APPROVAL SHEET

(承 認 士 様 書)

CUSTOMER	
I T E M	NTC THERMISTOR
M O D E L	**DSC-10D-9 MSFB**
APPLICATION	
REMARK	ⓑ Type

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SPECIFICATION FOR NTC THERMISTOR

IN-RUSH CURRENT LIMITER : 9 PIE

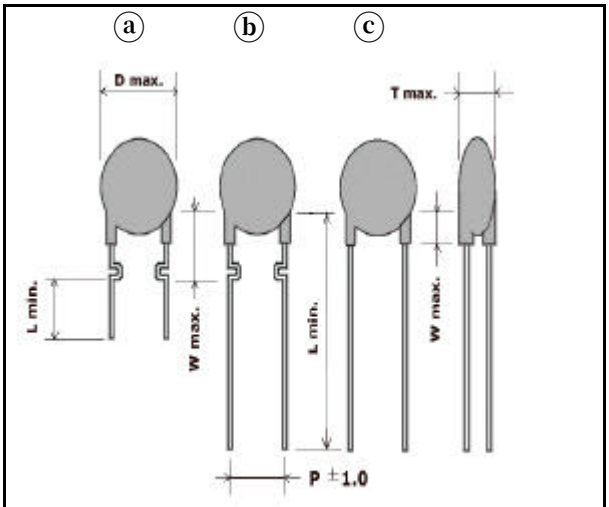
1. APPLICATIONS

1) INRUSH CURRENT LIMITING IN PERIPHERAL COMMUNICATION EQUIPMENT, MONITORS, PCs, SMPS.
2) SOFT-START MOTORS, e.g. IN VACUUM CLEANERS
3) CIRCUIT APPLICATIONS REQUIRING HIGH CONTINUOUS CURRENTS
4) USEABLE IN SERIES CONNECTION UP TO 250 Vrms

2. FEATURES

1) HIGH RELIABILITY AND MINIMIZED AGE DRIFT, LOW-COST AND WIDE APPLICATIONS
2) BLACK SILICONE OR EPOXY COATED THERMISTOR DISK
3) STRAIGHT OR IN/OUT KINKED OR CUTTED LEADS OF TINNED, NICKEL PLATED COPPER WIRE
4) USEABLE IN SERIES CONNECTIONS UP TO MAX. 260Vrms (STEADY STATE 240Vrms)
5) AVAILABLE ON TAPE
6) RESISTANCE TOLERANCE ＜±20% AVAILABLE UPON REQUEST
7) U.L. APPROVAL

3 DIMENSION



d : Lead wire diameter

(UNIT : mm)

	ⓐ	ⓑ	ⓒ
D (MAX.)	10.5	10.5	10.5
T (MAX.)	6	6	6
P	5.0	5.0	5.0
W (MAX.)	7	7	7
L (MIN.)	6±1.0	25	25
d	φ0.6	φ0.6	φ0.6
WIRE FORM	F/C	F	S

4. ELECTRICAL CHARACTERISTICS

1) ZERO POWER RESISTANCE AT 25℃ (Ohms) :
2) MAX STEADY STATE CURRENT (Amps) :
3) THERMAL DISSIPATION CONSTANT (㎽/℃) : REFERENCE No. 5
4) THERMAL TIME CONSTANT (sec) :
5) OPERATING TEMPERATURE (℃) :
6) B VALUE (25/85℃) :

SPECIFICATION FOR NTC THERMISTOR

5. SPECIFICATIONS OF SIMILAR SIZE

TYPE No.	NORMAL RESISTANCE AT 25℃ (ohms/Ù)	MAX. STEADY STATE CURRENT (amps/A)	THERMAL DISSIPATION CONSTANT (mW/℃)	THERMAL TIME CONSTANT (sec)	NORMAL B CONSTANT (25/85℃,K)
DSC - 3D -9	3.0	4	11	42	2900±5%
DSC - 5D - 9	5.0	3.8	11	42	2900
DSC - 8D -9	8.0	3.5	12	43	3000
DSC - 10D - 9	10.0	3	12	50	3000
DSC - 12D - 9	12.0	3	12	40	3000
DSC - 16D - 9	16.0	2.5	11	44	3100
DSC - 18D - 9	18.0	2	10	46	3100
DSC - 22D - 9	22.0	2	10	46	3200
DSC - 50D - 9	50.0	1.5	10	47	3200
DSC -400D - 9	400.0	1.2	9	25	3800

※Resistance tolerance : ±10%(K), 15%(L), 20%(M)

6. MATERIAL LIST

ITEM	MATERIAL	DESCRIPTION	POSITION	REMARK
RAW MATERIAL	Mn3O4	POWDER 99.9%		
	Co3O4	POWDER 99.9%		
	NiO	POWDER 99.9%		
	CuO	POWDER 99.9%		
ADDITION	P.V.A	PVA-205C		
	LUBRICANT	LU-6418		
SUB MATERIAL	Al2O3 POWDER	A-21		VARIABLE
	Ag PASTE	CON COAT.		
	LEAD WIRE	0.8 pie		
	G-PAPER	0.38t×18mm×500M		
	MASKING TAPE	6×400M		
	SOLDER BAR	Sn×Ag		
	SILICONE COAT.	OHMCOAT AF490		
	EPOXY COAT.	CP-903BK		
	MARKING INK	U.V. INK		
PACKAGE	POLY BAG.	175×260		BULK : 500EA
	INNER BOX	140×180×40t		TAPING :1,000EA
	PACKING BOX	445×305×215H		

7.TERMINOLOGY AND GENERAL SPECIFICATIONS

TECHNICAL TERMS	DESCRIPTIONS	SPEC.
OPERATING TEMP.	OPERATING TEMPERATURE RANGE WITHOUT DERATING	-40 TO 180℃
STORAGE TEMP	STORAGE TEMPERATURE RANGE WITHOUT CURRENT APPLIED.	-30 TO 80℃
ZERO POWER RESISTANCE	THE ZERO POWER RESISTANCE IS THE RESISTANCE OF A THERMISTOR AT 25℃ AMBIENT TEMPERATURE.	SEE RATING TABLE
B VALUE	B VALUE CAN BE DERIVED BY MEASURING THE RESISTANCE AT 25℃ (R1) AND85℃ (R2) AND CALCULATING BY FOLLOWING FORMULA. $B=\frac{Ln(R2/R1)}{1/(273.15+T2)-1/(273.15+T1)}$	SEE RATING TABLE
MAX. STEADY STATE CURRENT	THE MAX STEADY STATE CURRENT IS THE MAXIMUM ALLOWABLE CURRENT AT LOADING TO MAX OPERATING TEMPERATURE IN 25℃ AMBIENT.	SEE RATING TABLE
THERMAL DISSIPATION CONSTANT	THE DISSIPATION CONSTANT MEANS THE AMOUNT OF POWER REQUIRED TO RAISE THE APPLIED TEMPERA-TURE TO THE THERMISTOR IN STATIONARY STATE FOR 1℃.	SEE RATING TABLE
THERMAL TIME CONSTANT	THE TIME CONSTANT IS DEFINED AS RELATIONSHIP BETWEEN THE THERMAL CAPACITY AND DISSIPATION CONSTANT. IT IS MEASURED AS TIME IN SECONDS WITCH IS NEEDED FOR THERMISTOR TEMPERATURE CHANGE DF 63.2% DIFFERENCE BETWEEN INITIAL AND FINAL THERMISTOR TEMPERATURE.	SEE RATING TABLE

TECHNICAL TERMS	DESCRIPTIONS	SPEC.
LOAD LIFE	THERMISTOR SHALL BE STORED FOR 1,000± 12HOURS AT 25℃ ± 2℃ WITH THE MAXIMUM RATED APPLICABLE STEADY STATE CURRENT APPLIED. AFTER THE STORAGE PERIOD. TO AND STABILIZED AT ROOM TEMP.	MAXIMUM RESISTANCE CHANGE : ± 15% OF INITIAL
TEMPERATURE CYCLE	THERMISTOR SHALL BE SUBJECTED TO THE FOLLOWING 10 CYCLES : AT -40±3℃ FOR 30 MINUTES AND AT +150±2℃ FOR 30 MINUTES. AFTER THE CYCLES. THE THERMISTOR SHALL BE RETURNED TO AND STABILIZED AT ROOM AMBIENT TEMP.	MAXIMUM RESISTANCE CHANGE : ± 15% OF INITIAL, AND THERE SHALL BE NO EVIDENCE OF HARMFUL CORROSION, MECHANICAL
MOISTURE RESISTANCE	THERMISTOR SHALL BE STORED FOR 1,000 ±12 HOURS AT 40±2℃, 90-95% RH WITH NO CURRENT APPLIED. AFTER THE STORAGE PERIOD THE THERMISTOR SHALL BE RETURNED TO AND STABILIZED AT ROOM TEMP.	MAXIMUM RESISTANCE CHANGE : ± 15% OF INITIAL.
LEAD FULL STRENGTH	AFTER GRADUALLY APPLYING THE 1Kg LOAD AND KEEPING THE UNIT FIXED FOR 10 SECONDS IN THE AXIAL DIRECTION. THE LEAD SHALL BE VISUALLY EXAMINED FOR ANY DAMAGE	NO OUTSTANDING DAMAGE.
SOLDERING HEAT RESISTANCE	THE LEAD WIRE OF THE THERMISTOR SHALL BE DIPPED WITH 4±1mm SPACE OF 300± 5℃ FOR 3 SEC, RETURNED TO AND STABILIZED AT ROOM TEMP.	MAXIMUM RESISTANCE CHANGE : ± 15% OF INITIAL.

TECHNICAL TERMS	DESCRIPTIONS	SPEC.
SOLDERABILITY	WHEN THE LEAD WIRE OF THERMISTOR WAS DIPPED INTO SOLDER (Pb4 :Sn6) BATH of 330± 5℃ FOR 3 SECONDS AFTER IMMERSION IN 25%RESIN FLUX. THE SOLDERABILITY RATIO OF LEAD WIRE SURFACE SHOULD BE MORE THAN 95%	MORE THAN 95% SOLDERABILITY
SURGE CURRENT LIFE	THERMISTOR SHALL BE SUBJECTED THE FOLLOWING 2,000 CYCLES. - SURGE CURRENT : MAX STEADY STATE CURRENT. -NTERVAL : 15 SECONDS AFTER THE CYCLES, THE THERMISTOR SHALL BE RETURNED TO.	MAXIMUM RESISTANCE CHANGE : ± 15%
INSULATION RESISTANCE	THE THERMISTOR SHOULD BE NO CHANGED. AFTER APPLIED THE VOLTAGE OF 1,500 Vac FOR ONE MINUTE BETWEEN THE LEAD WIRE AND THE INSULATION COATED PORTION.	WITHIN ± 15% RESISTANCE CHANGE AND NO DAMAGE.
INSULATION RESISTANCE	THE INSULATION RESISTANCE SHOULD BE OVER 500M OHMS WITH 1,000Vdc BETWEEN THE LEAD WIRE AND THE INSULATION COATED PORTION.	WITHIN ± 15% RESISTANCE CHANGE AND NO DAMAGE.

MODEL NUMBERING

DSC - □□ D - □□ □□□□

- PACKAGE
- WIRE FORM
- COATING MAT'LS
- TOLERANCE
- DIAMETER OF ELEMENT
- TYPE OF DISC
- ZERO POWER RESISTANCE
- SYMBOL OF DSC's NTC

* TOLERANCE
K : ± 10%
L : ± 15%
M : ± 20%

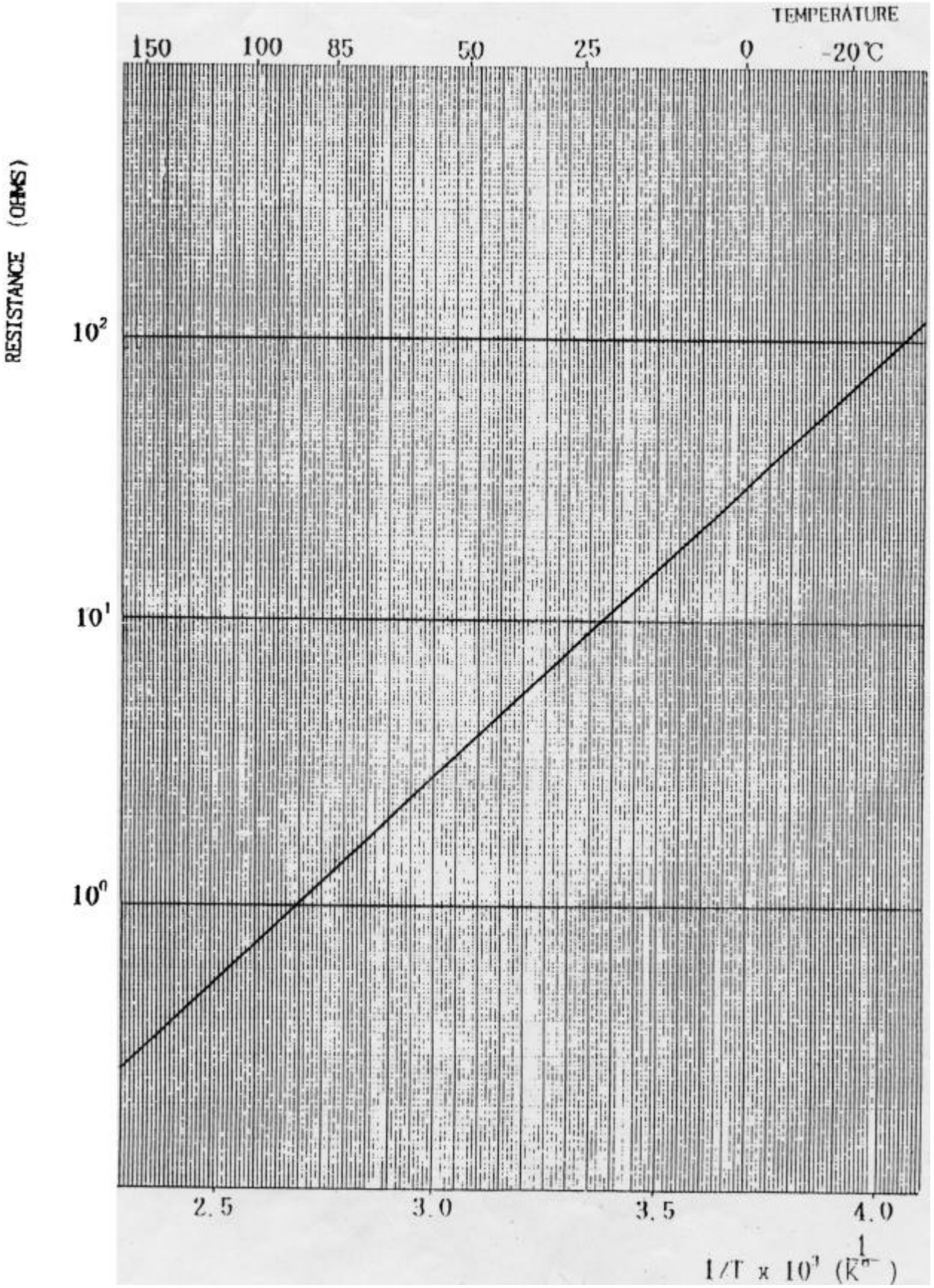
* PACKAGE
T : TAPING
B : BULK
C : CUTTING

* COATING MAT'L/WIRE FORM
E/S : EPOXY/STRAIGHT
S/S : SILICONE/STRAIGHT
S/F : SILICONE/FORMING

TYPICAL R-T CURVE FOR DSC SERIES (NTC)

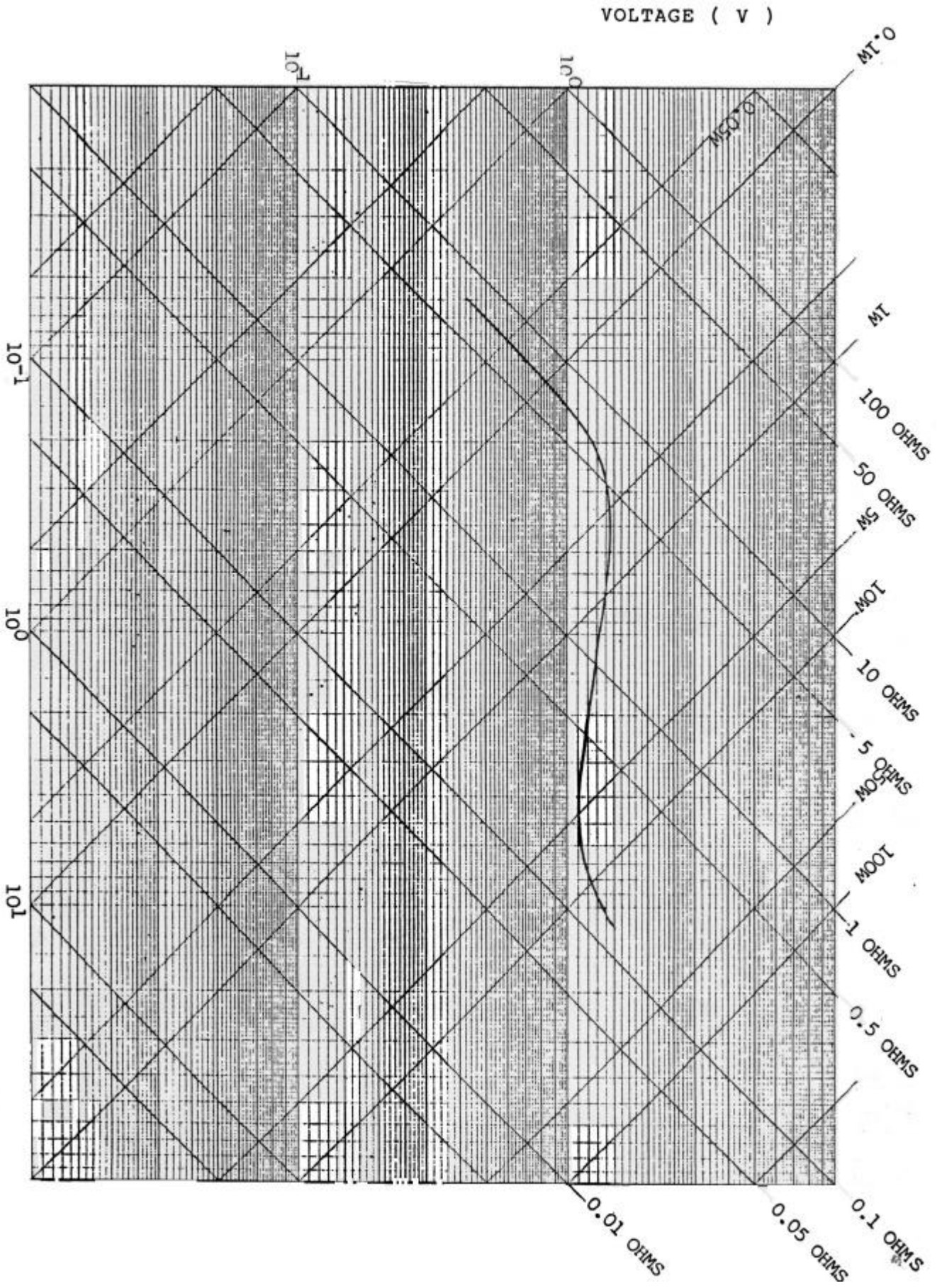
MODEL NO. : DSC - 10D - 9

B VALUE 2950°K



TYPICAL V-I CURVE FOR DSC SERIES

MODEL NO. DSC - 10D - 9



D S C	PACKING SPECIFICATION FOR THERMISTOR

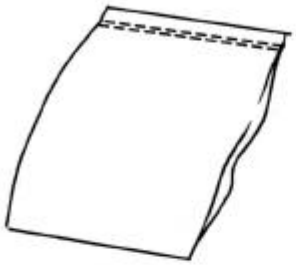
PACKING SHAPE

(Unit : mm)

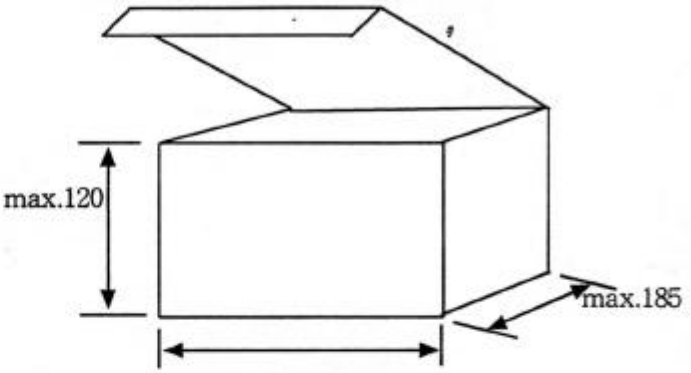
1. INNER PACKING BOX

7/9Φ : 1,000pcs/vinyl pack × 5pack = 5,000pcs/ inner box

11/13/15Φ : 500pcs/vinyl pack × 5pack = 2,500pcs/ inner box

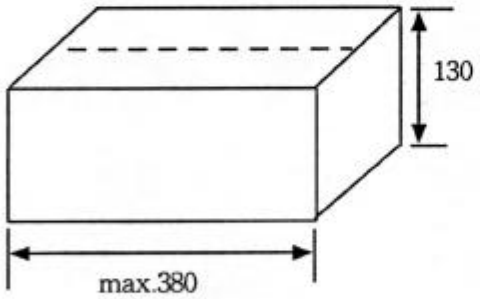


180*250

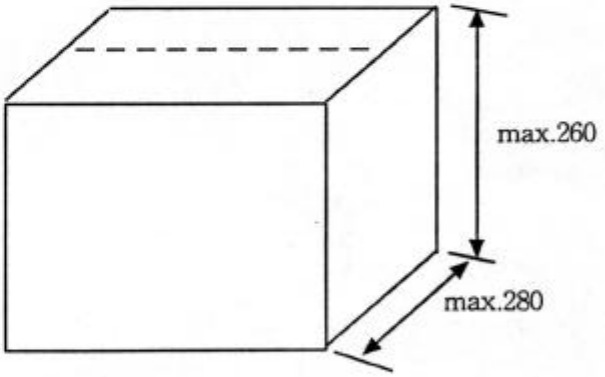


2. OUT PACKING BOX (INNER BOX 2 & 4EA)

- 2,500pcs * 2ea = 5,000pcs / 5,000pcs * 2ea = 10,000pcs
  4ea = 10,000pcs / 4ea = 20,000pcs



in case of 5,000/10,000pcs out box



in case of 10,000/20,000pcs out box