



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

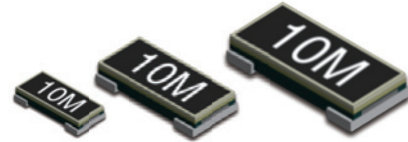
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## Current Sensing Resistors, Metal Plate Type



Type: ERJ MP2, MP3, MP4

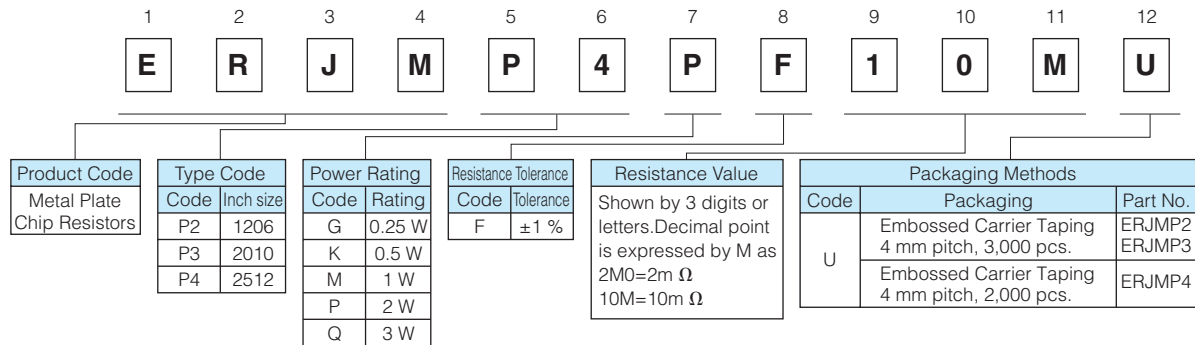
### Features

- 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



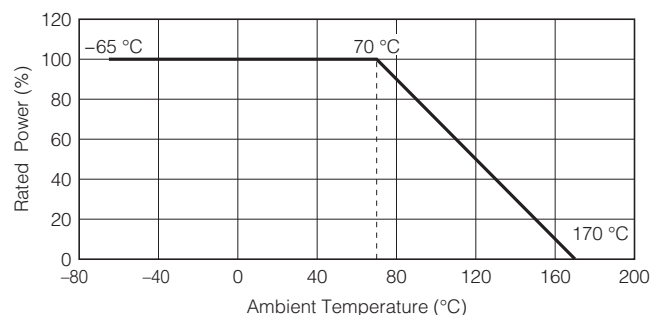
### Ratings

Part No. (inch size)	Power Rating at 70 °C (W)	Resistance Range*1 (mΩ)	Resistance Tolerance (%)	T.C.R. (×10 <sup>-6</sup> /°C)	Category Temperature Range (°C)
ERJMP2G (1206)	0.25	1, 2, 3, 5, 10, 15	F : ±1	±75	-65 to +170
ERJMP2K (1206)	0.5				
ERJMP2M (1206)	1				
ERJMP3K (2010)	0.5	1, 2, 3, 5, 10, 15	F : ±1	±75	-65 to +170
ERJMP3M (2010)	1				
ERJMP3P (2010)	2				
ERJMP4M (2512)	1	1, 2, 3, 5, 10, 15	F : ±1	±75	-65 to +170
ERJMP4P (2512)	2				
ERJMP4Q (2512)	3				

\*1 Please contact us when resistors of irregular series are needed.

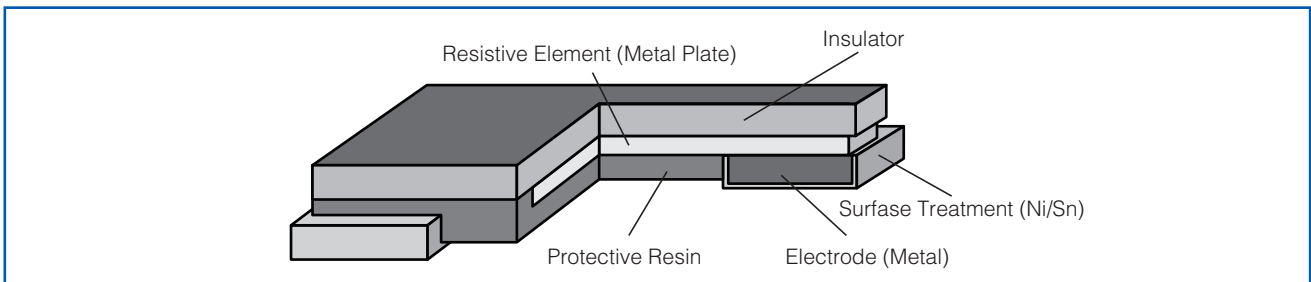
#### Power Derating Curve

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.

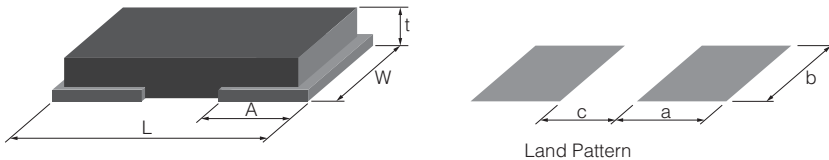


# Panasonic Current Sensing Resistors, Metal Plate Type

## Construction

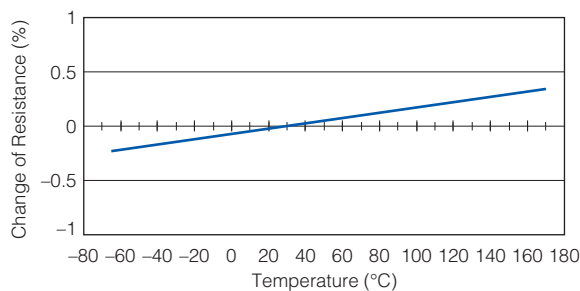


## Dimensions in mm (not to scale), Recommended Land Pattern



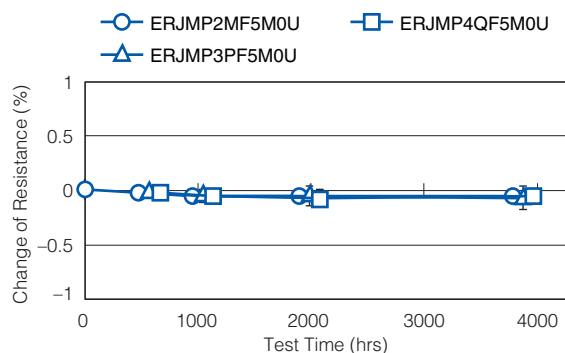
Part No. (inch size)	Rating Code	Resistance Value (mΩ)	Dimension (mm)				Recommended Land Pattern (mm)			Mass (Weight) (g/1000 pcs.)
			L	W	A	t	a	b	c	
ERJMP2 (1206)	G, K, M	1	3.20±0.25	1.60±0.25	1.04±0.25	1.00±0.25	1.5	1.8	1.0	30
		2			0.64±0.25		1.1	1.8	1.8	
		3, 5			0.64±0.25	1.1	1.8	1.8		
		10, 15								
ERJMP3 (2010)	K, M, P	1	5.00±0.25	2.50±0.25	1.47±0.25	0.90±0.25	2.1	3.1	1.9	70
		2, 3, 5			0.64±0.25		1.3	3.1	3.5	
		10, 15			0.64±0.25	1.3	3.1	3.5		
ERJMP4 (2512)	M, P, Q	1	6.40±0.25	3.20±0.25	2.20±0.25	0.90±0.25	3.0	3.4	2.0	100
		2, 3			0.74±0.25					
		5			1.20±0.25					
	M, P	10, 15			0.64±0.25	2.0	3.4	4.0		
					0.83±0.25					

## Typical Temperature dependence of electrical resistance

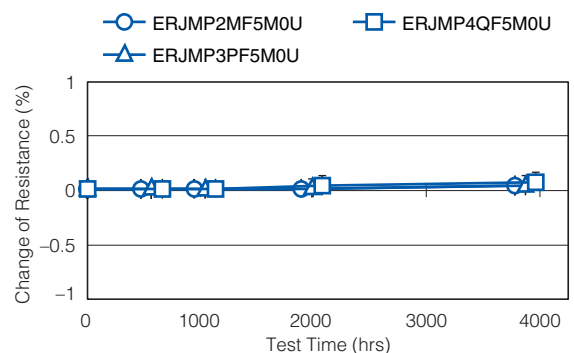


## Long-term stability

● Load Life 70 °C, Rated power



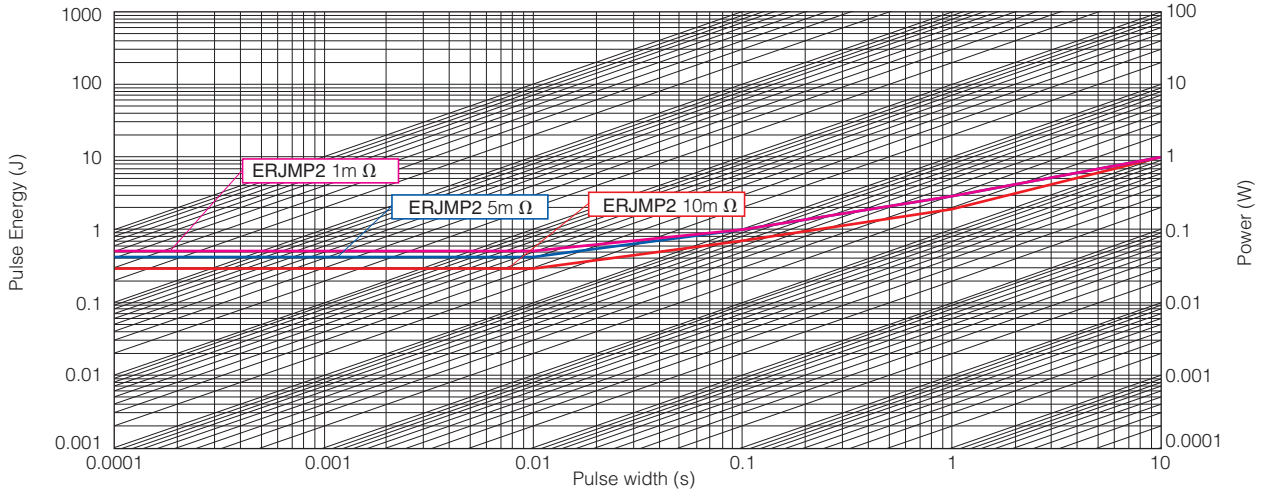
● Thermal Shock -55 °C/155 °C



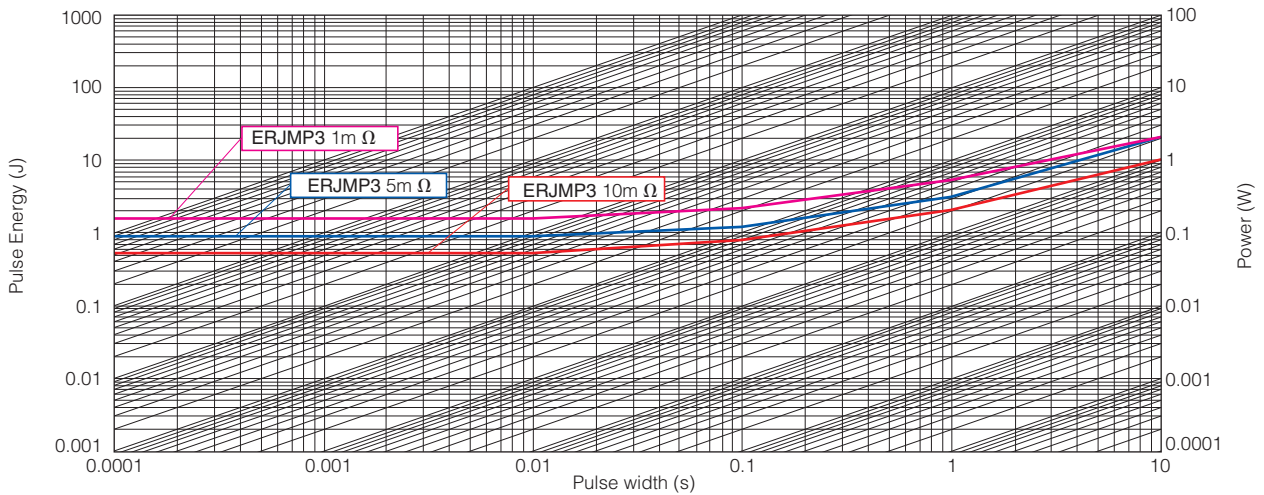
## Maximum pulse energy respectively pulse power for continuous operation

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

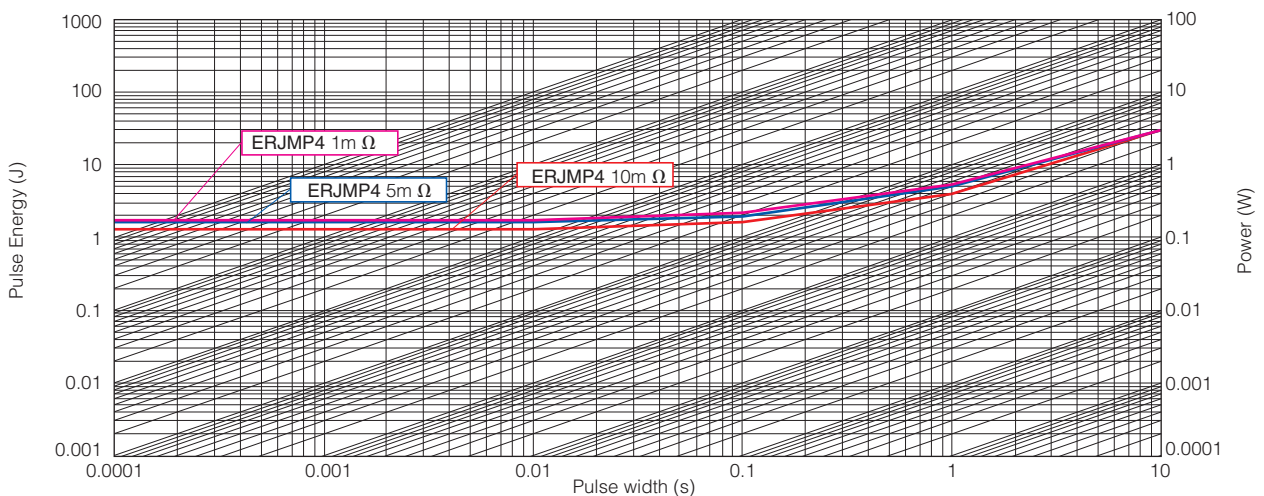
### ● ERJMP2 type



### ● ERJMP3 type



### ● ERJMP4 type



This pulse data is reference characteristic data measured under Panasonic test method and it does not guarantee the performance / characteristics of this product. (The performance / characteristics will change due to the test board, land pattern, amount and type of solder, influence of test equipment and surrounding parts, etc.) Therefore, please use it after sufficiently confirming its reliability under your using conditions.

# 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

