	Muti-Layer Thermistor (Negative Temperature Coefficient)	Document No	TMTR-XXOS002A
		Issued date	2012/10/02
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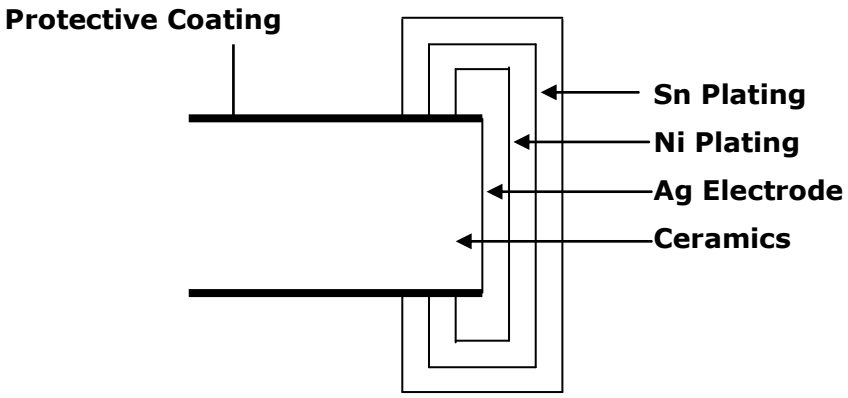
1. Scope :

This specification applies for the Lead-Free MTR series of Muti-Layer thermistor made by TA-I.

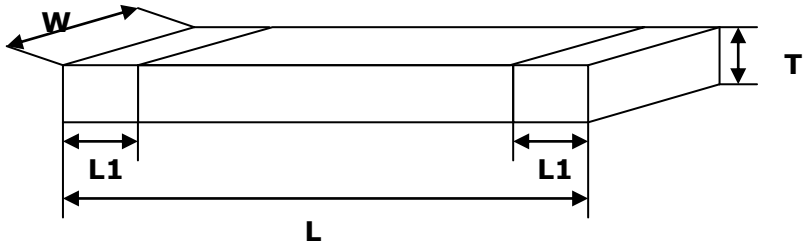
2. Construction:



3. Type Designation:

MTR	06	F	T	F	344	B	103
Product Code	Size 04:0402(1005) 06:0603(1608) 10:0805(2012)	Tolerance Of Resistance at 25℃ F:±1.0% G:±2.0% H:±3.0% J:±5.0%	Packaging T: Paper	Tolerance of B Value at 25(℃) F:±1.0% H:±3.0%	B Value (K) 344:3435 395:3950 405:4050 410:4100	Temp Range Of B Value (℃) B:25-85	Resistance at 25℃ 102:1KΩ 103:10KΩ

4. Dimensions:



Unit: mm

Item	L(mm)	W(mm)	T(mm)	L1(mm)
0402 (1005)	**1.00 ±0.10**	**0.50 ±0.10**	**0.60 max**	**0.15~0.30**
0603 (1608)	**1.60 ±0.15**	**0.80 ±0.15**	**0.95 max**	**0.20~0.50**
0805 (2012)	**2.00 ±0.20**	**1.25 ±0.20**	**1.20 max**	**0.20~0.60**

5. Electrical Characteristics

Part Designation	Zero Power Resistance at 25℃ (KΩ)	Tolerance of Resistance (±%)	B value (25-85) (K)	Tolerance of B value (±%)	Max Power Rated at 25 ℃ (mW)	Typical Dissipation Constant (mW/℃)	Operation Temperature range (℃)
MTR04□T□410B102	1	3、5	4100	3	250 mW	Approx. 2.5 mW/℃	-40~125
MTR04□T□344B103	10	1、3、5	3435	1、3			
MTR04□T□390B103	10	3、5	3900	3			
MTR04□T□410B103	10	3、5	4100	1、3			
MTR04□T□405B473	47	2、3、5	4050	3			
MTR04□T□415B683	68	2、3、5	4150	3			
MTR04□T□405B104	100	2、3、5	4050	3			
MTR04□T□430B104	100	2、3、5	4300	3			
MTR04□T□405B474	470	2、3、5	4050	1、3			

Part Designation	Zero Power Resistance at 25℃ (KΩ)	Tolerance of Resistance (±%)	B value (25-85) (K)	Tolerance of B value (±%)	Max Power Rated at 25℃ (mW)	Typical Dissipation Constant (mW/℃)	Operation Temperature range (℃)
MTR06□T□295B102	1	1、2、3、5	2950	1、3	350 mW	Approx. 3.5 mW/℃	-40~125
MTR06□T□415B202	2	3、5	4150	3			
MTR06□T□330B332	3.3	3、5	3300	1、3			
MTR06□T□334B472	4.7	1、2、3、5	3340	1、3			
MTR06□T□334B502	5	1、2、3、5	3340	1、3			
MTR06□T□344B682	6.8	2、3、5	3435	1、3			
MTR06□T□344B103	10	1、2、3、5	3435	1、3			
MTR06□T□355B103	10	1、2、3、5	3550	1、3			
MTR06□T□397B103	10	1、2、3、5	3970	1、3			
MTR06□T□410B103	10	2、3、5	4100	2、3、5			
MTR06□T□390B223	22	3、5	3900	1、3			
MTR06□T□395B473	47	2、3、5	3950	1、3			
MTR06□T□405B473	47	2、3、5	4050	3			
MTR06□T□405B503	50	2、3、5	4050	1、3			
MTR06□T□415B683	68	2、3、5	4150	1、3			
MTR06□T□395B104	100	3、5	3950	1、3			
MTR06□T□405B104	100	2、3、5	4050	3			
MTR06□T□440B104	100	2、3、5	4400	3			
MTR06□T□405B204	200	3、5	4055	1、3			
MTR06□T□405B224	220	3、5	4055	1、3			
MTR06□T□405B474	470	2、3、5	4050	3			
MTR06□T□410B564	560	3、5	4100	1、3			

Part Designation	Zero Power Resistance at 25℃ (KΩ)	Tolerance of Resistance (±%)	B value (25-85) (K)	Tolerance of B value (±%)	Max Power Rated at 25℃ (mW)	Typical Dissipation Constant (mW/℃)	Operation Temperature range (℃)
MTR10□T□344B472	4.7	2、3、5	3435	1、3	400 mW	Approx. 4 mW/℃	-40~125
MTR10□T□344B502	5.0	2、3、5	3435	1、3			
MTR10□T□344B103	10	1、2、3、5	3435	1、3			
MTR10□T□355B103	10	2、3、5	3550	1、3			
MTR10□T□397B103	10	1、2、3、5	3970	1、3			
MTR10□T□390B223	22	3、5	3900	1、3			
MTR10□T□400B473	47	2、3、5	4000	1、3			
MTR10□T□400B503	50	2、3、5	4000	1、3			
MTR10□T□400B104	100	2、3、5	4000	1、3			
MTR10□T□410B204	200	2、3、5	4100	1、3			

6.Reliability Tests:

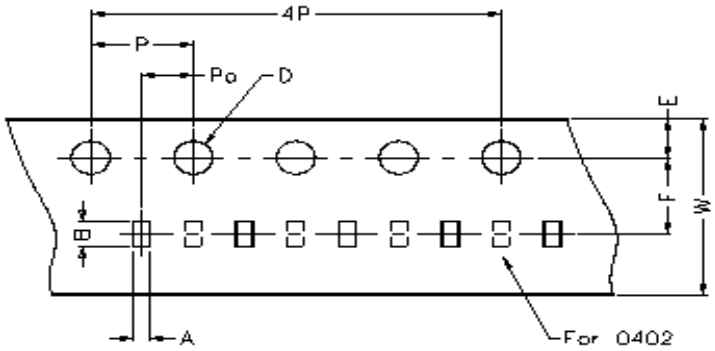
PERFORMANCE	TEST METHOD	APPRAISE
Life	MIL – STD – 202F , Method 108A 1000 hours at 70℃ NTC WV intermittent	Within ±3 %
Humidity	MIL – STD – 202F , Method 103B 1000 hours at Temperature: 40℃ Humidity: 95%	Within ±3 %
Thermal Shock	MIL – STD – 202F , Method 107 10 cycles, -40℃ to +125℃	Within ±3 %
Solderability	MIL – STD – 202F , Method 208H 235℃ for 2 seconds	95% min. coverage
Resistance to Soldering Heat	MIL – R – 55342D , Para 4.7.7 Soldered to test board at 260℃ for 10 seconds	Within ±3 %
Bending Strength	JIS C 5202 6.1.4 Pressurizing rod at a rate at 1mm/sec for 1mm	Within ±3 %
Resistance to flexure of Substrate	JIS C 5202 6.2.1 Pressurizing force shall be 3kg (min.)	Over 3 kg
Insulation Resistance	MIL – STD – 202F , Method 302 DC 250V For 10 seconds	Over 1000MΩ
Dielectric Withstand Voltage	MIL – STD – 202F , Method 301 DC 250V For 10 seconds	Not Short

7. Marking

No marking

8.Taping & Reel

8.1.1 Taping Dimensions

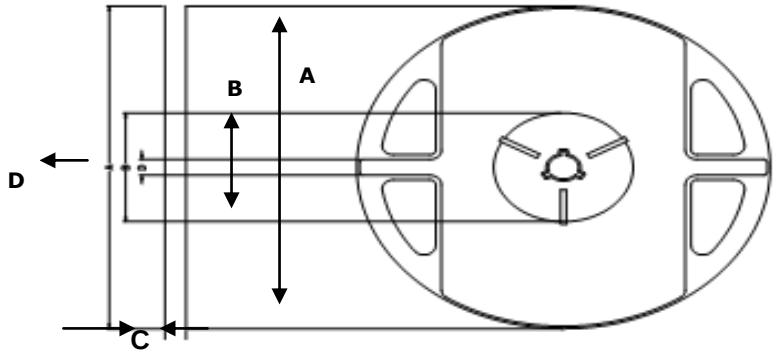


Dimension	1206	0805	0603	0402
A	2.00 ± 0.05	1.50 ± 0.05	1.08 ± 0.05	0.66 ± 0.03
B	3.57 ± 0.05	2.30 ± 0.05	1.85 ± 0.05	1.15 ± 0.03
W	8.00 ± 0.02	8.00 ± 0.05	8.00 ± 0.05	8.00 ± 0.05
D	1.55 ± 0.05	1.50 ± 0.10	1.50 ± 0.10	1.50 ± 0.10
E	1.75 ± 0.10	1.75 ± 0.05	1.75 ± 0.05	1.75 ± 0.05
F	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05	3.50 ± 0.05
P	4.00 ± 0.10	4.00 ± 0.05	4.00 ± 0.05	4.00 ± 0.05
Po	2.00 ± 0.05	2.00 ± 0.05	2.00 ± 0.05	2.00 ± 0.05
4P	16.00 ± 0.05	16.00 ± 0.05	16.00 ± 0.05	16.00 ± 0.05

Style	Package Size	Paper Tape	Plastic Tape
MTR	04	10000	
MTR	06		4000
MTR	10	4000	

Unit: PCS

8.2 Reel Specifications



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

9. Storage Conditions:

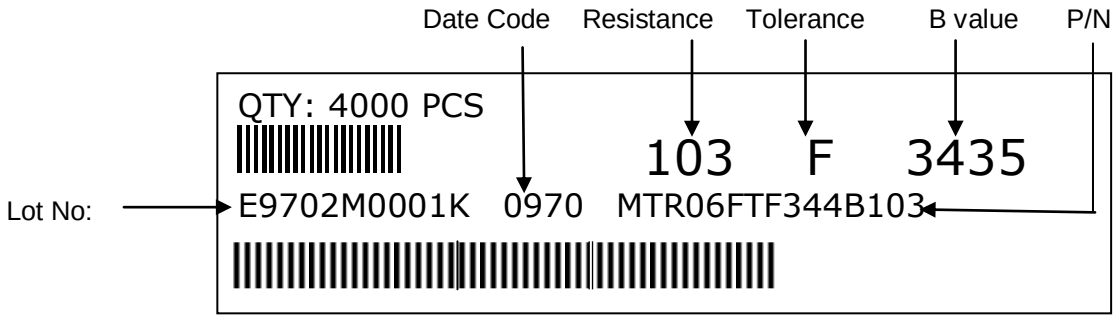
Temperature: -10℃~40℃, Humidity: ≦75%

10. Shelf Life:

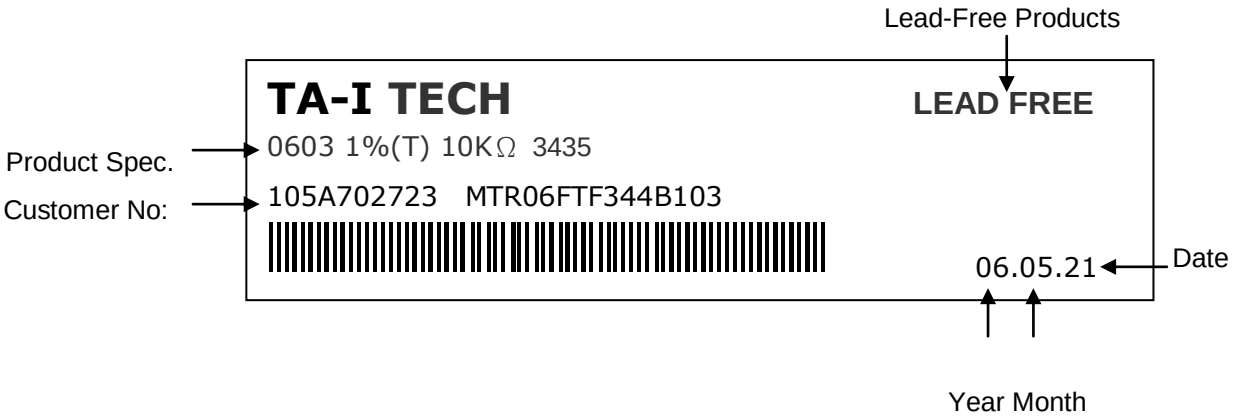
1 years from manufacturing date

11. Label

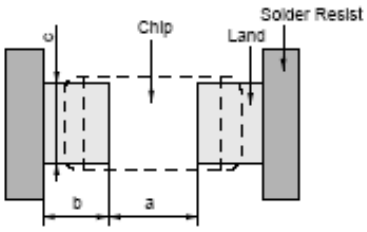
11.1 Manufacture Label :



11.2 Customer Label:

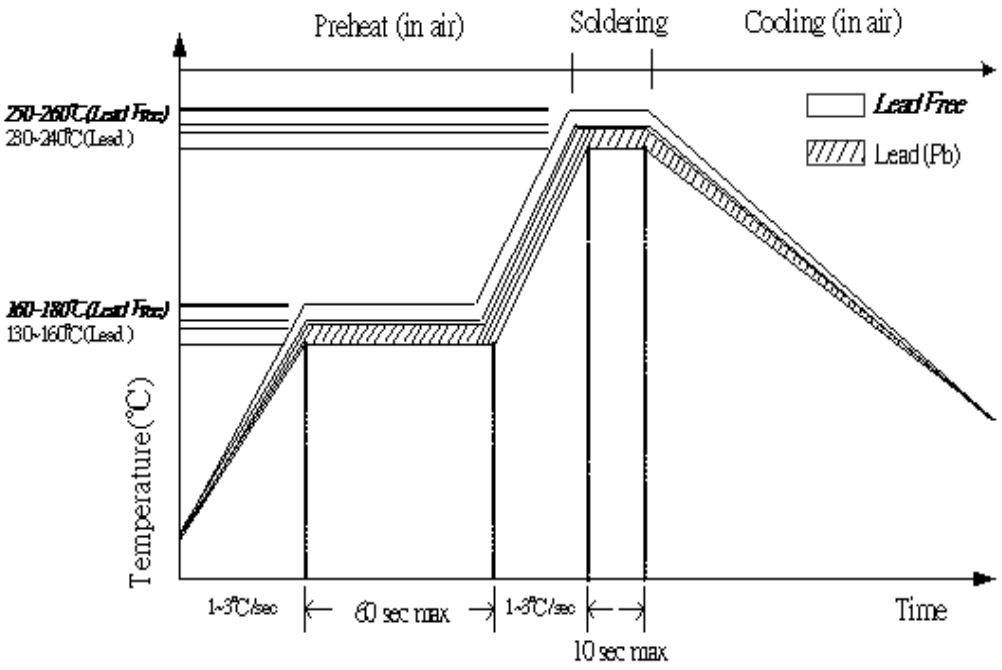


12. Recommended land patterns



Type \ Land pattern / Size		Dimension (mm)		
		a	b	c
MTR	04(0402)	0.4	0.4~0.5	0.5
MTR	06(0603)	0.6~0.8	0.6~0.7	0.6~0.8
MTR	10(0805)	1.0~1.1	0.6~0.7	1.0~1.2

13. Recommend IR – Reflow profile :



14. ECN

Engineering Change Notice: The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.

15. Manufacturing Country & City :

TA-I TECHNOLOGY CO., LTD. (Taiwan – Tao Yuan)

Tel: (+886) 3-3246169 Fax : (+886) 3-3246167

Associated companies :

(1)TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)

Tel :(+86) 512-63457879 Fax : (+86) 512-63457869

(2) TA-I TECHNOLOGY ELECTRONIC (DONGGUAN) CO., LTD. (China – Dongguan)

Tel : (+86) 769-8339-4790～3 Fax : (+86) 769-8339-4794

(3) FORTUNE TASK RESISTOR FACTORY (China – Dongguan)

Tel : (+86) 769-8339-4790～3 Fax : (+86) 769-8339-4794

(4) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Penang)

Tel :(+60) 4- 3900480 Fax : (+60) 4-3901481

(5) P.T.TAI ELECTRONIC Indonesia (Indonesia – Jakarta)

Tel :(+62) 21-44820254 Fax : (+62) 21-44820256

REV History

REV	Content	Owner	Date
002E	Add New Part : MTR06□T□410B103	Sean.Huang	NOV/02/2012