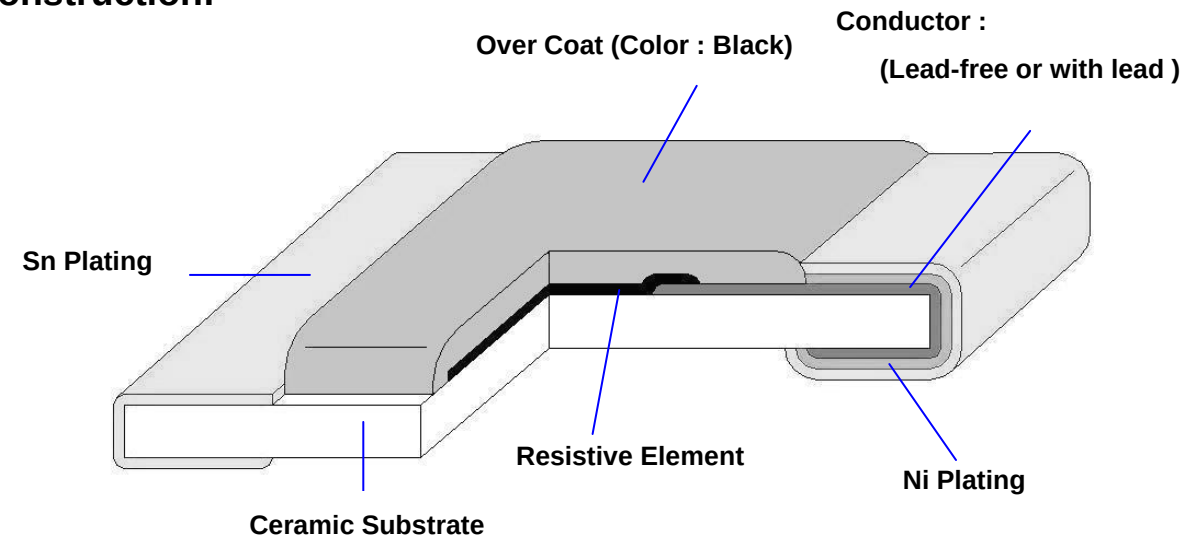
1. Scope :

This specification applies for the RM 0 ohm series of thick film chip resistors made by TA-I.

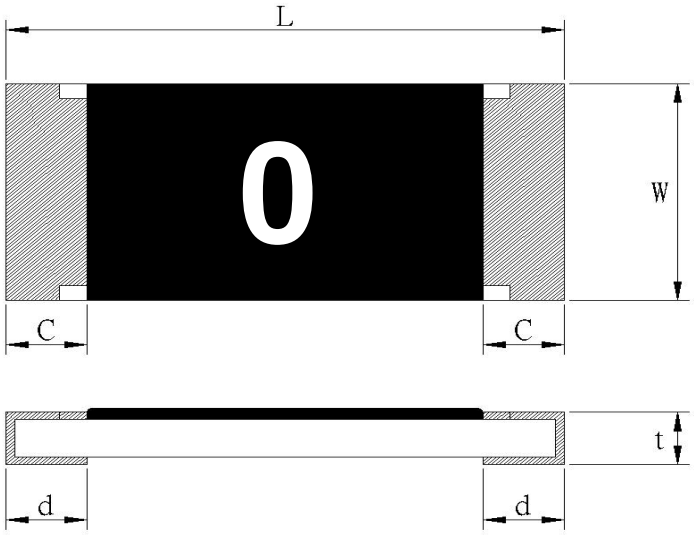
2. Construction:



3. Type Designation:

RM	10	J	TN	0
Product Code RM : Chip Resistor	Size Power Rating	Tolerance	Packaging	Nominal Resistance
02-0201(0603) 0.5A 04-0402(1005) 1A 06-0603(1608) 1A 10-0805(2012) 2A 12-1206(3216) 2A 13-1210(3226) 2A 20-2010(5025) 2A 25-2512(6432) 2A	R≦50mΩ		T-Paper Tape E-Embossed Tape B-Bulk Cassette +N: Lead-Free Special L : 06 – 2mm pitch paper Tape	3 digits, e.g.,: (E-24) 0 = 0Ω

4. Dimensions:



UNIT: mm

Type	L	W	C	d	t
RM02	0.60±0.03	0.30±0.03	0.1±0.05	0.15±0.05	0.25±0.05
RM04	$1.00^{+0.1}_{-0.05}$	0.50±0.05	0.20±0.10	0.25±0.10	0.35±0.05
RM06	1.60±0.10	0.80±0.10	0.30±0.20	$0.30^{+0.2}_{-0.1}$	0.45±0.10
RM10	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.10
RM12	3.10±0.10	1.55±0.10	0.50±0.30	0.40±0.20	0.60±0.10
RM13	3.10±0.10	2.55±0.10	0.50±0.30	0.40±0.20	0.60±0.10
RM20	5.00±0.15	2.50±0.15	0.60±0.30	0.50±0.25	0.60±0.10
RM25	6.30±0.20	3.20±0.20	0.60±0.30	0.50±0.25	0.60±0.10

5. Ratings & Characteristics :

OΩ THICK FILM CHIP RESISTORS			
Type	Rated Current	DC DC inrush current (5 sec/one time) Max Overload Current	Resistance Range
RM02	0.5A	1A	50mΩ MAX
RM04	1A	2.5A	50mΩ MAX
RM06	1A	2.5A	50mΩ MAX
RM10	2A	5A	50mΩ MAX
RM12	2A	5A	50mΩ MAX
RM13	2A	5A	50mΩ MAX
RM20	2A	5A	50mΩ MAX
RM25	2A	5A	50mΩ MAX
Operating Temp(℃): : -55℃ ～ +155℃ (RM02 -55℃ ～ +125℃)			

5.1 Derating Curve :

For resistors operated at ambient temperature over 70℃ , power rating shall be derated in accordance with figure 1.

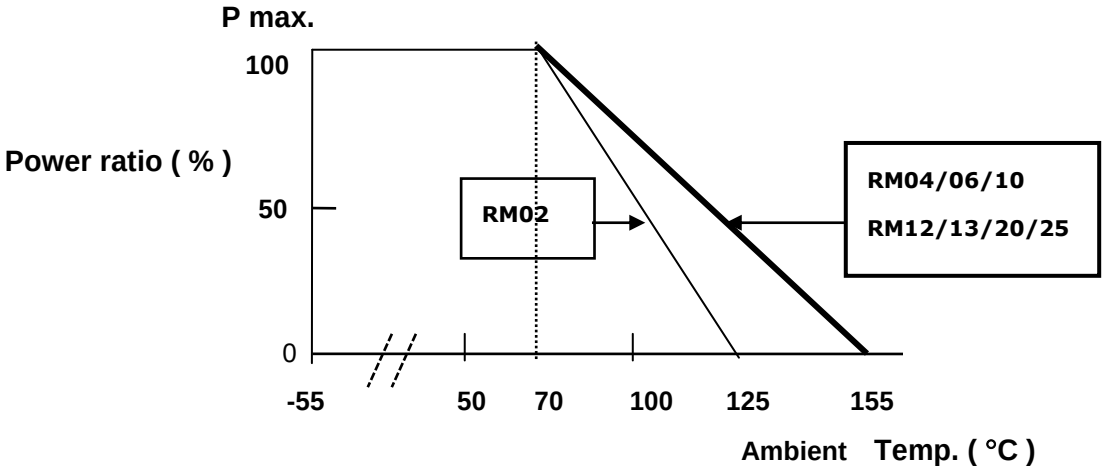


Figure 1

6. Reliability Tests:

Test Items	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-4.8	-55～ +125 ℃	Refer 5.0
Short Time Overload	IEC60115-1-4.13 JIS-C5201-4.13	2.5 X rated current for 5 sec (Remarks : 0201 2.0 * RCWC)	0Ω : 50mΩ or less
Intermittent Overload	EC60115-1-4.39 JIS-C5201-4.39	2.5 X rated current 1sec “ON” ,25sec “OFF” , 10000 cycles (Remarks : 0201 2.0 * RCWC)	0Ω : 50mΩ or less
Load Life	IEC60115-1-4.25.1 JIS-C5201-4.25.1	1000 hours at rated voltage, 70℃ , 1.5hours “ON “, 0.5hour “OFF”	0Ω : 100mΩ or less
Load Life with Humidity	IEC60115-1-4.24 JIS-C5201-4.24	1000 hours at rated voltage , 40±2℃, 90~95% RH 1.5hours “ON “, 0.5hour “OFF”	0Ω : 100mΩ or less Without mechanical damage
Rapid Change of Temperature	IEC60115-1-4.19 JIS-C5201-4.19	-55℃ (30 min.) / +155 ℃(30 min.) 5 cycles	0Ω : 50mΩ or less
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245±5℃ solder, 2±0.5 sec dwell. Solder : Sn96.5 / Ag3.0 / Cu0.5	At least 95% of surface area of electrode shall be covered with new solder.
Robustness of Termination (Bending)	IEC60115-1-4.33 JIS-C5201-4.33	3mm deflection	0Ω : 50mΩ or less
Dielectric Withstanding Voltage (Voltage Proof)	IEC60115-1-4.7 JIS-C5201-4.7	Applying voltage : 0201 : 50V , 0402 & 0603 : 300V The other 500V for a minute .	No abnormalities such as flashover, burning dielectric breakdown shall appear.
Insulation Resistance	IEC60115-1-4.6 JIS-C5201-4.6	Applying voltage 100V for 1 minute. Remark : 0201 50V	≧1GΩ
Resistance to Dry Heat	IEC60115-1-4.23.2 JIS-C5201-4.23.2	125±5℃ for 96±4Hrs	0Ω : 50mΩ or less
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-4.18	270 ±5℃ solder , 10 ±1 sec dwell .	0Ω : 50mΩ or less

Note* : RCWC : Rated continuous working current .

7. Marking

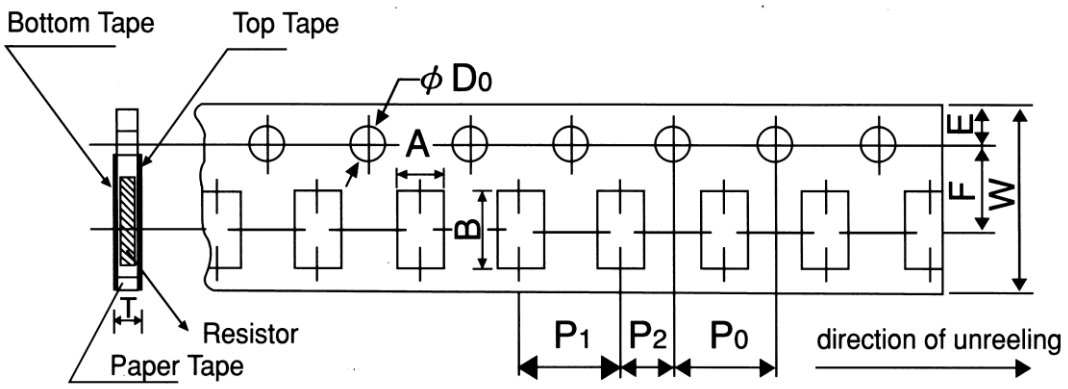
7.1 1 digit, e.g.,:(E-24) 0 = 0Ω.

7.2 No Marking for RM02 & RM04

8. Taping & Reel :

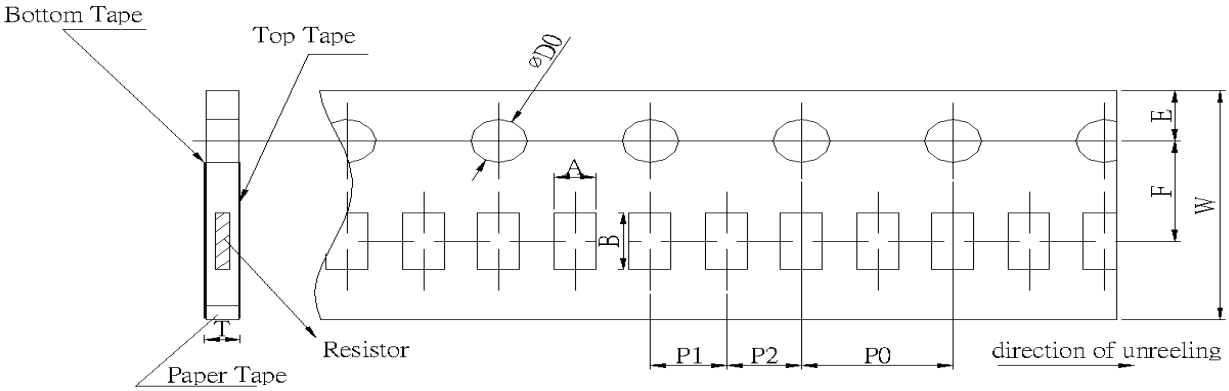
8.1 Taping Dimensions

8.1.1 4 mm pitch paper:



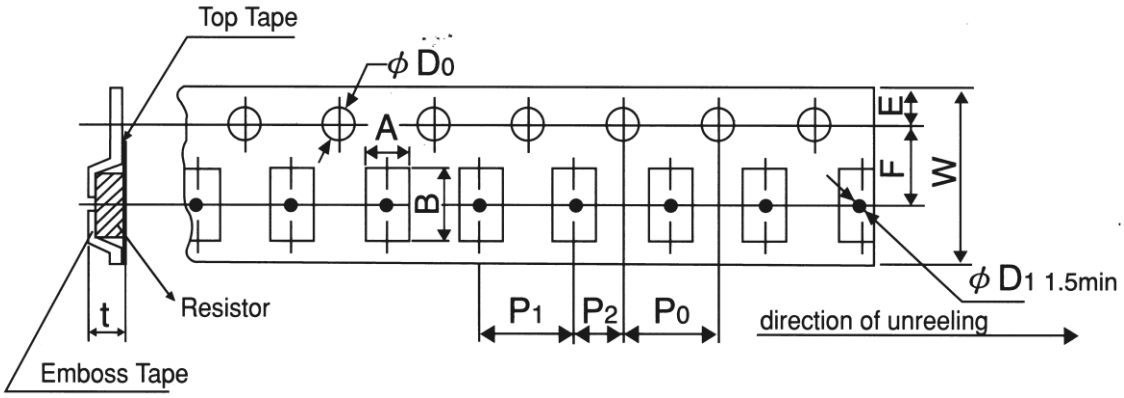
Packing	Type	A	B	W	F	E	P_1	P_2	P_0	D_0	T
Paper	RM06	1.1±0.1	1.9±0.1	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	φ 1.5 +0.1 -0	0.64±0.1
	RM10	1.6±0.15	2.4±0.2								0.84±0.1
	RM12	2.0±0.15	3.6±0.2								
	RM13	2.8±0.2	3.6±0.2								

8.1.2 2 mm pitch paper :



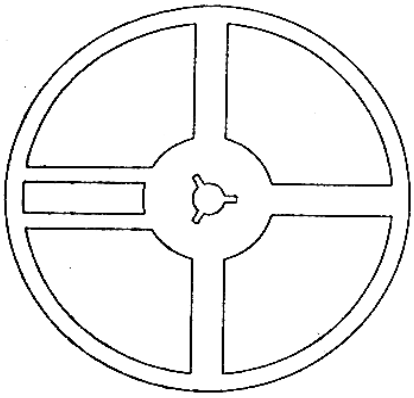
Packing	Type	A	B	W	F	E	P_1	P_2	P_0	D_0	T
Paper	RM02	0.37±0.05	0.67±0.1	8.0±0.2	3.5±0.05	1.75±0.1	2.0±0.1	2.0±0.05	4.0±0.1	φ 1.5 +0.1 -0	0.37±0.1
	RM04	0.7±0.05	1.2±0.05				2.0±0.1	2.0±0.1			0.45±0.1
	RM06	1.1±0.1	1.9±0.1				2.0±0.1	2.0±0.1			0.64±0.1

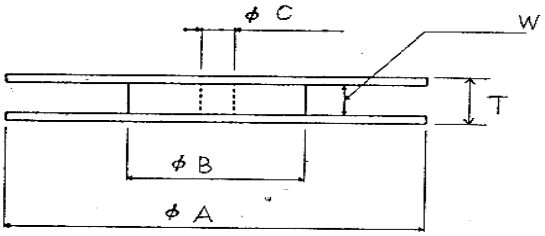
8.1.3 4 mm pitch Emboss :



Packing	Type	A	B	W	F	E	P_1	P_2	P_0	D_0	T
Emboss	RM20	2.8±0.2	5.3±0.2	12.0±0.2	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.05	φ1.5 +0.1 -0	0.85±0.15
	RM25	3.6±0.2	6.9±0.2								

8.2 Reel Specifications :



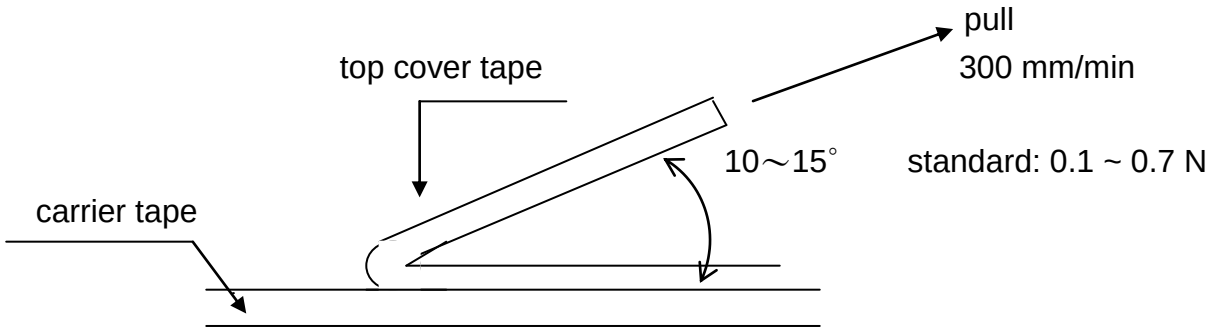


UNIT: mm

Type	φ A	φ B	φ C	W	T
RM02 /04 / 06 RM10 /12 /13	178.0 ± 2.0	60.0 ± 1.0	13.0 ± 1.0	9.0 ± 1.0	11.5 ± 1.0
RM20 / 25				13.0 ± 1.0	15.5 ± 1.0

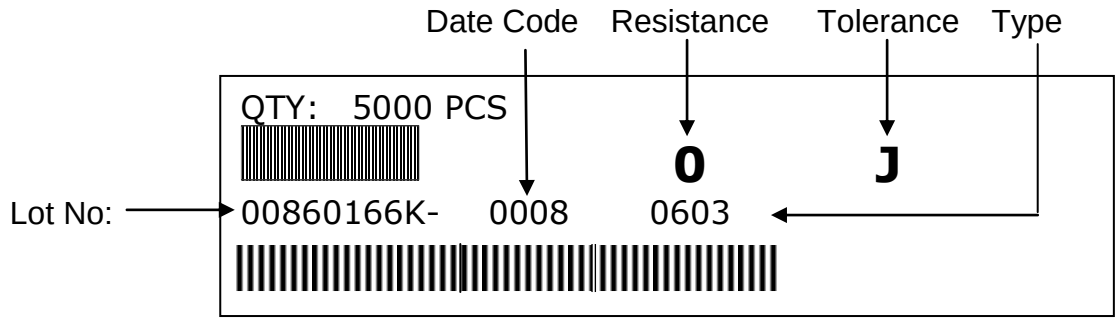
8.3. Peel –off force :

Peel –off force of paper and blister tape is in accordance with "JIS-C5202 "
that is , 0.1 to 0.7 N at a peel-off speed of 300 mm / minute.

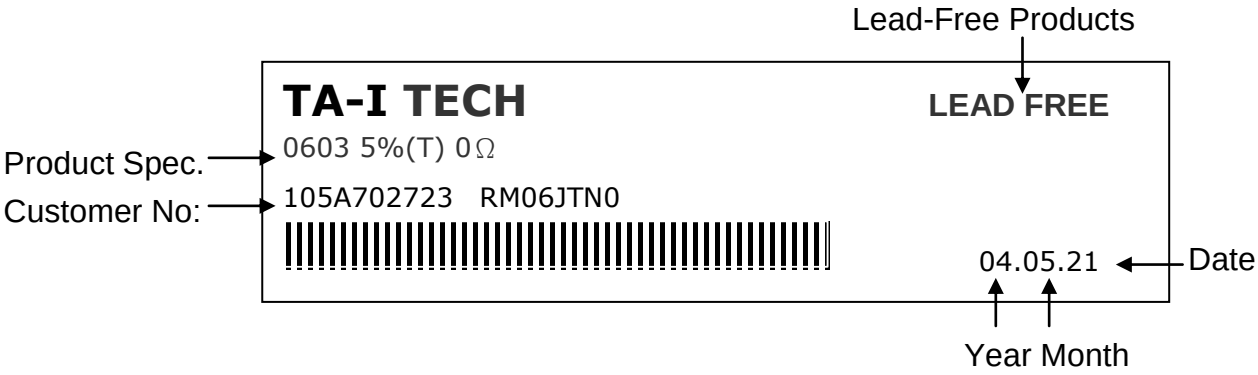


9. Label :

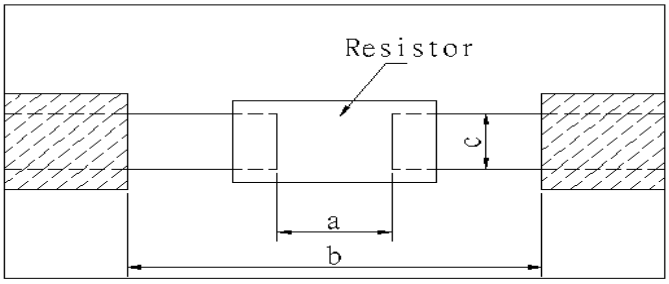
9.1 Manufacture Label :



Customer Label (By customer request):

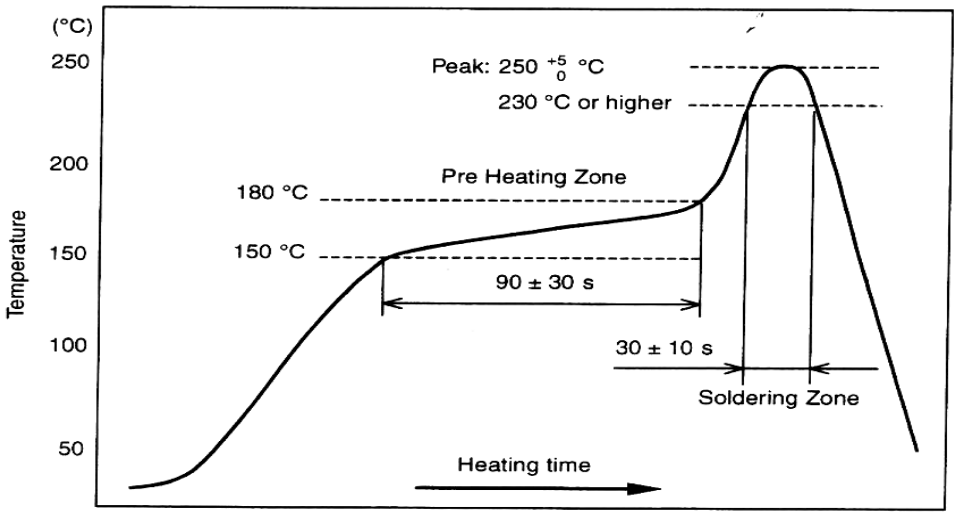


10. Recommended land patterns :



Type \ Land pattern / Size		Dimension (mm)		
		a	b	c
RM	02 (0201)	0.25~0.3	0.7~0.9	0.3~0.4
RM	04 (0402)	0.50~0.6	1.4~1.6	0.4~0.6
RM	06 (0603)	0.7~0.9	2.0~2.2	0.8~1.0
RM	10 (0805)	1.0~1.4	3.2~3.8	0.9~1.4
RM	12 (1206)	2.0~2.4	4.4~5.0	1.2~1.8
RM	13 (1210)	2.0~2.4	4.4~5.0	2.3~3.5
RM	20 (2010)	3.3~3.7	5.7~6.5	2.3~3.5
RM	25 (2512)	3.6~4.0	7.6~8.6	2.3~3.5

11. Recommend IR – Reflow profile : (solder : Sn96.5 / Ag3 / Cu0.5)



Peak : 250 $^{+5}_{-0}$℃ , 5 sec

Pre – heat Zone : 150 to 180 ℃, 90±30 sec

Soldering Zone : 230℃ or higher , 30±10 sec

12. Storage Conditions:

Temperature: 5℃~35℃,Humidity:40%~75%

13. Shelf Life:

2 years from manufacturing date.

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) FORTUNE TASK RESISTOR FACTORY (China – Dongguan)
Tel : 86-769-8339-4790～3 Fax : 86-769-8339-4794

(2) TA-I TECHNOLOGY (DONGGUAN) CO., LTD. (China –Dongguan)
Tel : 86-769-8339-4790～3 Fax : 86-769-8339-4794

(3) TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)
Tel :86- 512-63457879 Fax : 86-512-63457869

(4) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Pulaupinang)
Tel :604- 3900480 Fax : 604-3901481

(5) P.T.TAI ELECTRONICS Indonesia (Indonesia – Jakarta)
Tel :002-62-21-44820254 Fax : 002-62-21-44820256

Revise record

Date	Content	Owner
Apr. 19. 2007	**6. Reliability Tests: (As specified in JIS C 5202)** Short Time Overload & Intermittent Overload Voltage change to current	Vincent
March.01.2011	Reliability test : Reference standard from JIS-5202 change to IEC60115 & JIS-C5201	Kate
June 24.2011	Operating Temp(℃): From -55℃ ～ +125℃ change to -55℃ ～ +155℃ (RM02 -55℃ ～ +125℃)	kate