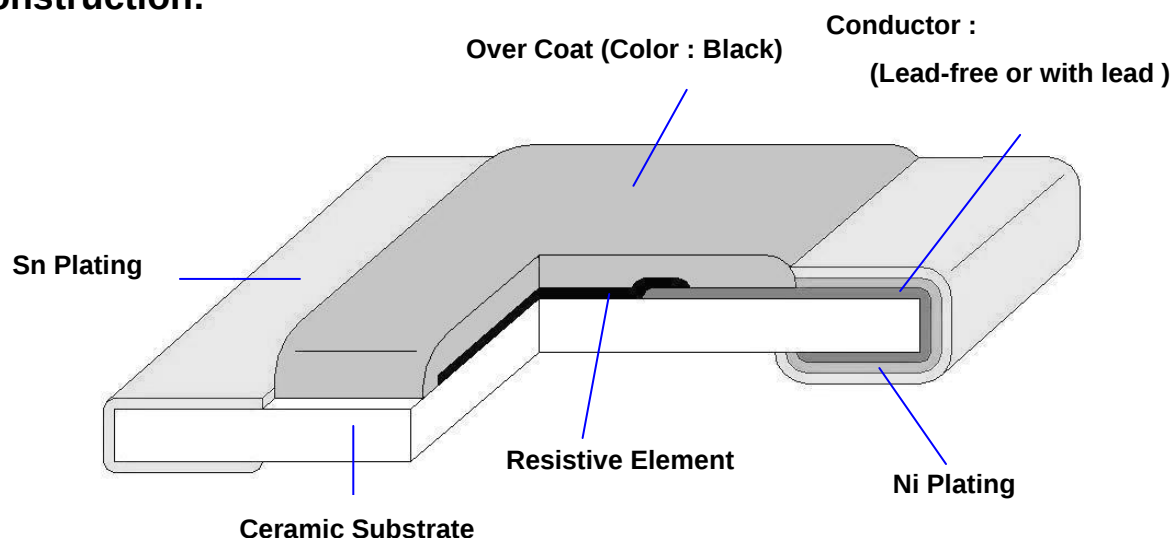


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1. Scope :

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

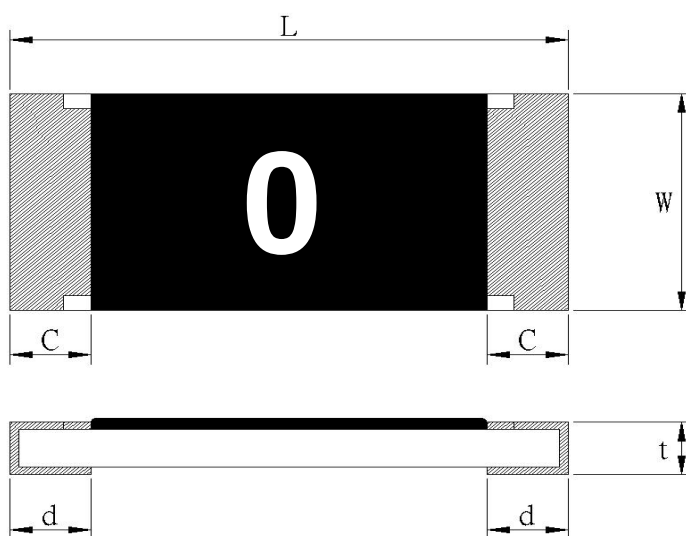
2. Construction:



3. Type Designation:

<u>RM</u>	<u>10</u>	<u>J</u>	<u>TN</u>	<u>0</u>
Product Code	Size	Tolerance	Packaging	Nominal Resistance
RM : Chip Resistor	Power Rating			
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 :

O Ω THICK FILM CHIP RESISTORS			
Type	Rated Current	DC DC inrush current (5 sec/one time) Max Overload Current	Resistance Range
RM02	0.5A	1A	50m Ω MAX
RM04	1A	2.5A	50m Ω MAX
RM06	1A	2.5A	50m Ω MAX
RM10	2A	5A	50m Ω MAX
RM12	2A	5A	50m Ω MAX
RM13	2A	5A	50m Ω MAX
RM20	2A	5A	50m Ω MAX
RM25	2A	5A	50m Ω MAX

Operating Temp(°C): : -55°C ~ +155°C (RM02 -55°C ~ +125°C)

5.1 Derating Curve :

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

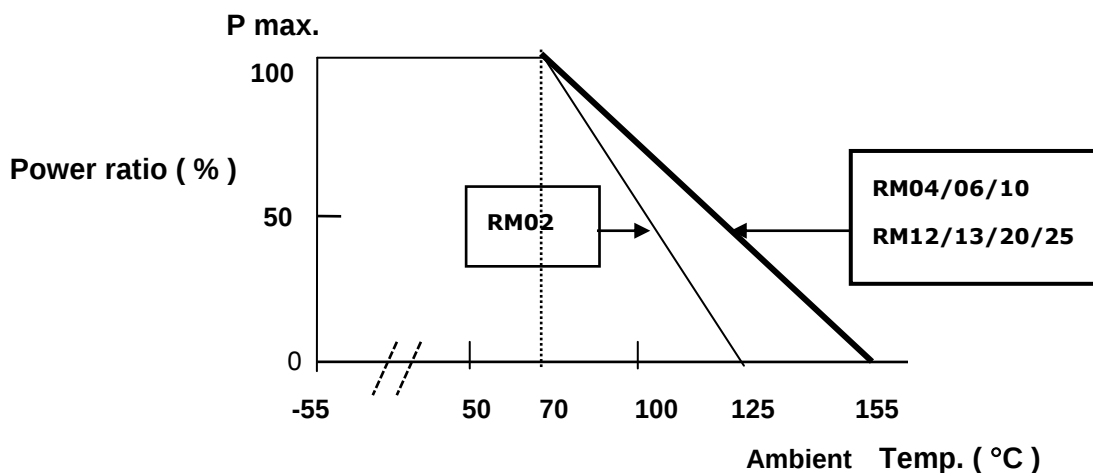


Figure 1

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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 °C	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	IEC60115-1-4.39 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 °C , 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°C, 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°C (30 min.) / +155 °C (30 min.) 5 cycles	0Ω : 50mΩ or less
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245±5°C 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°C for 96±4Hrs	0Ω : 50mΩ or less
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-4.18	270 ±5°C solder , 10 ±1 sec dwell .	0Ω : 50mΩ or less

Note* : RCWC : Rated continuous working current .

7. Marking

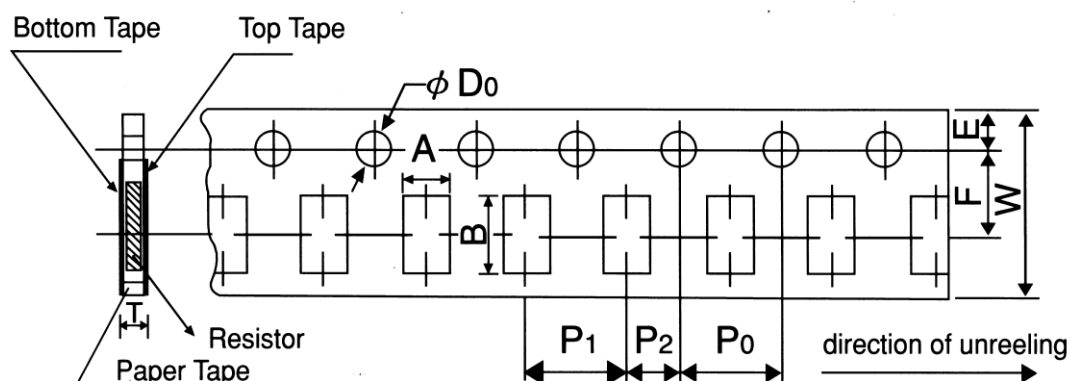
7.1 1 digit, e.g.,:(E-24) 0 = 0Ω.

7.2 No Marking for RM02 & RM04

8. Taping & Reel :

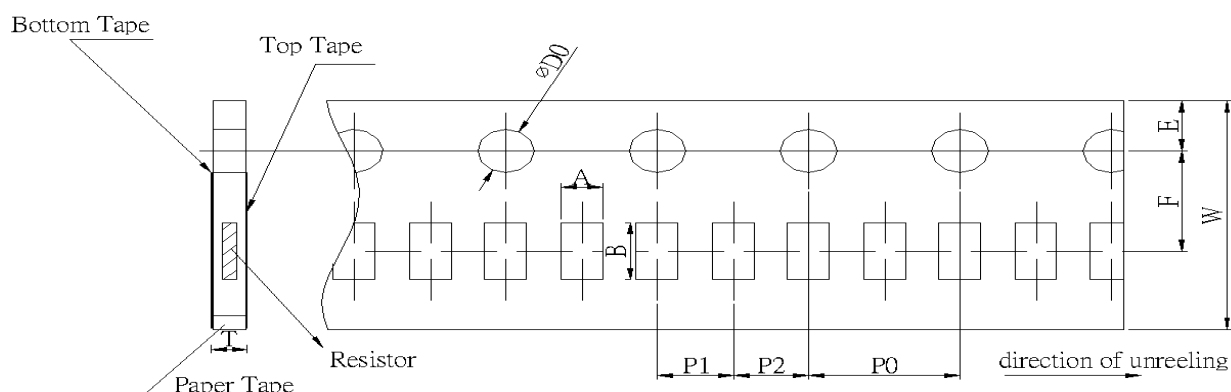
8.1 Taping Dimensions

8.1.1 4 mm pitch paper:



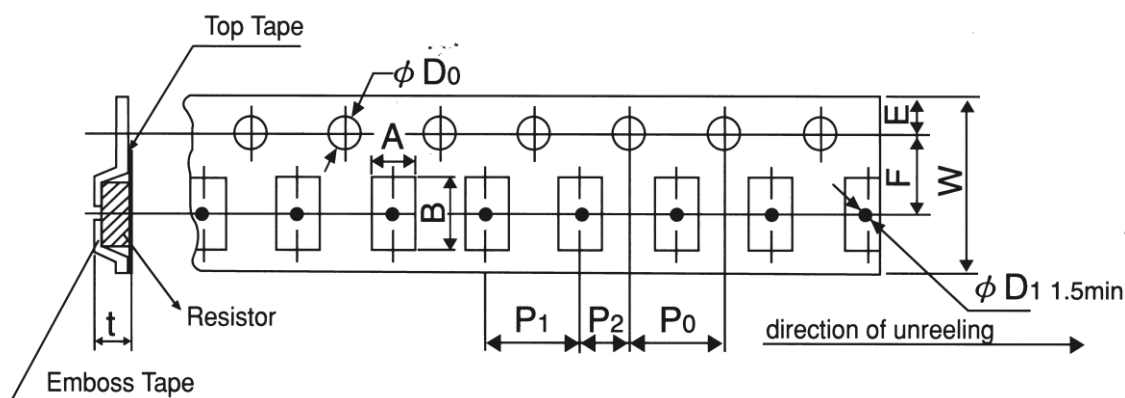
Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper	RM06	1.1±0.1	1.9±0.1	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	$\phi 1.5$ +0.1 -0	0.64±0.1
	RM10	1.6±0.15	2.4±0.2								0.84±0.1
	RM12	2.0±0.15	3.6±0.2								
	RM13	2.8±0.2	3.6±0.2								

8.1.2 2 mm pitch paper :



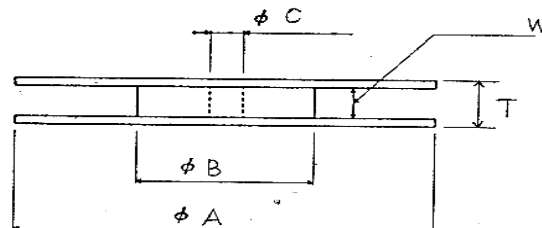
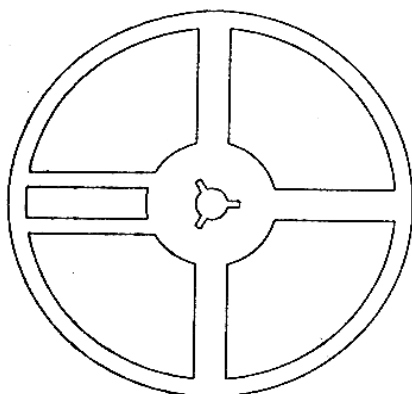
Packing	Type	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper	RM02	0.37±0.05	0.67±0.1	8.0±0.2	3.5±0.05	1.75±0.1	2.0±0.1	2.0±0.05	4.0±0.1	$\phi 1.5$ +0.1 -0	0.37±0.1
	RM04	0.7±0.05	1.2±0.05				2.0±0.1	2.0±0.1			0.45±0.1
	RM06	1.1±0.1	1.9±0.1				2.0±0.1	2.0±0.1			0.64±0.1

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	$\phi 1.5$ $\begin{matrix} +0.1 \\ -0 \end{matrix}$	0.85±0.15
	RM25	3.6±0.2	6.9±0.2								

8.2 Reel Specifications :



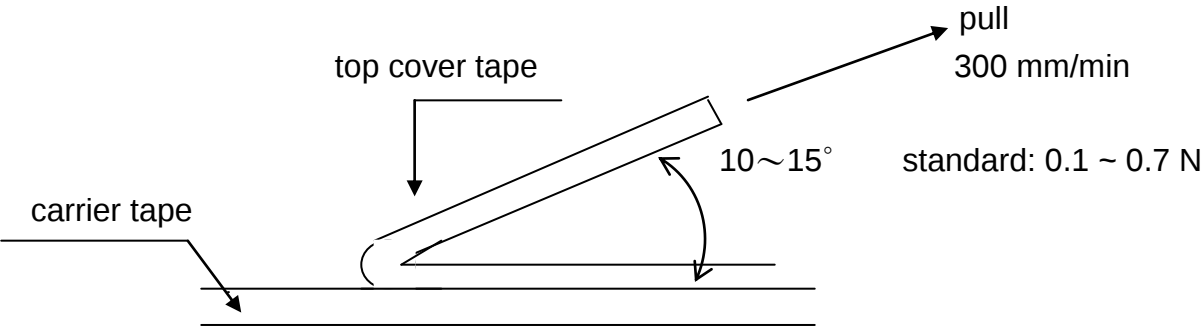
UNIT: mm

Type	ϕA	ϕB	ϕC	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

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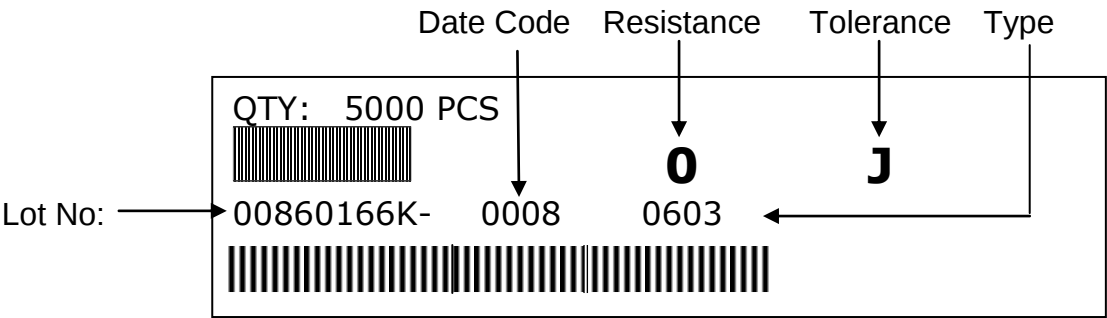
8.3. Peel –off force :

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.



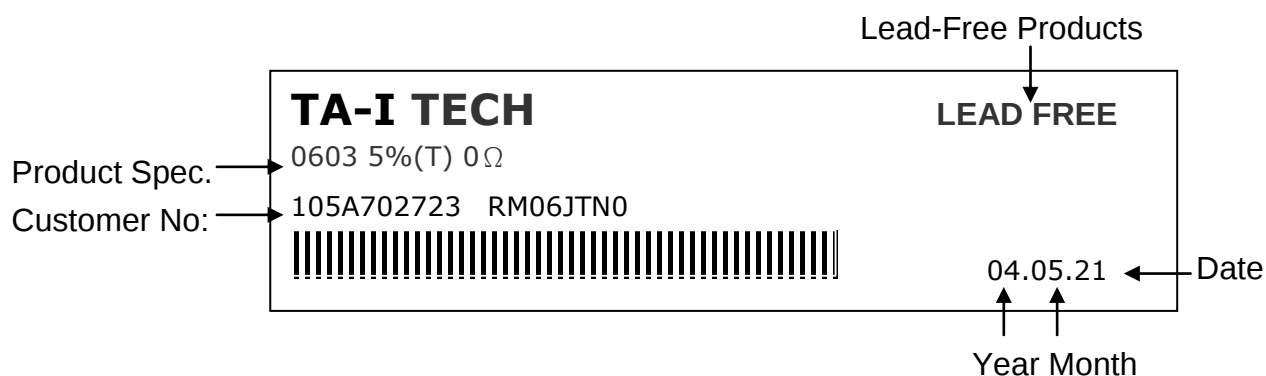
9. Label :

9.1 Manufacture Label :

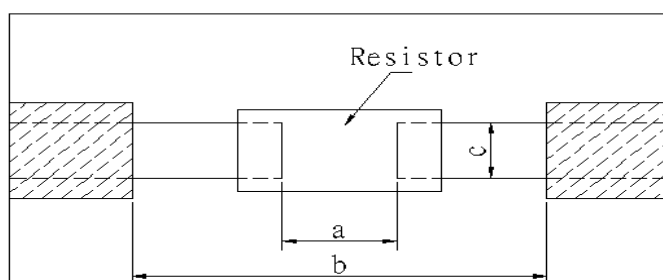


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Customer Label (By customer request):



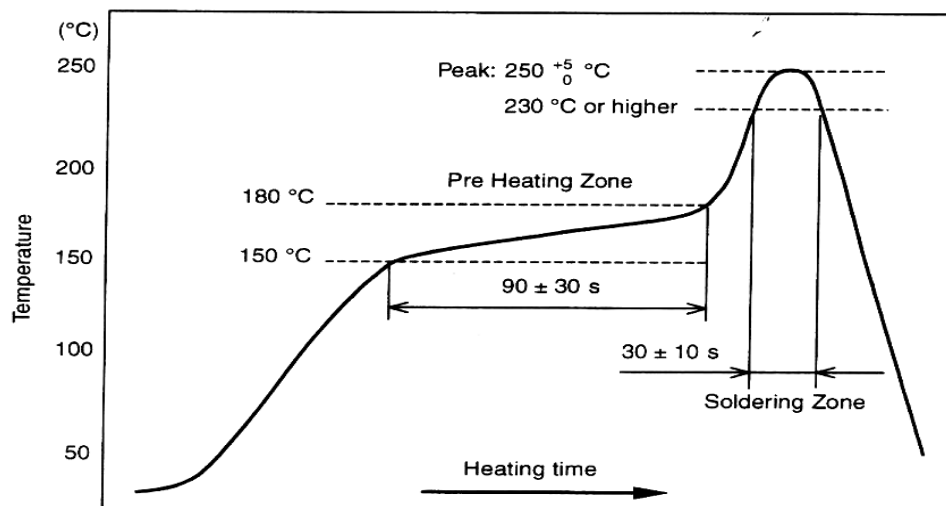
10. Recommended land patterns :



Type	Size	Land pattern			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

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



Peak : $250 \begin{smallmatrix} +5 \\ -0 \end{smallmatrix}^{\circ}\text{C}$, 5 sec

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

Soldering Zone : 230°C or higher , 30±10 sec

12. Storage Conditions:

Temperature: 5°C~35°C, 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.

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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

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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(°C): From -55°C ~ +125°C change to -55°C ~ +155°C (RM02 -55°C ~ +125°C)	kate