



Approval Sheet

Manufacturer:

Customer:

FLYING
INTERNATIONAL

Approved By:	Checked By:	Prepared By :

Approved By:	Examined By:	Tested By :

Company Stamp	
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Company Stamp	
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Approval No. : _____

Product : NTC THERMISTOR

Part No : EWTF03-103F3I-N

Specifications : R25 10,000 Ω $\pm$ 1 %

B25/85 3435 K $\pm$ 1 %

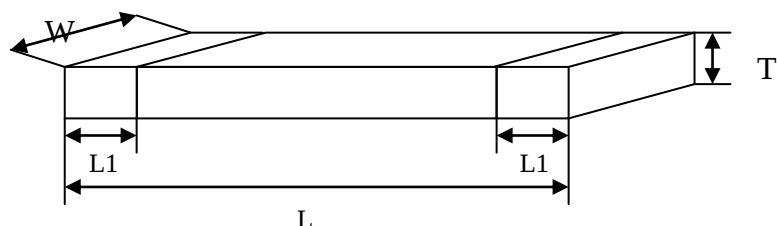
汎翊國際有限公司 新北市 241564 三重區光復路一段80號五樓(台北科技城)

TEL : (02) 2995-7676 FAX : (02) 2995-7616 www.flying1688.com

Specification of SMD Chips Thermistor

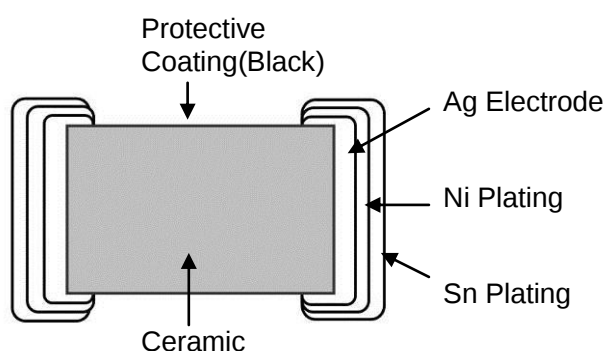
◆ **PART NO. :** EWTF03-103F3I-N

◆ **CHIP DIMENSIONS :**



ITEM	L (mm)	W (mm)	T (mm)	L1 (mm)
0603 (1608)	1.60 ± 0.15	0.80 ± 0.15	0.70 ± 0.25	0.20 ~ 0.50

◆ **CHIP STRUCTURE**

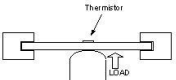
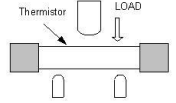
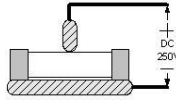


◆ **ELECTRICAL CHARACTERISTICS**

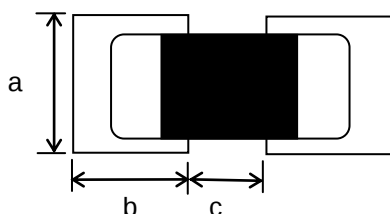
Style	Symbol	Condition	Specification
Resistance at T_a	R_{25}	$T_a = 25\text{ }^{\circ}\text{C}$	$10\text{ K } \Omega \pm 1\%$
B Constant	B	$25\text{ }^{\circ}\text{C} / 85\text{ }^{\circ}\text{C}$	$3435\text{ K } \pm 1\%$
Thermal Time Constant	T	$T_a = 25\text{ }^{\circ}\text{C}$	$\leq 5\text{ seconds}$
Thermal Dissipation Constant	C	$T_a = 25\text{ }^{\circ}\text{C}$	Approx. $3.5\text{ mW}/^{\circ}\text{C}$
Maximum Power Rating*	$P_{\max}$	$T_a = 25\text{ }^{\circ}\text{C} \rightarrow 125\text{ }^{\circ}\text{C}$	350 mW
Operating Temp. Range	--	--	$-40\text{ }^{\circ}\text{C} \sim 125\text{ }^{\circ}\text{C}$

*Maximum Power Rating = Thermal Dissipation Constant $\times$ (Max. Operating Temp. ($125\text{ }^{\circ}\text{C}$) – $25\text{ }^{\circ}\text{C}$)

◆ RELIABILITY TEST

Performance	Standard	Test Method	$\Delta R_{25} / R_{25}$
Life	MIL-STD-202F Method 108A	70 °C , Load Power, 1000 hours.	Max.± 3 %
Humidity	MIL-STD-202F Method 103B	Temperature : 40 °C , Humidity: 95 % RH Load Power, 1000 hours.	Max.± 3 %
Thermal Shock	MIL-STD-202F Method 107	- 40 °C to 125 °C (30 min) , 10 times.	Max.± 3 %
High Temperature storage	IEC 68-2-2	125 °C , 1000 hours.	Max. ± 3 %
Solderability	MIL-STD-202F Method 208	Soldering 260 °C for 2 seconds.	Min. 95 % coverage
Resistance to Soldering Heat	MIL-R-55342D Para 4.7.7	Soldering 260 °C for 10 seconds.	Max.± 3 %
Bending Strength	JIS C 5202 6.1.4	Pressurizing rod at distance 1 mm for 5 seconds. 	No visible damage
Resistance to flexure of Substrate	JIS C 5202 6.2.1	Pressurizing force shall be over 3 Kg . 	Min.3 Kg
Insulation Resistance	MIL-STD-202F Method 302	DC 250 V For 10 seconds. 	Min.1000 MΩ
Dielectric Withstand Voltage	MIL-STD-202F Method 301		Not Short

◆ RECOMMENDED LAND DIMENSIONS



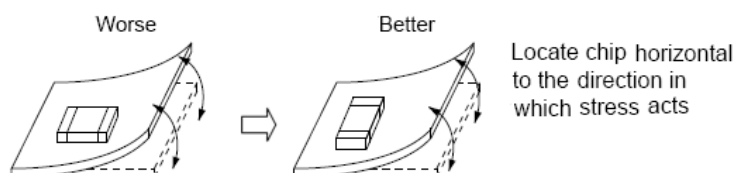
Unit : mm

Type	a	b	c
0402 (1005)	0.6 ~ 0.7	0.8 ~ 0.9	0.4 ~ 0.5
0603 (1608)	0.9 ~ 1.0	1.0 ~ 1.1	0.6 ~ 0.7
0805 (2012)	1.4 ~ 1.5	1.2 ~ 1.3	0.7 ~ 0.8
1206 (3216)	1.7 ~ 1.8	1.5 ~ 1.6	1.3 ~ 1.4

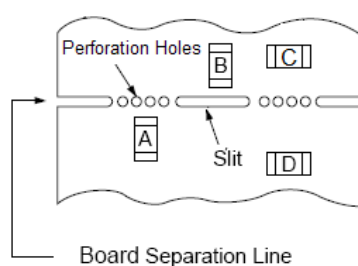
◆ MOUNTING POSITION

Choose a mounting position that minimizes the stress imposed on the chip during flexing or bending of the board.

Component Direction

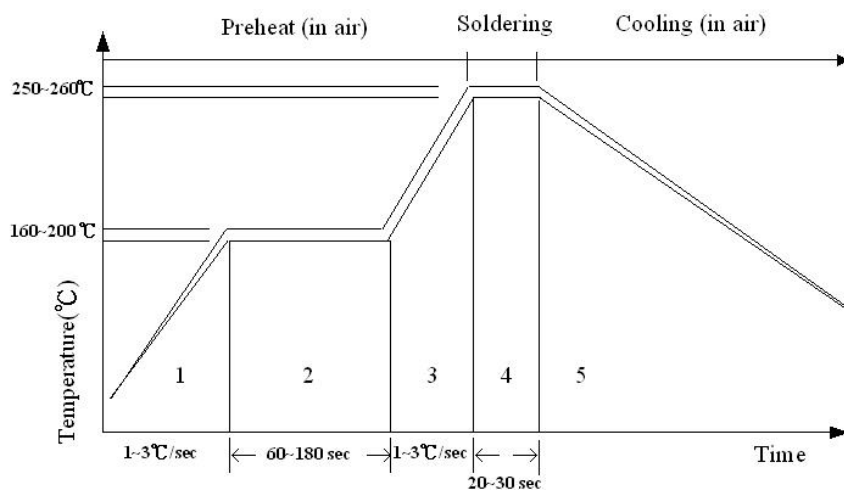


Chip Mounting Close to Board Separation Line



Put this product on the PC Board near the Slit, not near the Perforation Holes.
Keep this product on the PC Board away from the Separation Line.
Worst A-B-C-D Better

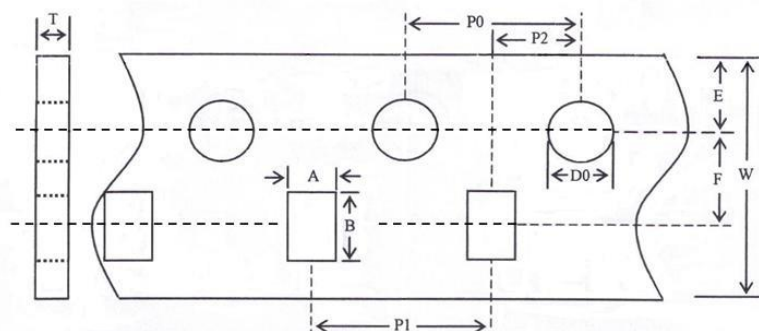
◆ REFLOW SOLDERING PROFILE



◆ HAND SOLDERING IRON

Item	Condition
Temperature of Soldering Iron-tip	360 °C Max.
Diameter of Soldering Iron-tip	ø 3 mm Max.
Soldering Iron Wattage	30 W Max.
Soldering Time	5 seconds Max.

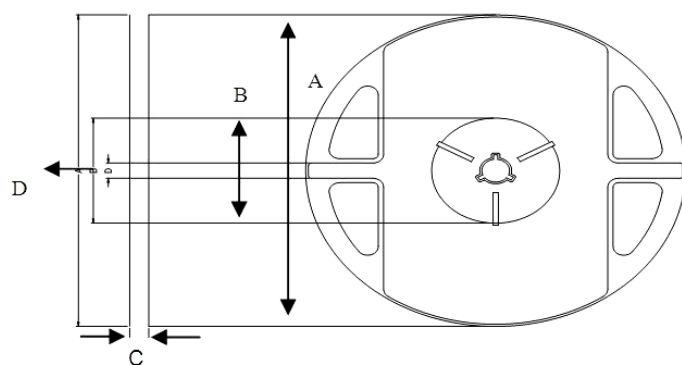
◆ TAPING DIMENSIONS



Unit : mm

Dimension	0402	0603	0805	1206
A	0.65 ± 0.10	1.10 ± 0.10	1.50 ± 0.10	2.00 ± 0.10
B	1.15 ± 0.10	1.90 ± 0.10	2.30 ± 0.10	3.57 ± 0.10
W	8.00 ± 0.20	8.00 ± 0.20	8.00 ± 0.20	8.00 ± 0.20
D0	1.50 ± 0.25	1.50 ± 0.25	1.50 ± 0.25	1.55 ± 0.25
E	1.75 ± 0.10	1.75 ± 0.10	1.75 ± 0.10	1.75 ± 0.10
F	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05
P0	4.00 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	4.00 ± 0.10
P1	2.00 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	4.00 ± 0.10
P2	2.00 ± 0.10	2.00 ± 0.10	2.00 ± 0.10	2.00 ± 0.10
T	1.10 Max.	1.10 Max.	1.10 Max.	1.10 Max.

◆ REEL DIMENSIONS



Unit : mm

Item	A	B	C	D
Dimension	178.0 ± 1.0	60.0 ± 1.0	9.0 ± 0.1	13.0 ± 0.1

Item	0402	0603	0805	1206
Qty. / Reel	10000 pcs	4000 pcs	4000 pcs	3000 pcs

◆ STORAGE CONDITIONS

1. Storage Temperature : - 10 °C ~ + 40 °C .
2. Relative humidity : 30 ~ 75 % RH.
3. Thermistor must be kept away from sunshine and stored in a non-corrosive atmosphere.
4. Period of Storage : 1 year.

◆ ORDERING INFORMATION

EWTF 03 - 103 F 3 I - N
 ① ② ③ ④ ⑤ ⑥

1. E WAY SMD Thermistor. (TF - Lead Free ; TH - Lead (Pb))
2. Dimension : 02 (0402) , 03 (0603) , 05 (0805) , 06 (1206) .
3. Resistance at 25 °C : 103 = $10 \times 10^3 = 10,000 (\Omega)$.
4. Tolerance of R : F:±1% ; G:±2% ; H:±3% ; J:±5% ; K:±10%.
5. B value : 3 I = 3435 (3000 + 435)

1: 1000	C: 101~150	I: 401~450	O: 701~750
2: 2000	D: 151~200	J: 451~500	P: 751~800
3: 3000	E: 201~250	K: 501~550	Q: 801~850
4: 4000	F: 251~300	L: 551~600	R: 851~900
A: 0~50	G: 301~350	M: 601~650	S: 901~950
B: 51~100	H: 351~400	N: 651~700	T: 951~999

6. Coating Color : N : New Color (Black).