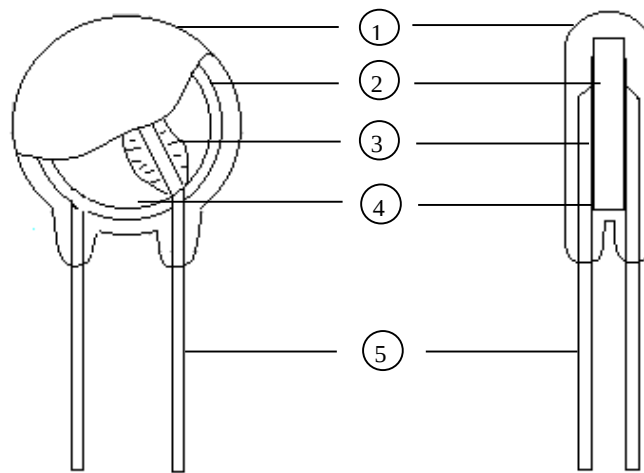
	Item	Conditions	Specification
a	Terminal Pull	Load : 2.5 kg, time : 5 sec.	No Break Out
b	Terminal Bend	Load : 1 kg Bend : 0° → 90° → 0° * 2 Cycles	No Break Out
c	Solderability	230±5°C , 3± 0.5 sec.	at Least 95% of the lead wire circumference is covered with solder.
d	Solder Heat Resistance	260± 5°C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

5. 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

6. 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

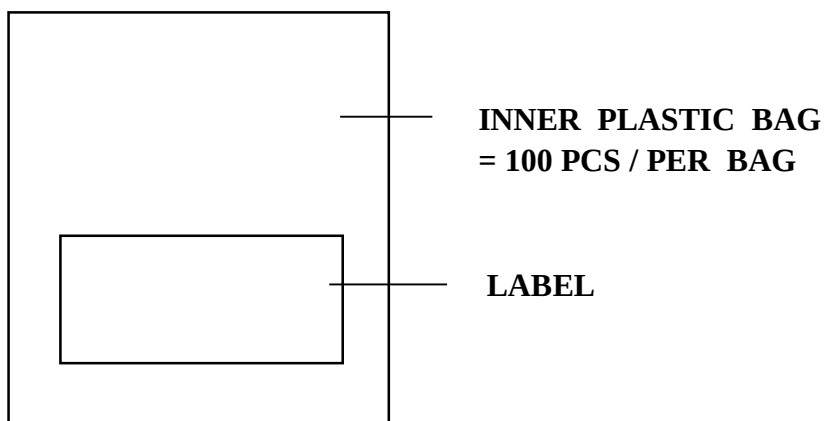
Silicone	Flame Class	94V-0
	UL File No.	E153067

7. PACKING METHOD

1.MATERIAL OF PACKING

ITEM	MATERIAL	SIZE (L*W*H) mm
INNER PLASTIC BAG	POLYESTER	200 * 130 * 0.08
CARTON	CARTON PAPER	310 * 255 *240

2.PACKING DETAIL

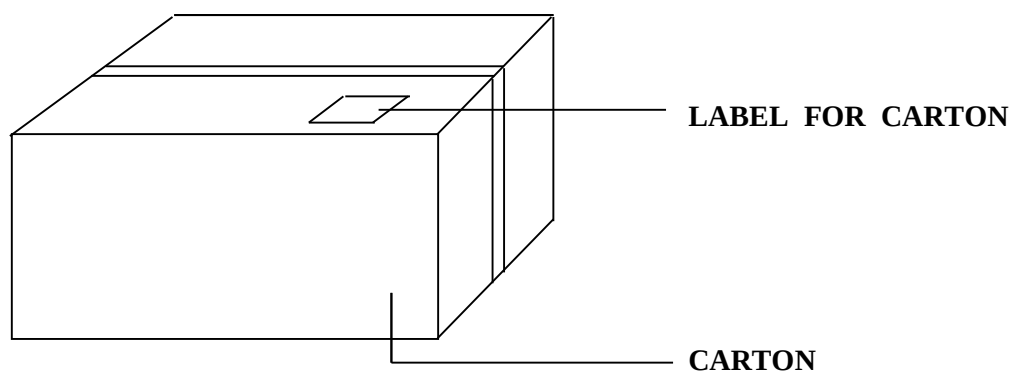


LABEL :

	UPPERMOST The Manufacturer of NTC/PTC/VDR	 Pb ROHS
CUST. P/N :		
PART	NO : N15SP010 -5	
LOT	NO :	*
Q、TY	: 100	DATE:xx/xx/xxx
x		

3.PACKING METHOD

100 PCS / BAG * 40 BAG / CARTON = 4000 PCS / CARTON



Part Number Code.

Example :

N 1 5 S P 0 1 0 M - 5
(1) (2) (3) (4) (5) (6)

(1) NTC. (Negative Temperature Coefficient)

(2) Nominal Diameter :

08	:	8mm
10	:	10mm
13	:	13mm
15	:	15mm
20	:	20mm

(3) SP : Surge Protection

(4) Resistance of 25°C

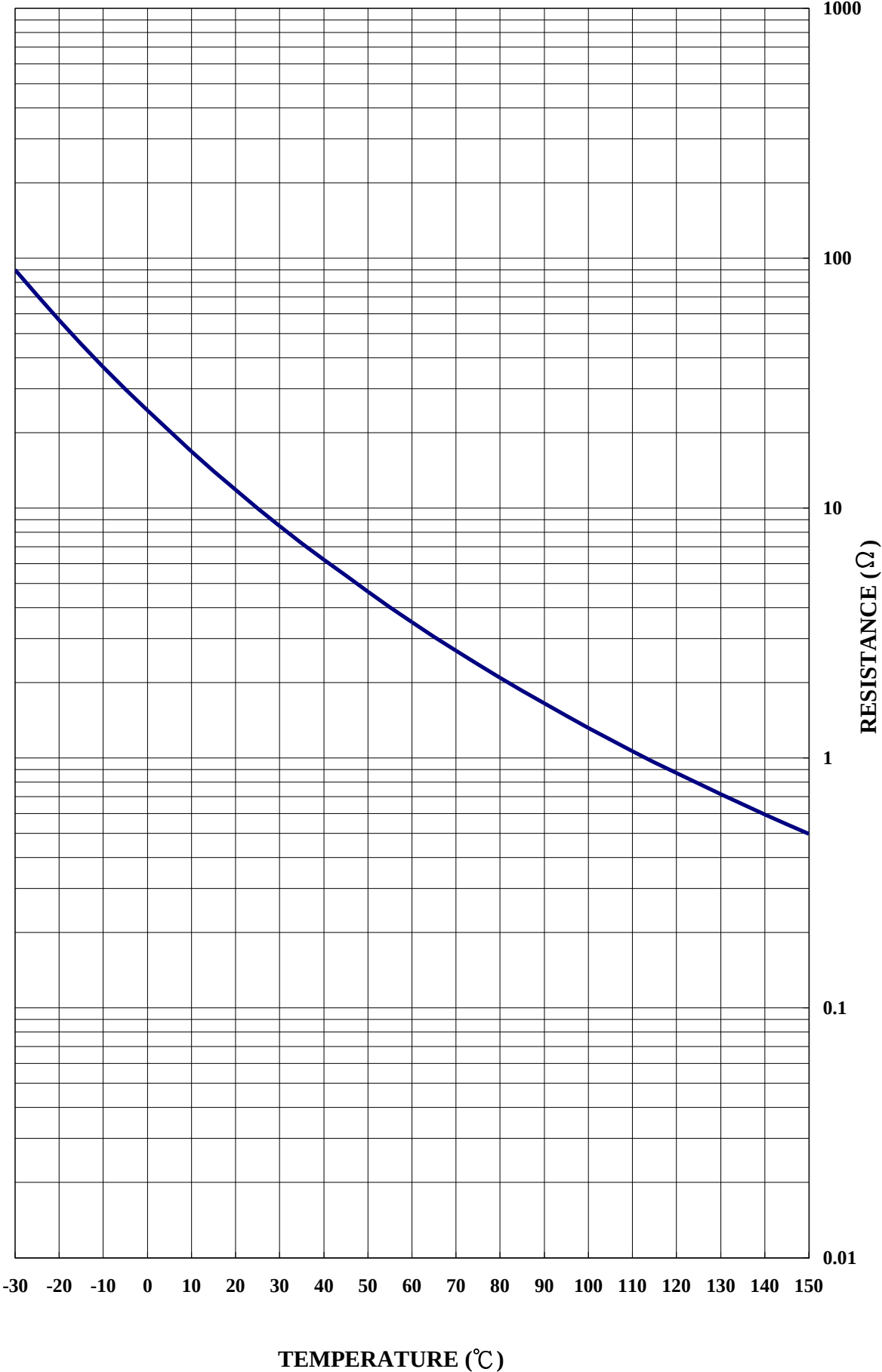
0R7	:	0.7Ω
1R3	:	1.3Ω
2R5	:	2.5Ω
003~008	:	3~8Ω
010~080	:	10~80Ω
120	:	120Ω

(5) Tolerance of Resistance

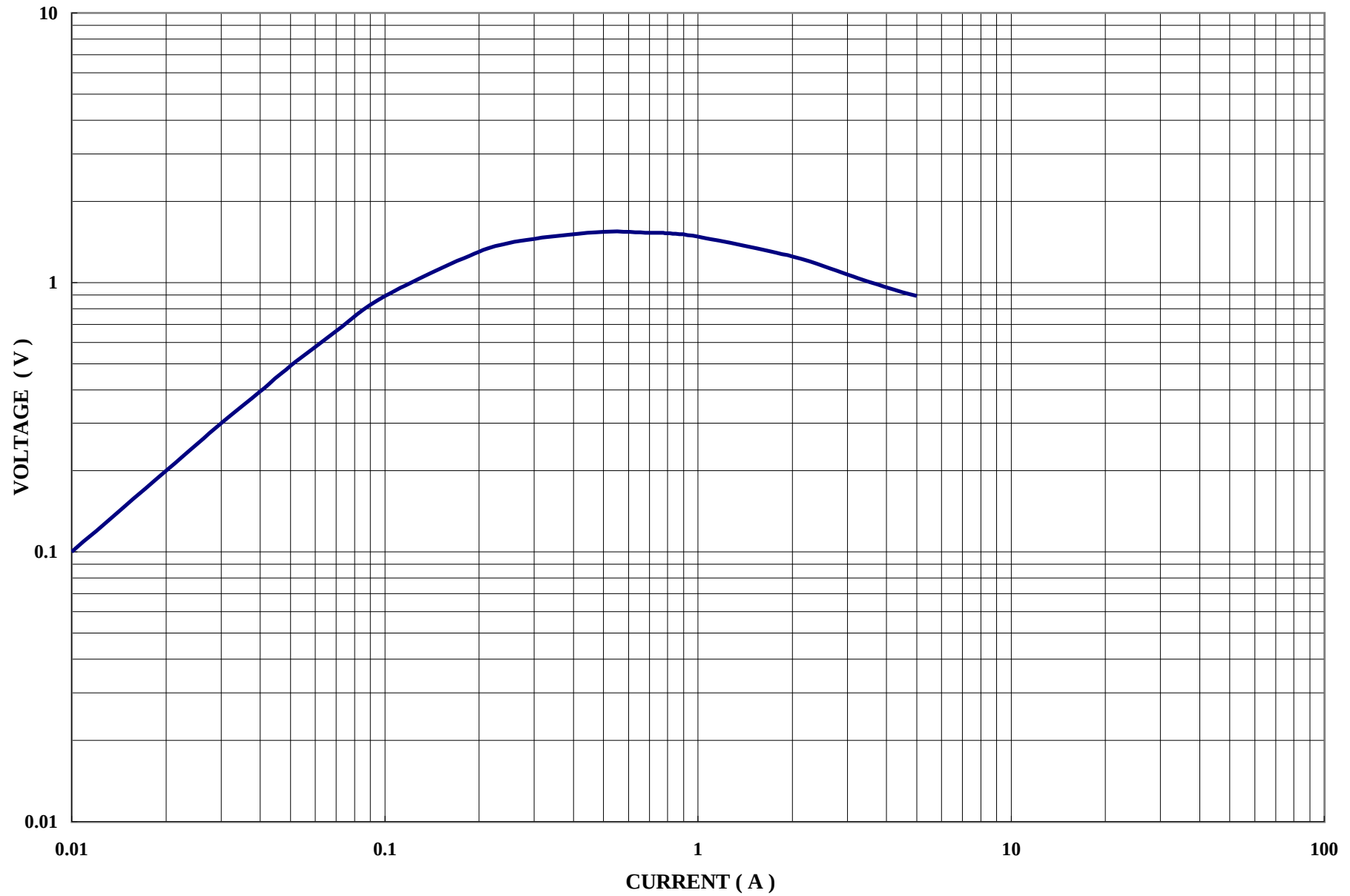
L	:	±15%
M	:	±20%

(6) RoHS Type

R-T Curve (Nominal) Part No : N15SP010



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



RELIABILITY TEST REPORT

PART NO : N15SP010 -5

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 : $0^\circ \rightarrow 90^\circ \rightarrow 0^\circ$, 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)

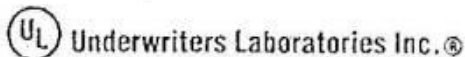
SOLDER BATH : 260 ± 5 °C

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			

THE TEST RESULTS ARE SATISFACTORY.



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UPPERMOST ELECTRONIC INDUSTRIES CO LTD
MR S Y SHIH
TA FA INDUSTRIAL DISTRICT
28 HUA SHI RD
KAOHSIUNG HSIEN TAIWAN



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XGPU2 February 10, 1999
Component - Thermistor Type Devices

UPPERMOST ELECTRONIC INDUSTRIES CO LTD
TA FA INDUSTRIAL DISTRICT 28 HUA SHI RD, KAOHSIUNG
HSIEN TAIWAN

E133510

NTC surge protectors, Models 08SP005, 08SP006, 08SP008, 08SP010, 08SP015, N10SP2R5, N10SP003, N10SP004, N10SP005, N10SP006, N10SP007, N10SP008, N10SP010, N10SP012, N10SP016, N10SP020, N10SP025, N10SP050, N10SP080, N10SP120, N13SP005, N13SP008, N13SP010, N13SP016, N15SP1R3, N15SP1R5, N15SP2R5, N15SP003, N15SP004, N15SP005, N15SP006, N15SP007, N15SP008, N15SP010, N15SP012, N15SP015, N15SP016, N15SP020, N15SP025, N15SP040, N15SP047, N15SP080, N15SP120, N20SP0R7, N20SP1R3, N20SP005, N20SP006, N20SP010, N20SP012, N20SP120, where prefix N is optional; Models TDC03A210, TDC03C222, TDC03C268, TDC03C310, TDC03C312, TDC03C315, TDC03C330, TDC03C333, TDC03C347, TDC03C350, TDC03C368, TDC03D410, TDC03D422, TDC05A015, TDC05A045, TDC05A090, TDC05A110, TDC05A120, TDC05A125, TDC05A130, TDC05A135, TDC05C150, TDC05C210, TDC05C215, TDC05C220, TDC05C222, TDC05C225, TDC05C230, TDC05C233, TDC05C235, TDC05C240, TDC05C247, TDC05C250, TDC05C310, TDC05C312, TDC05C315, TDC05C320, TDC05D330, TDC05D347, TDC05D350, TDC05D410, TDC05D415, TDC05D422, TDC05D433, TDC05D440, TDC05D447.

Marking: Company name or trademark  and model designation.

See General Information Preceding These Recognitions.

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Report: January 25, 1993.

Replaces E133510 dated August 5, 1996.

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