

Low Resistance Value Chip Resistors(Current Sensing Resistors) 2512

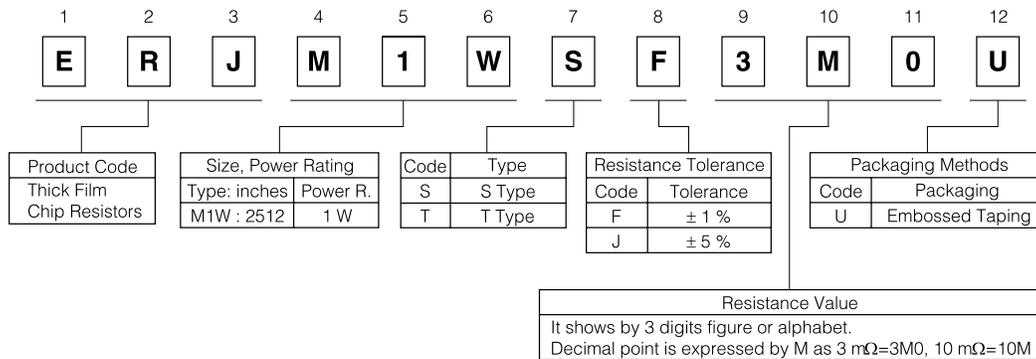
Type: **ERJM1W**



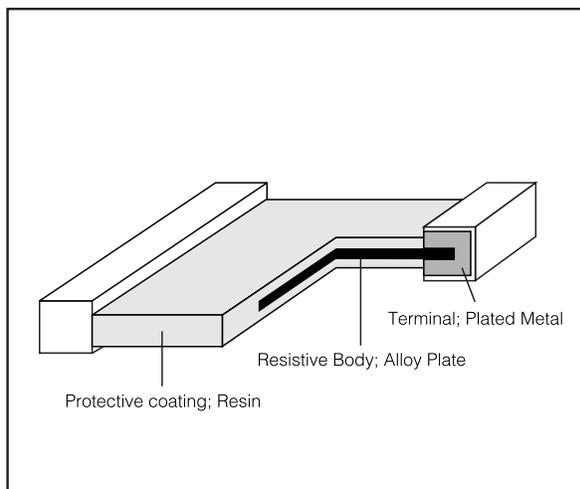
■ Features

- Low resistance values and high precision (1 mΩ to 20 mΩ)
- Stable resistance
- High heat emission
- Low profile, strong body
- Inductance less than 1.0 nH

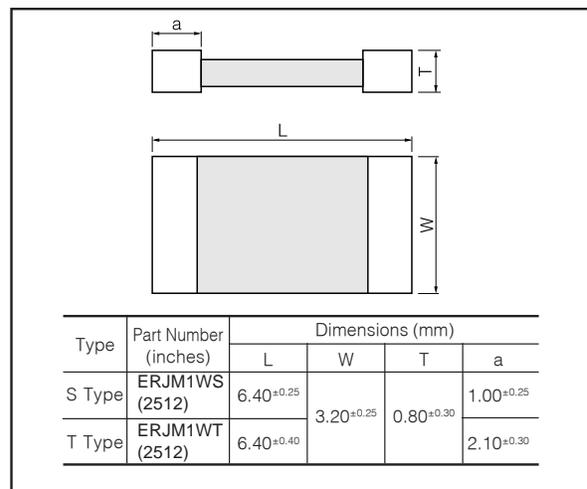
■ Explanation of Part Numbers



■ Construction



■ Dimensions in mm (not to scale)



Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use. Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

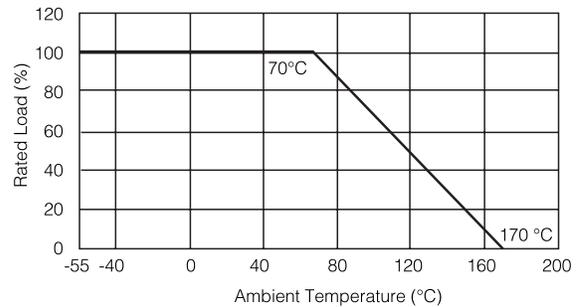
■ Ratings

Type (inches)	Power Rating (W)	Standard Resistance(mΩ)	Resistance Tolerance (%)	T.C.R. $\times 10^{-6}/^{\circ}\text{C}(\text{ppm}/^{\circ}\text{C})$	Category Temperature Range (Operating Temperature Range) ($^{\circ}\text{C}$)	Circuit board of use
ERJM1WS (2512)	1	3, 4	F: ± 1 , J: ± 5	± 350	-55 to +170	You should use the aluminum substrate when the added wattage exceeds 0.5 W.
		5, 10, 15, 20		± 100		
ERJM1WT (2512)		1, 1.5, 2	J: ± 5	± 500		
ERJM1WT (2512)		3, 4	F: ± 1 , J: ± 5	± 150		

* Please consult our factory for other values and the range

Power Derating Curve

For resistors operating in ambient temperatures above 70 $^{\circ}\text{C}$, power rating should be derated in accordance with the right figure.



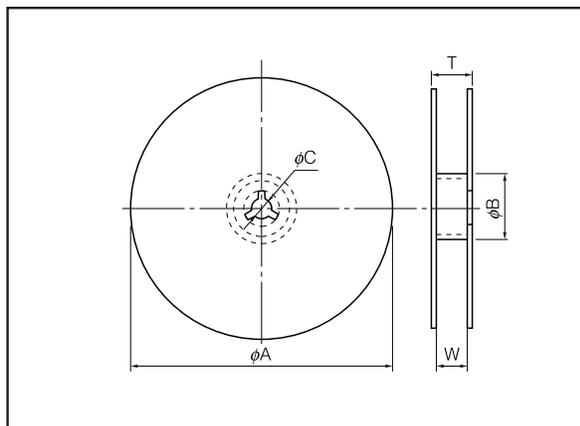
■ Packaging Specifications

● Standard Quantity

Type (inches)	Thickness (mm)	Weight (mg)	Embossed Taping
ERJM1WS (2512)	0.80 \pm 0.30	70	3000 pcs./reel
ERJM1WT (2512)		90	

■ Taping Dimensions

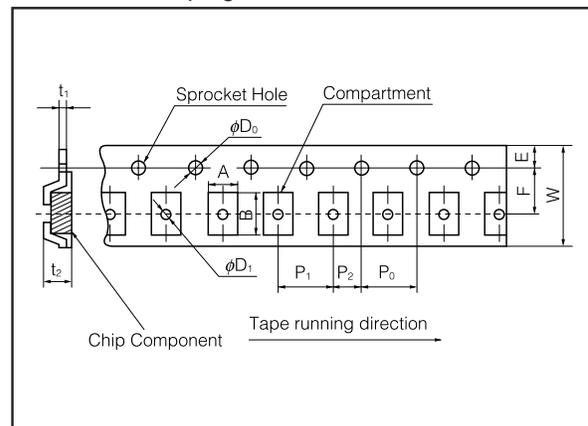
● Taping Reel



Dimensions (mm)	ϕA	ϕB	ϕC
	180.0 $^{0}_{-3.0}$	60 min.	13.0 $^{\pm 1.0}$

Dimensions (mm)	W	T
	13.0 $^{\pm 1.0}$	15.4 $^{\pm 2.0}$

● Embossed Taping



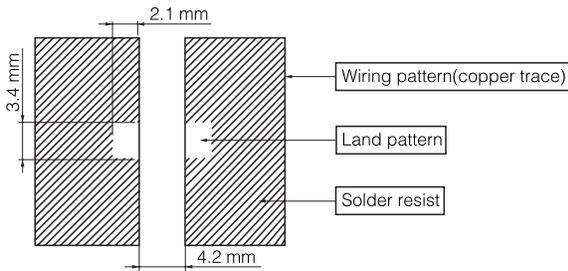
Dimensions (mm)	A	B	W	F	E	P ₀
	3.60 $^{\pm 0.25}$	6.90 $^{\pm 0.20}$	12.00 $^{\pm 0.30}$	5.50 $^{\pm 0.10}$	1.75 $^{\pm 0.20}$	4.00 $^{\pm 0.10}$

Dimensions (mm)	P ₁	P ₂	ϕD_0	t ₁	t ₂	ϕD_1
	4.00 $^{\pm 0.10}$	2.00 $^{\pm 0.10}$	1.50 $^{+0.1}_{0}$	0.35 $^{\pm 0.05}$	1.50 $^{\pm 0.20}$	1.50 $^{+0.2}_{0}$

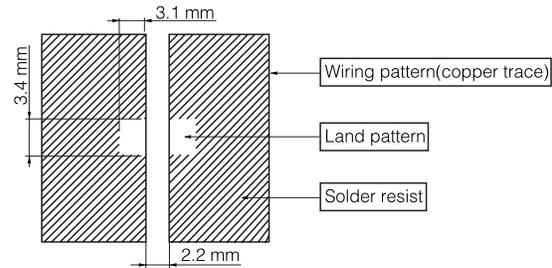
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Recommended land pattern

<ERJM1WS>



<ERJM1WT>

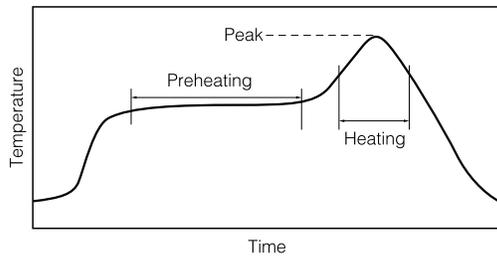


Recommended Soldering Conditions

Recommendations and precautions are described below.

Recommended soldering conditions for reflow

- Reflow soldering should be a maximum of two times.
- Please contact us for additional information when used in conditions other than those specified.
- Please measure the temperature of the terminations and study every kind of printed circuit board for solderability, before actual use.



For soldering (Example: Sn/Pb)

	Temperature	Time
Preheating	140 °C to 160 °C	60 s to 120 s
Main heating	Above 200 °C	30 s to 40 s
Peak	235 ± 5 °C	max. 10 s

For lead-free soldering (Example: Sn/Ag/Cu)

	Temperature	Time
Preheating	150 °C to 180 °C	60 s to 120 s
Main heating	Above 230 °C	30 s to 40 s
Peak	max. 260 °C	max. 10 s

Recommended soldering conditions for flow

	For solder		For lead-free solder	
	Temperature	Time	Temperature	Time
Preheating	140 °C to 160 °C	60 s to 120 s	150 °C to 180 °C	60 s to 120 s
Soldering	245±5 °C	20 s to 30 s	max. 260 °C	max. 10 s

⚠ Safety Precautions

1. Rated Power and Ambient Temperature
Keep the rated power and ambient temperature within the specified derating curve.
Confirm the effect of the heat produced in the actual mounting.
Please contact us if the product is to be used other than specified.
2. Chlorine type or other highly-reactive flux is not recommended as the residue. The residue may affect the performance or the reliability of resistors.
3. When using soldering iron, never let the tip of the soldering iron touch the body of the chip resistor.
When using a soldering iron with a tip at high temperature, solder for as short a time as possible (no more than three seconds and up to 350 °C).
4. Avoid physical shock to the resistor and nipping of the resistor with hard tool (pliers or tweezers) as it may damage protective coating of resistors and may affect its performance.
5. When the load of more than the rated power is applied under the load condition at steady state, it may impair performance and / or reliability of resistor. Never exceed the rated power.
6. Avoid immersion of chip resistor in solvent for a long time. Use solvent after the effect of immersion is confirmed.
7. If transient load (heavy load in a short time) like pulse is to be applied, carry out an evaluation and confirmation test with the resistors actually mounted on the board.

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