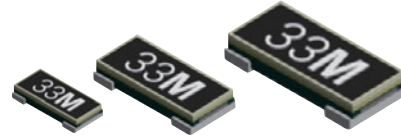


## Current Sensing Resistors, Metal Plate Type



Type: ERJ MP2, MP3, MP4

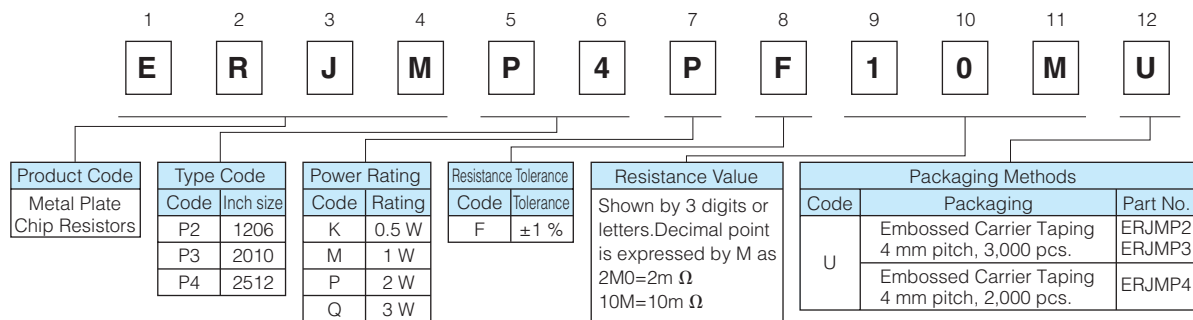
### Features

- Ideal for current sensing solution
- Small case size with high power
- Metal plate bonding technology. Excellent long term stability
- Outer Resin with high heat dissipation. Wide temperature range (-65 °C to +170 °C)
- AEC-Q200 qualified
- RoHS compliant
- ISO9001, ISO/TS16949 certified

### As for Packaging Methods, Soldering Conditions and Safety Precautions,

Please see Data Files

### Explanation of Part Numbers



### Ratings

Part No. (inch size)	Power Rating at 70 °C (W)	Resistance Range*1 (mΩ)	Resistance Tolerance (%)	T.C.R.*2 (×10 <sup>-6</sup> /°C)	Category Temperature Range (°C)
ERJMP2K (1206)	0.5	1 to 50	F : ±1	±75	-65 to +170
ERJMP2M (1206)	1	1 to 33			
ERJMP3K (2010)	0.5	1 to 50	F : ±1	±75	-65 to +170
ERJMP3M (2010)	1	1 to 33			
ERJMP3P (2010)	2	1 to 10			
ERJMP4M (2512)	1	1 to 50	F : ±1	±75	-65 to +170
ERJMP4P (2512)	2	1 to 33			
ERJMP4Q (2512)	3	1 to 5			

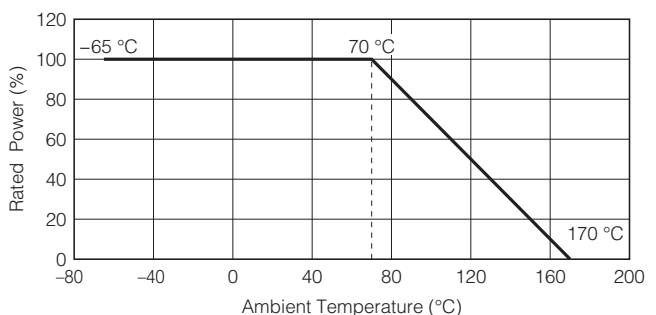
\*1 Regular resistance : 1m Ω, 2m Ω, 3m Ω, 5m Ω, 10m Ω, 15m Ω, 20m Ω, 22m Ω, 25m Ω, 30m Ω, 33m Ω, 50m Ω

Please contact us when resistors of irregular series are needed.

\*2 Please contact us when T.C.R. assurance within ±50×10<sup>-6</sup>/°C is needed.

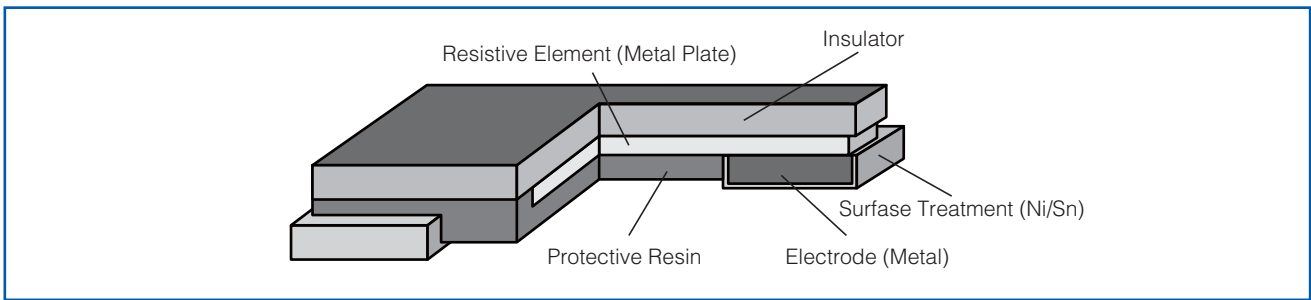
### Power Derating Curve

If the ambient temperature of the resistor is more than ambient temperature upper limit value of the rated table, please reduce the rated power according to the Power Derating Curve shown in the figure on the right.

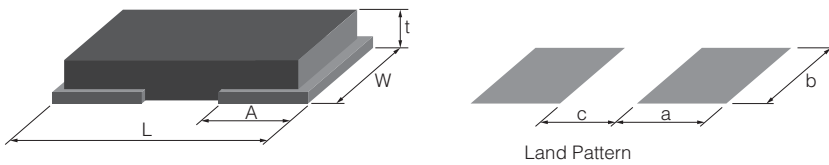


# Panasonic Current Sensing Resistors, Metal Plate Type

## Construction

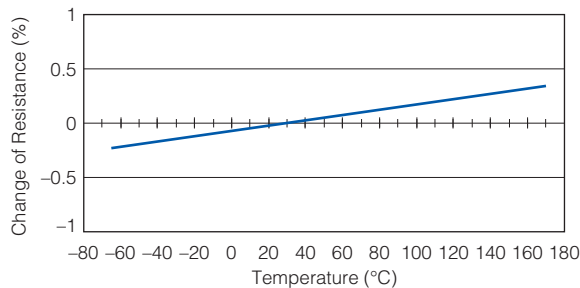


## Dimensions in mm (not to scale), Recommended Land Pattern



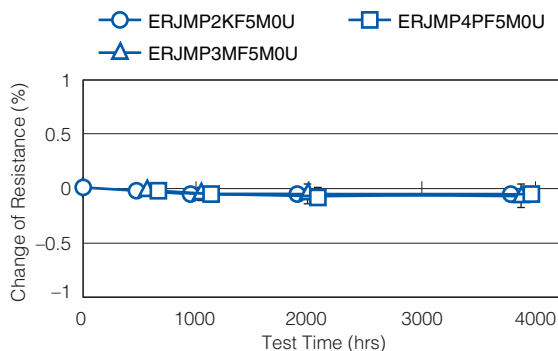
Part No. (inch size)	Resistance Value ( $\Omega$ )	Dimension (mm)				Recommended Land Pattern (mm)			Mass (Weight) (g/1000 pcs.)
		L	W	A	t	a	b	c	
ERJMP2 (1206)	1m	3.20±0.25	1.60±0.25	1.04±0.25	0.90±0.25	1.5	1.8	1.0	30
	2m			0.64±0.25		1.1			
	3m to 5m			0.64±0.25	1.1	1.8	1.8		
	6m to 50m			0.50±0.25	0.64±0.25	1.1	1.8	1.8	
ERJMP3 (2010)	1m	5.00±0.25	2.50±0.25	1.47±0.25	0.90±0.25	2.1	3.1	1.9	70
	2m to 6m			0.64±0.25					
	7m to 50m			0.50±0.25	1.3	3.1	3.5		
ERJMP4 (2512)	1m	6.40±0.25	3.20±0.25	2.20±0.25	0.90±0.25	3.0	3.4	2.0	100
	2m to 4m			0.64±0.25					
	5m, 6m			1.20±0.25	0.64±0.25	2.0	3.4	4.0	
	7m to 50m			0.76±0.25	0.64±0.25	2.0	3.4	4.0	

## Typical Temperature dependence of electrical resistance

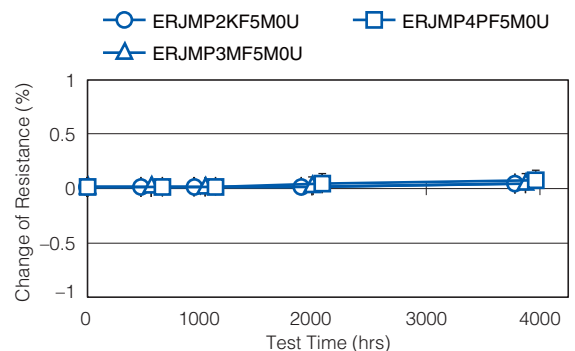


## Long-term stability

● Load Life 70 °C, Rated power



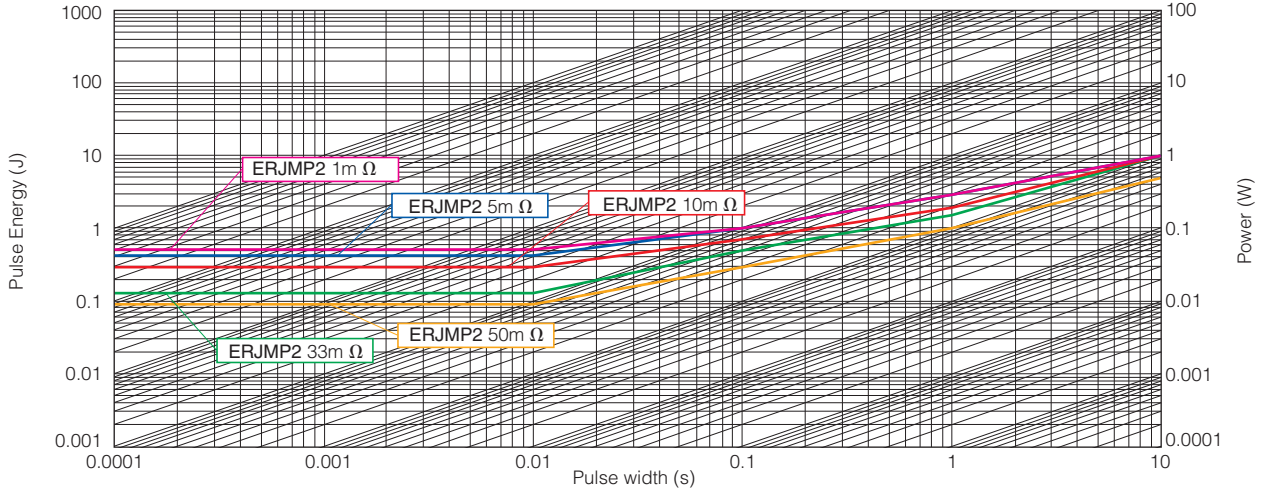
● Thermal Shock -55 °C/155 °C



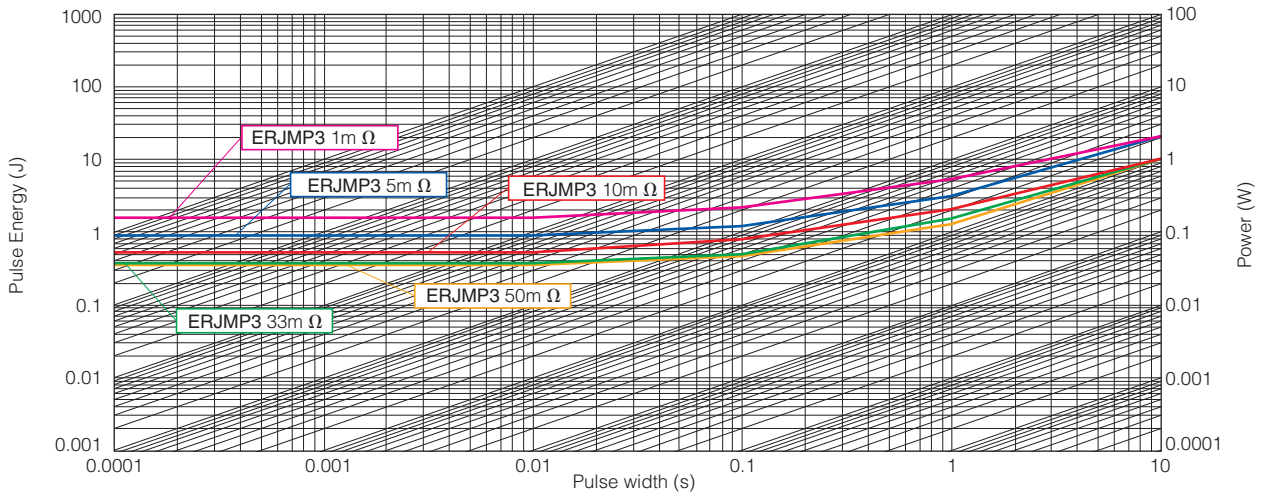
## Maximum pulse energy respectively pulse power for continuous operation

Reference Data  
 Condition : Room Temperature, OFF : 10 s, 1000 cycle, Wave form : Square  
 Change of Resistance =  $\pm 1\%$

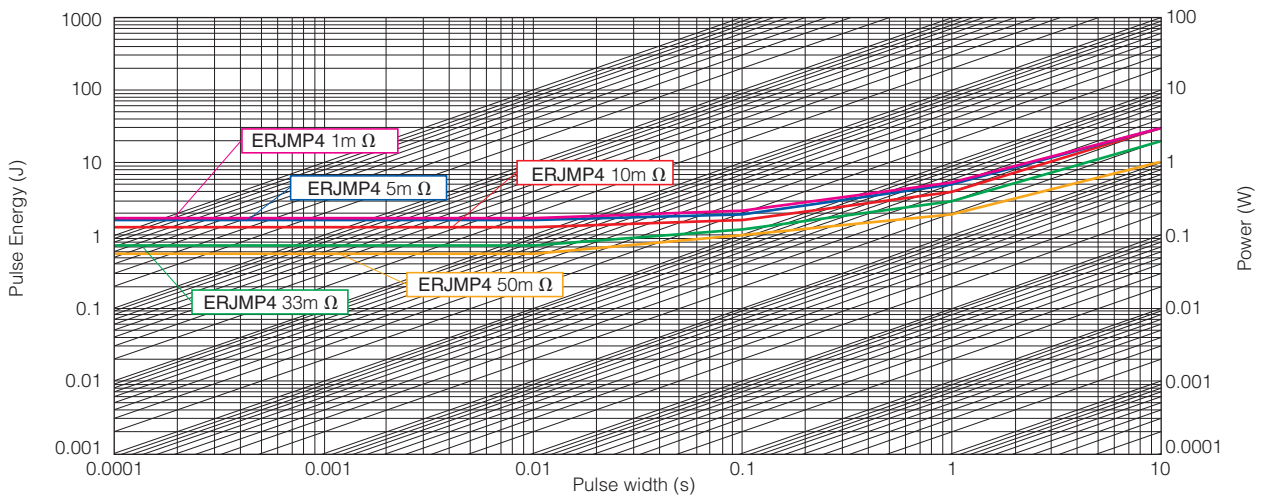
### ● ERJMP2 type



### ● ERJMP3 type



### ● ERJMP4 type

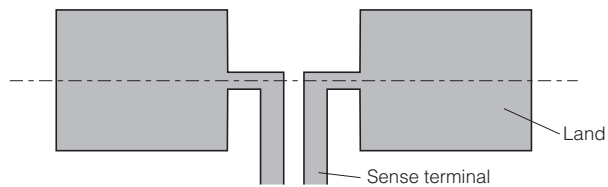


# Panasonic Current Sensing Resistors, Metal Plate Type

## Performance (AEC-Q200)

Test Item	Test Condition	Specification	Typical value
Thermal Shock	-55 °C/155 °C, 1000cycles	±1 %	0.20 %
Overload	3 × Rated Power, 5 sec	±0.5 %	0.10 %
Solderability	245 °C, 3 sec	> 95% coverage	> 95% coverage
Resistance to Solvents	MIL-STD-202 method 215, 2.1a, 2.1d	No damage	No damage
Low Temperature Storage and Operation	-65 °C, 24 h	±0.5 %	0.03 %
Resistance to Soldering Heat	MIL-STD-202 method 210 (260 °C, 10s)	±0.5 %	0.10 %
Moisture Resistance	MIL-STD-202 method 106	±0.5 %	0.10 %
Shock	MIL-STD-202 method 213-A	±0.5 %	0.10 %
Vibration, High Frequency	10 to 2000 (Hz)	±0.5 %	0.05 %
Life	70 °C, Rated Power, 2000 h	±1 %	0.30 %
Storage Life at Elevated Temperature	170 °C, 2000 h	±1 %	0.30 %
High Temperature Characteristics	140 °C, 2000 h	±0.5 %	0.05 %
Frequency Characteristics	Inductance	< 5 nH	< 2 nH

## Sense terminal-Layout



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