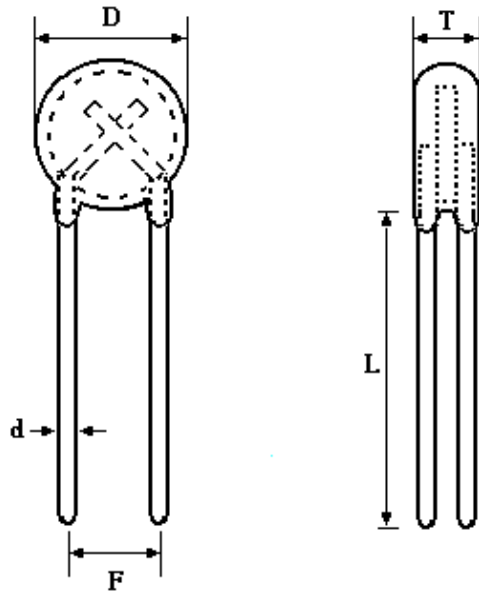


1. Dimensions



D : Diameter with coating

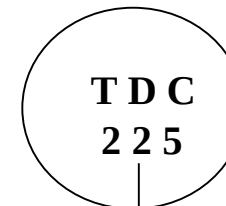
F : Forming Pitch

T : Thickness of thermistor with coating

L : Length of leads

d : Diameter of leads

2. Marking



Resistance of 25°C

Example: $222 : 10^2 * 22 = 2.2K\Omega$

$045 : 10^0 * 45 = 45\Omega$

5Φ	D	F	T	L	d
max.	6.5	4.5	4.0	-	0.52
$\bar{X}$	-	3.5	-	-	0.50
min.	-	2.5	-	25.0	0.48

UNIT : mm

NTC THERMISTORS

PART NO : TDC05C225L-5



UPPERMOST ELECTRONIC INDUSTRIES CO., LTD.

SPECIFICATION :

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

1-1 Color of Coating : Blue

1-2 Material of Coating : Epoxy Resin

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

2. Maximum Ratings (Ambient Ta = 25℃)

	Item	Symbol	Conditions	Max. Rated Value	Unit
a	Rated Temperature	Ta	in still air	-20 ~ + 125	℃
b	Max. Permissible Current	I25	Ta : 25 ℃	60	mA
c	Max. Permissible Working Current	Iw25	Ta : 25 ℃	6	mA

3. Electrical Characteristics

	Item	Symbol	Conditions	Standard Ratings			Unit
				Min.	Normal	Max.	
a	Resistance (25℃)	R25	Ta : 25 ±0.2 ℃ , I ≤ 0.5mA	2.125	2.5	2.875	KΩ
b	Beta Constant	β	8876*log(R25/R50)	3720	4000	4280	° K
c	Thermal Dissipation Constant	G	Ta : 25 ℃	-	6	-	mW/℃
d	Thermal Time Constant	-	Ta : 25 ℃	-	14	-	sec
e	UL Test Temperature (Min. 0℃)						
f	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. Terminal Strength

	Test	Conditions	Post Test Limits	Results
a	Bending	Load : 0.25 kg, bend : 2 times.	no physical damage and electrical characteristic normal	OK
b	Pull	Load : 0.50 kg, time : 5 sec.		OK

Testing Method :

1. Thermistor shall be placed vertically with a load applied to leads and shall consist one bend 90° from the point of egress and back to the original position.
2. Thermistor shall be placed vertically with a load applied to leads for a period of time as specified.

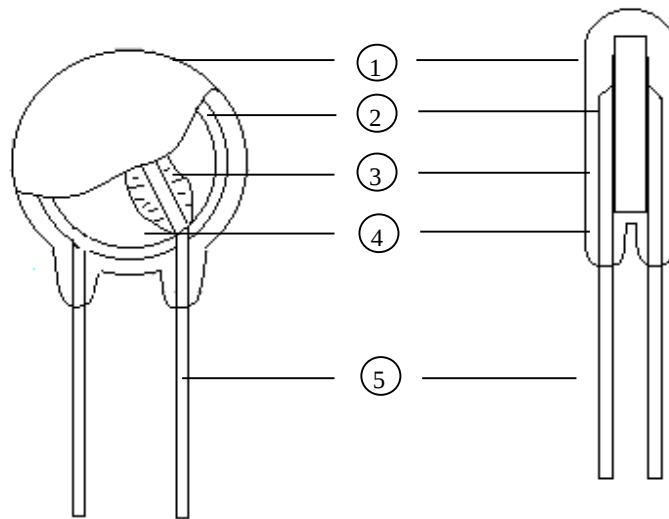
5. Reliability Test

	Item	Conditions	Results
			Variable Rate of Resistance
a	High Temperature Storage	125°C ± 5 °C * 1000 Hours	Max.+15%
b	Low Temperature Storage	-20°C ± 2 °C * 1000 Hours	Max.+15%
c	Thermal Shock	-20°C *30' → +25°C *30' → +125°C *30' → + 25°C *30' *8 Cycles	Max.+15%
d	Humidity	45°C, 95% R.H.*1000 Hours	Max.+15%
e	Continuous Load Life	60 mA±10% * 1000 Hours of max. rate Current	Max.+15%

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

Different sample shall be used for each of the above tests.

6. Construction Diagram



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

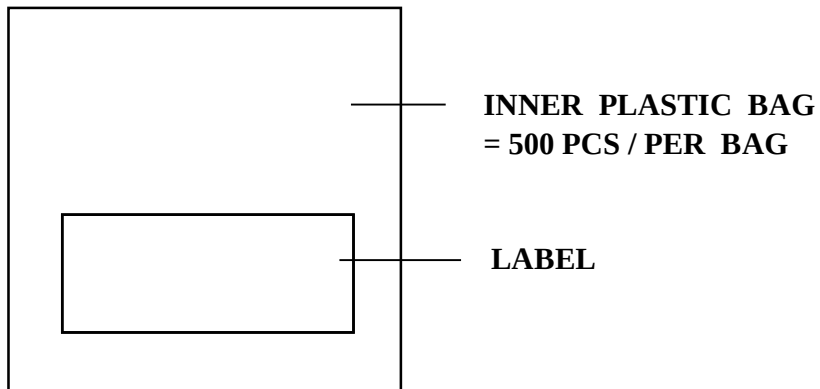
Powder Epoxy	Flame Class	94V-0
	UL File No.	E50219(S)

7. PACKING METHOD

1.MATERIAL OF PACKING

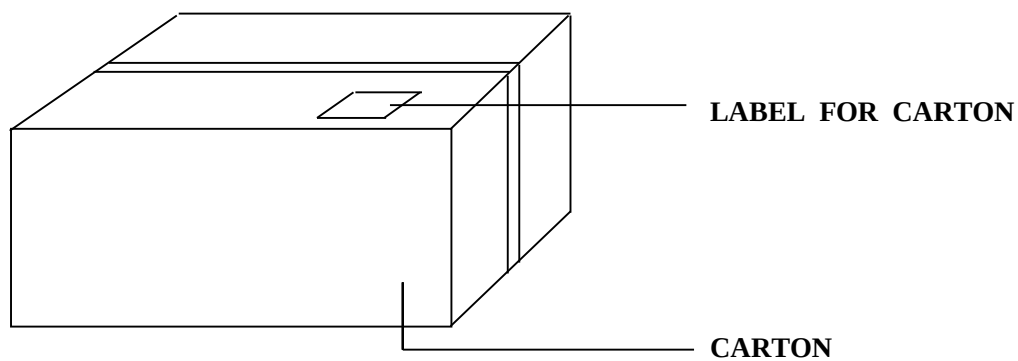
ITEM	MATERIAL	SIZE (L*W*H) mm
INNER PLASTIC BAG	POLYESTER	200 * 130 * 0.08
CARTON	CARTON PAPER	310 * 255 *240

2.PACKING DETAIL



3.PACKING METHOD

500 PCS / BAG * 40 BAG / CARTON = 20000 PCS / CARTON



Part Number Code.

Example :

T D C 05 C 225 L - 5
(1) (2) (3) (4) (5) (6) (7) (8)

(1) T : (UEI NTC Thermistor)

(2) D : (Disc Type)

(3) C : (Epoxy Coated)

(4) Nominal Diameter :

03 : 3mm

05 : 5mm

(5) Beta Value

	S	≤ 1600
1600 <	A	≤ 3300
3300 <	B	≤ 3600
3600 <	C	≤ 4200
4200 <	D	

(6) Resistance of 25°C

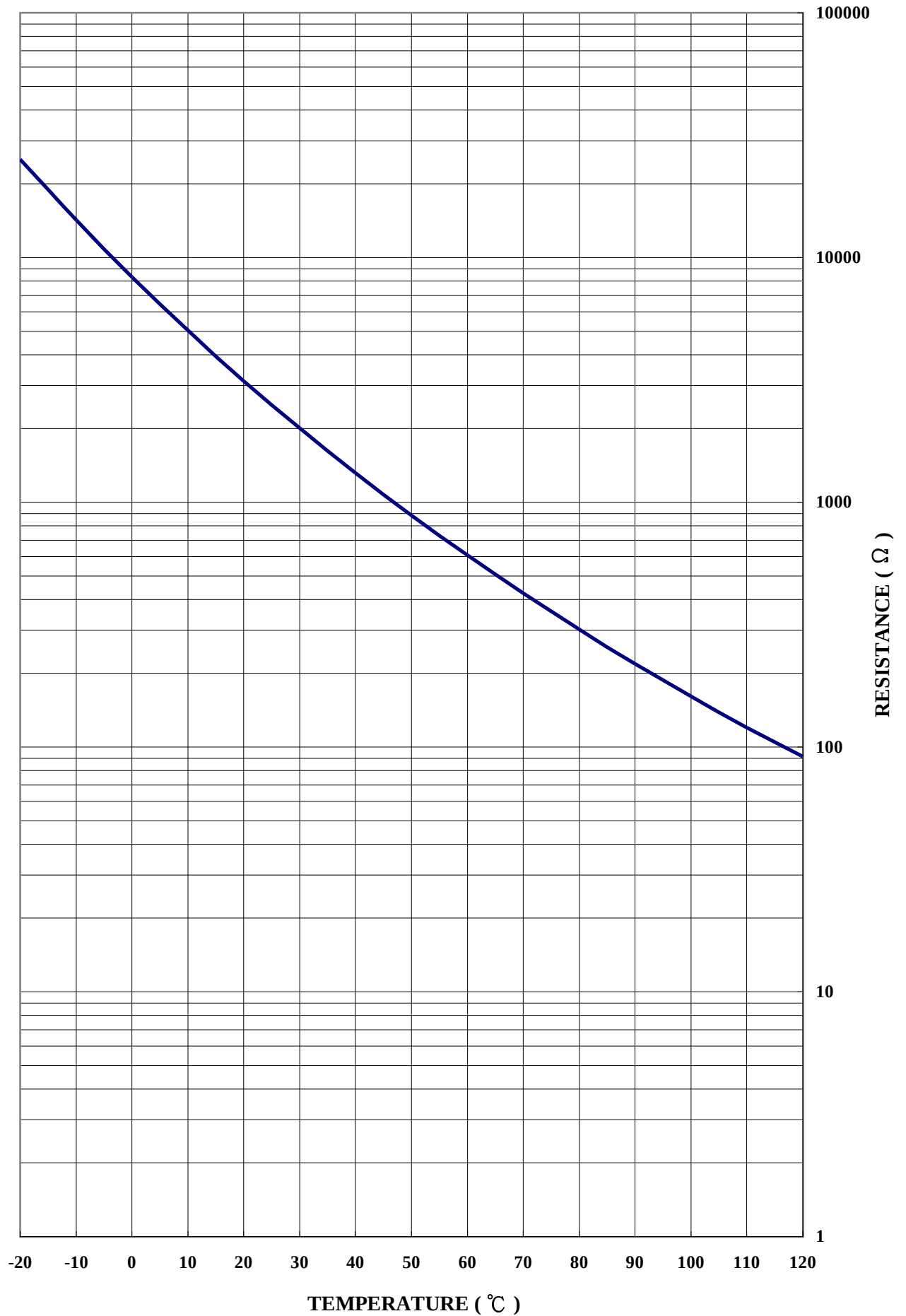
010~090	:	10~90 Ω
110~190	:	100~900 Ω
210~260	:	1K~6K Ω
310~350	:	10K~50K Ω
410~447	:	100K~470K Ω

(7) Tolerance of Resistance

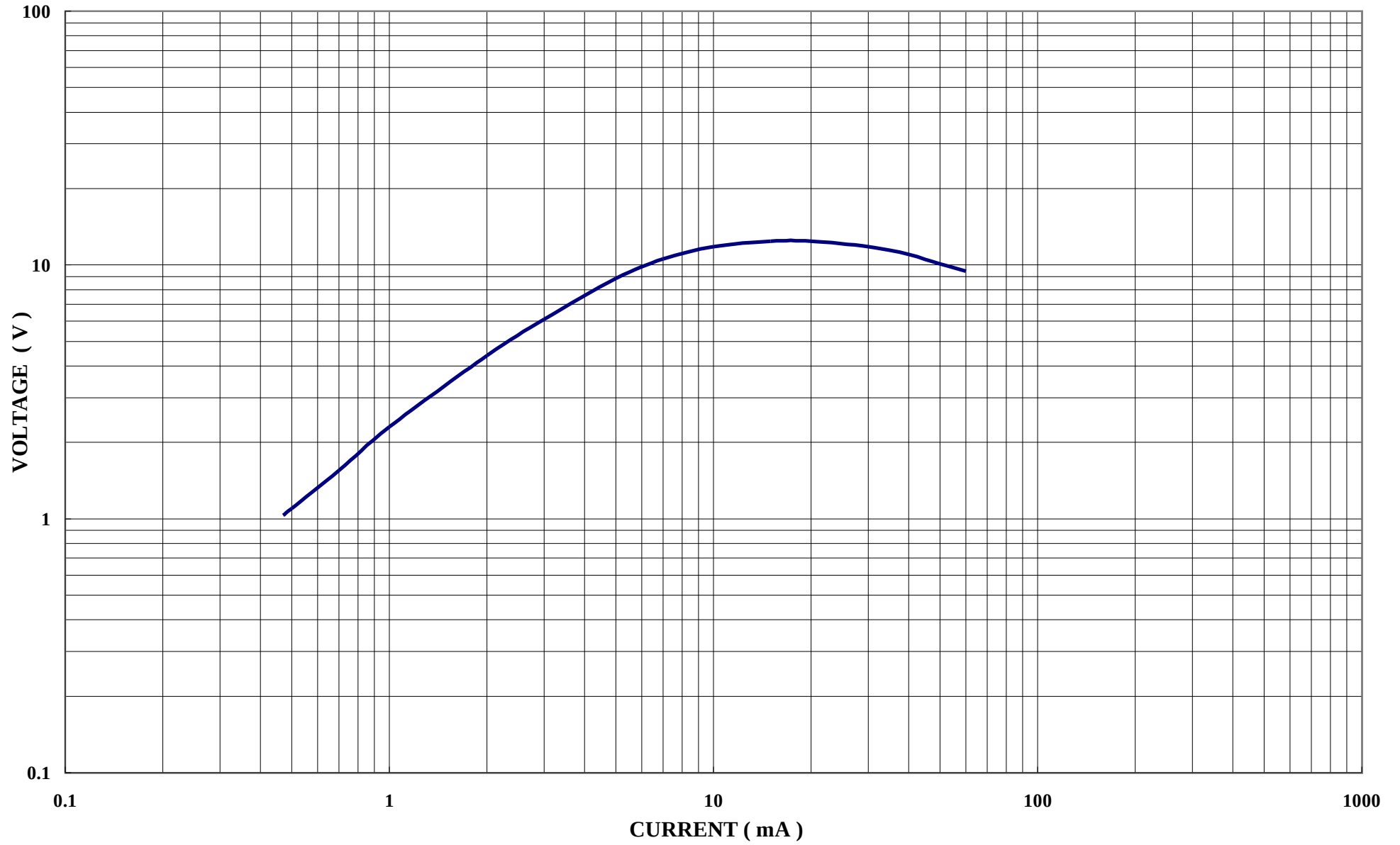
J	:	$\pm 5\%$
K	:	$\pm 10\%$
L	:	$\pm 15\%$

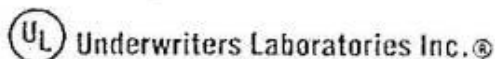
(8) ROHS Type

R-T Curve (Nominal) Part No : TDC05C225



V-I Curve (Nominal) Part No. : TDC05C225





Northbrook, Illinois • (847) 272-8800
Melville, New York • (516) 271-6200
Santa Clara, California • (408) 985-2400
Research Triangle Park,
North Carolina • (919) 549-1400
Camas, Washington • (360) 817-5500

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



Your most recent listing is shown below. Please review this information and report any inaccuracies to the UL Engineering staff member who handled your UL project.

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.

For use only in equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Report: January 25, 1993.

Replaces E133510 dated August 5, 1996.

594324001

Underwriters Laboratories Inc.®

011/0228490
62

For information on placing an order for UL Listing Cards in a 3 x 5 inch card format, please refer to the enclosed ordering information.

UNDERWRITERS LABORATORIES INC.

A not-for-profit organization
dedicated to public safety and
committed to quality service.