



APPROVAL SHEET

Product Name : High Ohmic Chip Resistor

Part No. : TMR

Description : Size 0603~1206

For more contact information, please refer to our website: www.rideetech.com

High Ohmic Chip Resistor — TMR Series

Applications

- Automotive industry
- Power supply in small size
- Medical equipment



Features

- Extended resistance range(11MΩ ~ 100MΩ)
- RoHS compliant & Halogen Free

Part Number Explanation

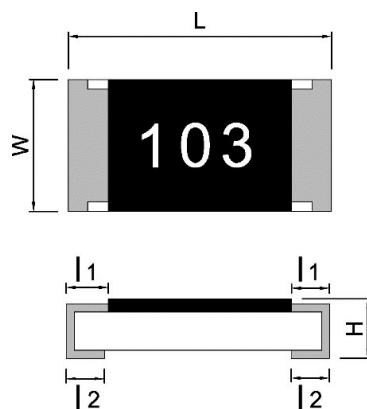
TMR	1206	F	1006	T	S
Product	Size (Inch)	Tolerance	Resistance	Packaging	Functional
High Ohmic Chip Resistor	0603 0805 1206	F : ±1% J : ±5%	11MΩ=1105 100MΩ=1006	T=Tape & Reel	S= STANDARD TYPE

Standard Electrical Specifications

Type	Rated Power at 70°C	Max. RCWV	Max Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (TCR;ppm/°C)	Resistance Range
TMR 0603	0.1 W	50V	100V	±1	±200	$11\text{M}\Omega \leq R \leq 22\text{M}\Omega$
				±5		$11\text{M}\Omega \leq R \leq 100\text{M}\Omega$
TMR 0805	0.125 W	150V	300V	±1	±200	$11\text{M}\Omega \leq R \leq 22\text{M}\Omega$
				±5		$11\text{M}\Omega \leq R \leq 100\text{M}\Omega$
TMR 1206	0.25 W	200V	400V	±1	±200	$11\text{M}\Omega \leq R \leq 22\text{M}\Omega$
				±5		$11\text{M}\Omega \leq R \leq 100\text{M}\Omega$

- Functional code: S
- Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.

Dimension

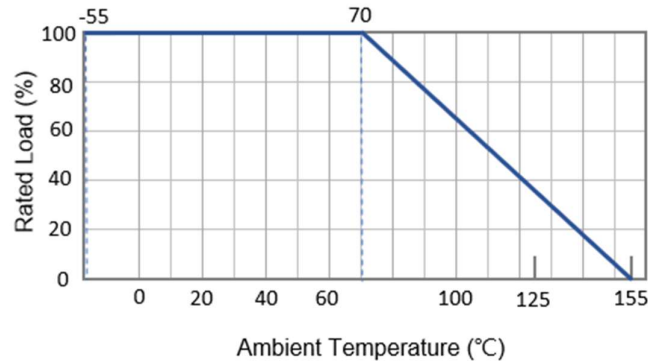


Unit : mm

Type	L	W	l ₁	l ₂	H
TMR0603	1.60±0.10	0.80±0.10	0.30±0.20	0.30±0.20	0.45±0.10
TMR0805	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.10
TMR1206	3.10±0.10	1.60±0.10	0.50±0.25	0.50±0.25	0.55±0.10

Derating Curve

Operating Temperature Range: -55°C to +155°C



Voltage Rating or Current Rating

The direct or alternating voltage for the rated power can be calculated from the following formula but must not exceed the maximum voltage.

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

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

Recommended Customer Soldering Parameters

Recommended IR Reflow Soldering Conditions

Preliminary heating: 150°C~180°C, 120s max
 Soldering: 220°C, 60s max
 Peak temperature: 245°C, 15s max

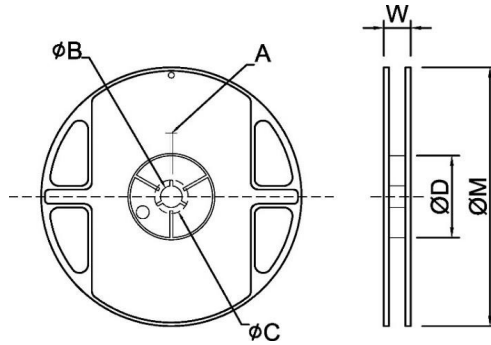
Recommended WAVE Soldering Conditions

Reservoir Temperature: 260°C, 10s max
 Number of times: two times max

■ Reliability Test and Requirement

Test Item	Test Method	Procedure	Requirements
			TYPE
Temperature Coefficient of Resistance (T.C.R)	IEC 60115-1 4.8	At 25 / -55℃ and 25℃ /+155℃ , 25℃ is the reference temperature	1% , 5%: $\pm 200 \text{ ppm/}^\circ\text{C}$
Short Time Overload	IEC-60115-1 4.13	2.5 × Rated power for 5 seconds	1% , 5%: $\Delta R \leq \pm 2\%$
Leaching	IEC-60068-2-58 8.2.1	260±5℃ for 30 seconds	Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$
Resistance to Soldering Heat	IEC 60115-1 4.18	With 260±5℃ for 10±1 sec.	1% , 5%: $\Delta R \leq \pm 2\%$
Rapid Change of Temperature	IEC-60115-1 4.19	-55℃ to +125℃ , 5 cycles	1% , 5%: $\Delta R \leq \pm 5\%$
Damp Heat With Load	IEC 60115-1 4.24	40±2℃ with relative humidity 90% ~ 95% D.C. rated voltage for 1.5 hours ON 30 minutes OFF.Cycle repeated 1000 hours. After 1~4 hour, measure the resistance value	1% , 5%: $\Delta R \leq \pm 5\%$
Load Life	IEC-60115-1 4.25	Rated voltage for 1.5 hours for followed by a pause 0.5 hour at 70±2℃ .	1% , 5%: $\Delta R \leq \pm 5\%$
Insulation Resistance	IEC-60115-1 4.6	Test voltage : 100±15V	Between termination and coating must over 1000MΩ
Bending Strength	IEC 60115-1 4.33	Resistance change after bended on the 90mm PCB. Bending 3mm for 0603, 0805 Bending 2mm for 1206	1% , 5%: $\Delta R \leq \pm 2\%$
Voltage Coefficient of Resistance (VCR)	JIS C 5201 4.11	Measuring Voltage 10V/100V	$\leq \pm 300 \text{ ppm/V}$

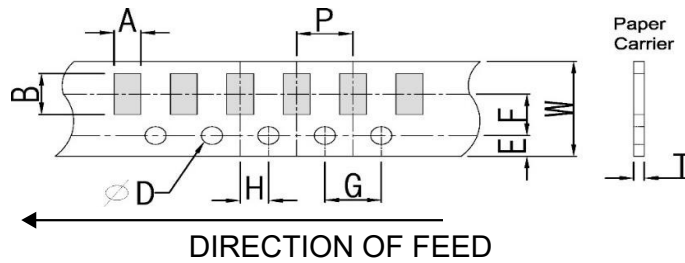
■ Packaging Information



Unit:mm

Size	Packaging Q'ty	A	N	C	D	B	G	T
0603 0805 1206	5kpcs/Reel	178.0±2.0	60.0±0.5	13.0±0.5	20(Min.)	2.0±0.5	10.0±1.5	14.9max.

■ Tapping Specification

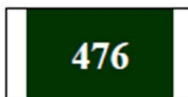


Unit:mm

Size	A	B	W	F	E	P1	P2	P	D
0603	1.10±0.20	1.90±0.20	8.00±0.30	3.50±0.05	1.75±0.10	4.00±0.10	2.00±0.05	4.00±0.10	1.50+0.10/-0
0805	1.65±0.20	2.40±0.20	8.00±0.30	3.50±0.05	1.75±0.10	4.00±0.10	2.00±0.05	4.00±0.10	1.50+0.10/-0
1206	2.00±0.20	3.60±0.20	8.00±0.30	3.50±0.05	1.75±0.10	4.00±0.10	2.00±0.05	4.00±0.10	1.50+0.10/-0

■ Marking

E12 ±1%, ±5%: 3 digits marking
0603/0805/1206



Resistance	47MΩ
3 digits code	476