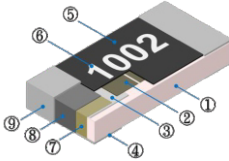


■ INTRODUCTION

The RMTUH Series are Triple Power, thin film resistors. They feature a lower temperature coefficient than thick types and are ideal for use in applications where temperature stability is important. These resistors are lead free.

■ CONSTRUCTION

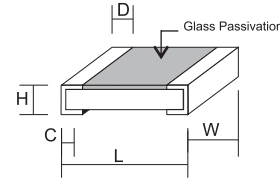


①	Alumina Substrate	④	Bottom Inner Electrode	⑦	Side Inner Electrode
②	Resistive Layer	⑤	Protective Overcoat	⑧	Nickel Barrier
③	Top Inner Electrode	⑥	Marking	⑨	Solder coating (Sn)

■ FEATURES

- Tolerance to $\pm 0.1\%$
- Low TCR to ± 10 ppm/ $^{\circ}\text{C}$
- Halogen free and lead free

■ DIMENSIONS

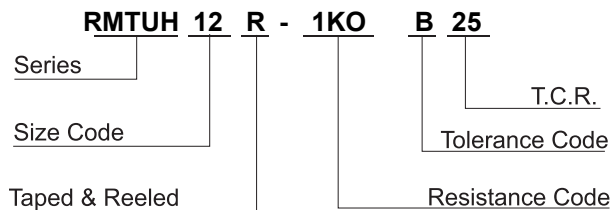


Size Code	Max. Dimension (mm)				
	L	W	H	C	D
RMTUH12(1206)	3.20 ± 0.20	1.60 ± 0.20	0.55 ± 0.15	1.10 ± 0.20	0.50 ± 0.25

■ RATINGS & RESISTANCE RANGE

Type	Rated Power at 70C	Max. Working Voltage	Max. Overload Voltage	T.C.R. (PPM/ $^{\circ}\text{C}$)	Resistance Range			
					B ($\pm 0.1\%$)	C ($\pm 0.25\%$)	D ($\pm 0.5\%$)	F ($\pm 1\%$)
RMTUH (1206)	1W	200V	400V	± 10 & ± 15 ± 25 & ± 50	10 Ω ~ 1K Ω			

■ PART NUMBER EXAMPLE



■ RESISTANCE CODE

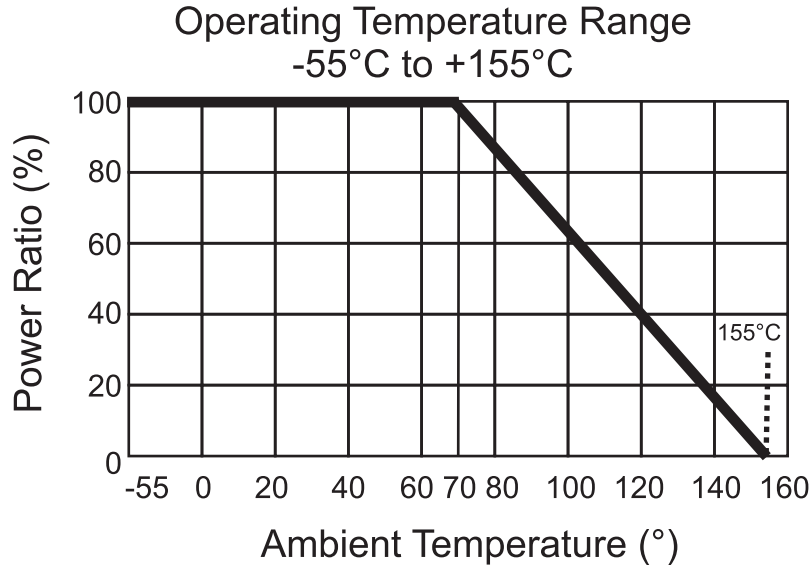
Ohms	10	100	1K
Code	10R	100R	1KO

■ TOLERANCE CODE

Tolerance	$\pm 0.1\%$	$\pm 0.25\%$	$\pm 0.5\%$	$\pm 1\%$
Code	B	C	D	F

■ **PERFORMANCE CHARACTERISTICS**

■ **POWER DERATING CURVE**



Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70°C. For operation at ambient temperature in excess of 70°C, the load should be derated in accordance with figure of derating Curve.

■ **VOLTAGE RATING OR CURRENT RATING**

Resistance Range: $\geq 1\Omega$

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as follows:

$$V = \sqrt{P \times R}$$

V = Rated Voltage (V)
P = Power Rating (W)
R = Nominal Resistance (Ω)

■ **OPERATION AND STORAGE TEMPERATURE**

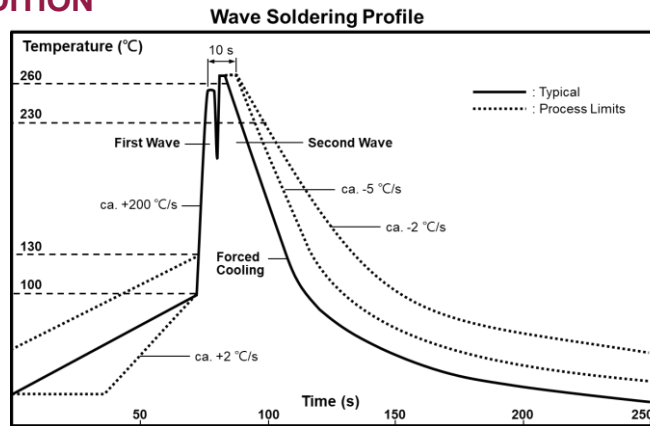
TYPE	MIN	MAX
Operation temperature	-55°C	70°C
Storage temperature	20°C	30°C
Storage humidity	30%	70°C

■ RELIABILITY TESTS AND REQUIREMENTS

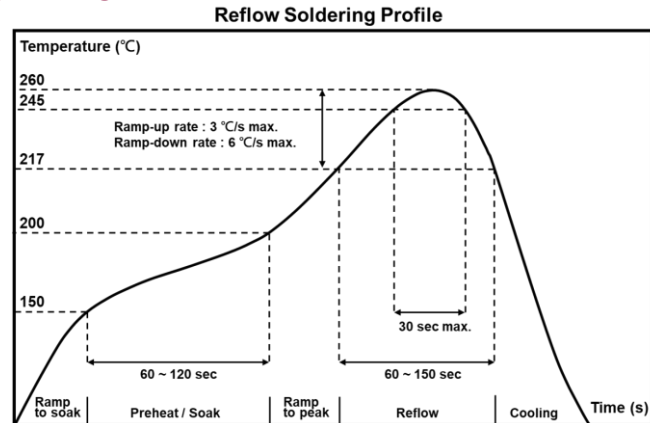
Test Item	Test Method	Procedure	Requirements
Temperature Coefficient of Resistance (T.C.R)	JIS-C-5201-1 4.8 IEC-60115-1 4.8	At 25 / -55°C and 25°C /+125°C, 25°C is the reference temperature	Refer to Standard Electrical Specifications
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds.	±(0.25%+0.05Ω) No Visual damage
Insulation Resistance	JJIS-C-5201-1 4.6 IEC-60115-1 4.6	Apply 100VDC for 1 minute.	≥10GΩ
Dielectric Withstanding Voltage	JIS-C5201-1 4.7 IEC-60115-1 4.7	Applied 500VAC for 1 minute.	No short or burned on the appearance.
Solderability	JIS-C-5201-1 4.17 IEC-60115-1 4.17	245±5°C for 3 seconds.	>95% Coverage No Visual damage
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60115-1 4.18	260±5°C for 10 seconds.	±(0.25%+0.05Ω) No Visual damage
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	260±5°C for 30 seconds.	>95% Coverage No Visual damage
Rapid Change of Temperature	JIS-C-5201-1 4.19 IEC-60115-1 4.19	-55°C to +125°C, 1000 cycles	±(0.25%+0.05Ω) No Visual damage
High Temperature Exposure	JIS-C5201-1 4.25 IEC 60068-2-2	At 155±5°C for 1000 hours.	±(0.25%+0.05Ω)
Resistance to Solvent	JIS-C-5201-1 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25°C for 60 secs. Then the resistor is left in the room for 48 hrs.	±(0.25%+0.05Ω) No Visual damage
Damp Heat with Load	JIS-C-5201-1 4.24 IEC-60115-1 4.24	40±2°C, 90~95% R.H. RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"	±(0.25%+0.05Ω)
Biased Humidity	MIL-STD-202 Method 103	1,000 hours; 85°C / 85% RH, 10% of operating power. Measurement at 24±4 hours after test conclusion.	±(0.25%+0.05Ω)
Load Life (Endurance)	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1	70±2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	±(0.25%+0.05Ω)
Bending Strength	JIS-C-5201-1 4.33 IEC-60115-1 4.33	Bending once for 5 seconds D : 1206 = 3mm	±(0.25%+0.05Ω) No Visual damage

■ **RECOMMENDED SOLDERING PARAMETERS**

■ **WAVE SOLDER TEMPERATURE CONDITION**



■ **SOLDER REFLOW TEMPERATURE CONDITION**



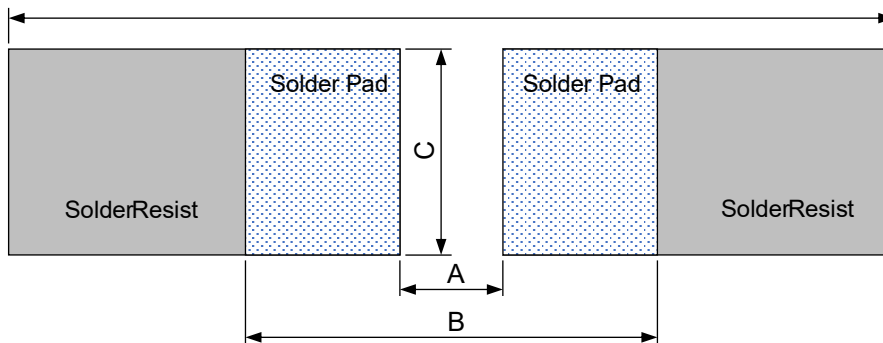
■ **REWORK TEMPERATURE (HOT AIR EQUIPMENT): 350°C, 3~5 seconds**

■ **RECOMMENDED REFLOW METHODS**

IR, vapor phase oven, hot air oven

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

■ **RECOMMENDED LAND PATTERN DESIGN**



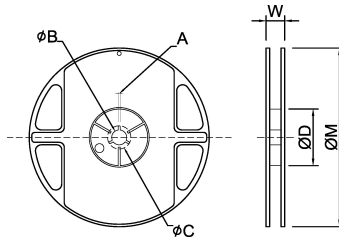
Type	1206
A	0.55
B	4.35
C	1.80
D	27.0

Unit: mm

Test board material: Glass fabric base epoxy resin 1.6mm Copper foil, thickness 0.035mm,
Solder resist coated.

■ **PACKAGING INFORMATION**

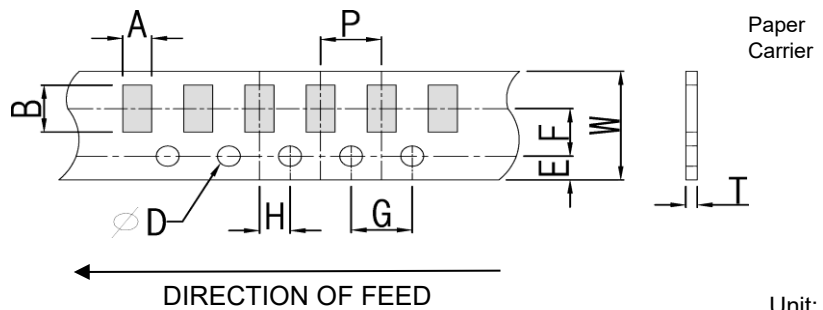
■ **REEL DIMENSIONS (mm)**



Unit: mm t

TYPE	SIZE	A	Φ B	Φ C	Φ D	W	Φ M
1206	7"	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0

■ **PAPER TAPE DIMENSIONS**



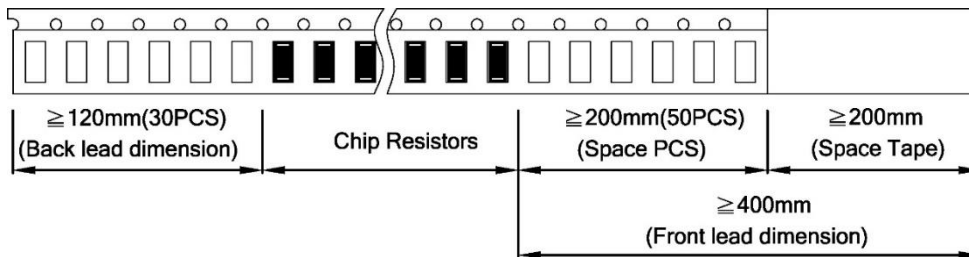
Paper Carrier

DIRECTION OF FEED

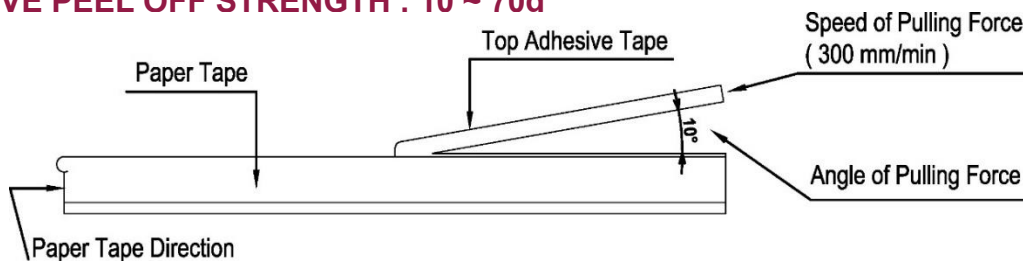
Unit: mm

Type	A	B	W	E	F	G	H	T	Φ D	P
1206	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50 ^{+0.10} ₋₀	4.0±0.10

■ **FRONT AND BACK LEAD DIMENSIONS**



■ **TOP ADHESIVE PEEL OFF STRENGTH : 10 ~ 70α**



■ **STORAGE DATA**

Storage time at the environment temp.: 25±5°C & humidity: 60±20% is valid for one year from the date of delivery.