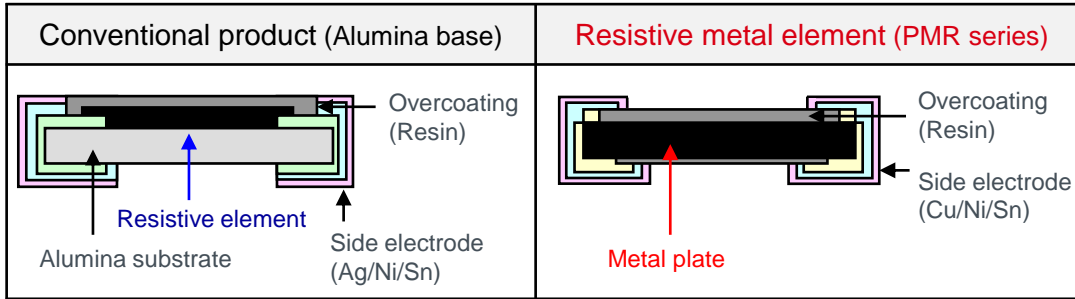


# Ultra low ohmic Metal plate / General type ~PMR series~

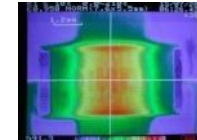
## Structure



## Surface Temperature

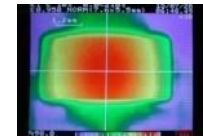
Size: 2512  
Rated power: 1W  
ROHM: PMR  
Competitor: Metal element type

<ROHM>



(88.7°C)

<Competitor>



(98.8°C)

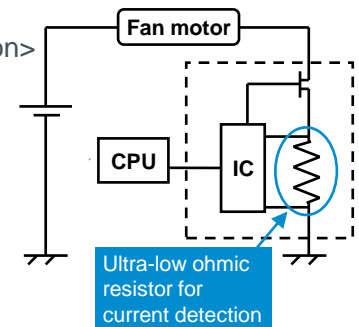
Our design allows unique temperature diffusion.

## Target Specification

Part No.	Size mm(inch)	Rated power	Resistance tolerance	Resistance (mΩ)	Temperature coefficient (ppm/°C)	Operating temperature range	
PMR01	1005 (0402)	0.2W	J (±5%)	10	0~200	-55 to +155°C	
<b>NEW</b> PMR03	1608 (0603)	0.25W	J (±5%) F (±1%)	★5 10	0~150		
PMR10	2012 (0805)	0.5W		2,3,4,5,6, 7,8,9,10	±150		
PMR18	3216 (1206)	1W		1,2,3,4,5 6,7,8,9,10 (★:1,2,2,5)	±100		
PMR25	3225 (1210)	1W		1,2,3,4,5	±100		
PMR50	5025 (2010)	1W		1,2,3,4,5, 6,7,8,9,10 (★:1.2,1.5,2.5)	±100		
PMR100	6432 (2512)	2W ★3W		1,2, (★:1.5)	±150		
				3,4,5,6 7,8,9,10	±100		
				1,2	±150		

## Circuit example

<Overcurrent detection>



## Applications

### Current detection purpose

Laptop PC, HDD, Mobile phones, Small batteries, Chargers, DC/DC converter, and other general Power supplies



# PMR100 series Special Spec

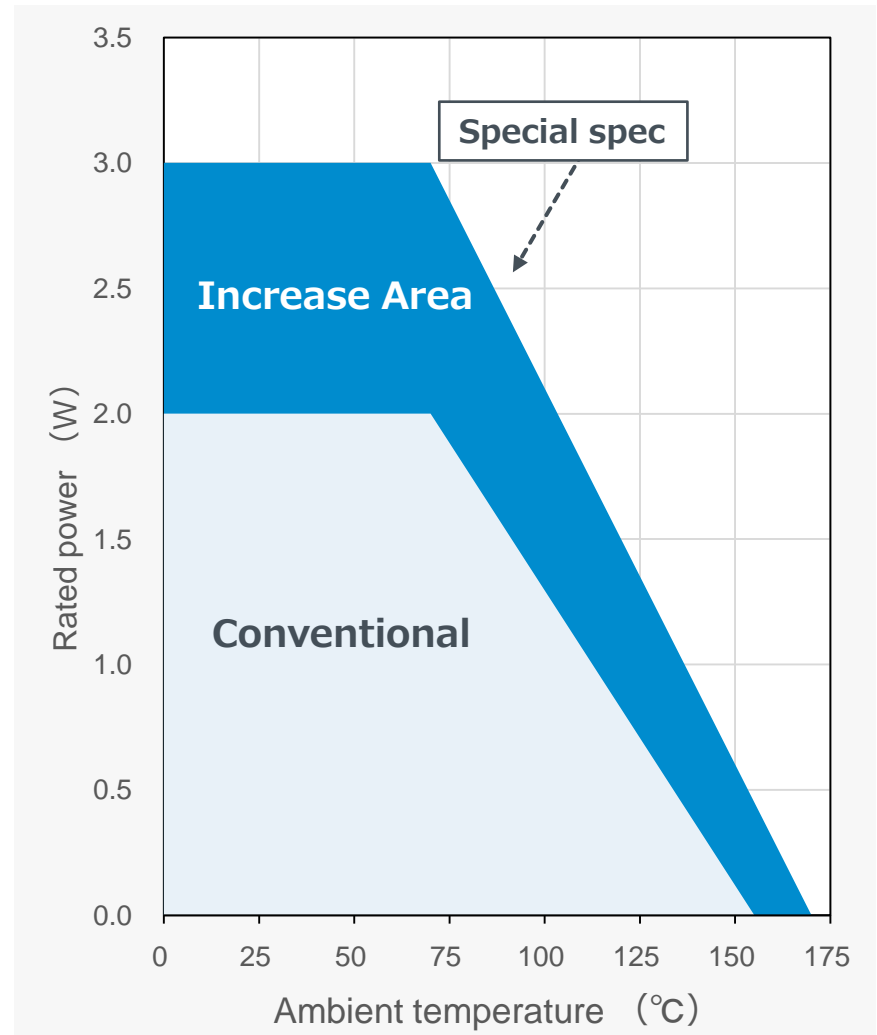
**NEW**

**ROHM**  
SEMICONDUCTOR

## Spec comparison

	Conventional		Special Spec	
Series	PMR100			
Size	6432 (2512)			
Resistance	1mΩ / 2mΩ			
TCR	±150			
Rated Power	2W		<b>3W</b>	
Operating Temperature range	min.	-55°C	min.	-55°C
	Max.	+155°C	Max.	<b>+170°C</b>

## Derating curve



# Ultra low ohmic Metal plate / High Power ~PSR series~



## ■ Features

### • High power 3W to 5W

Rohm's unique welding technology achieves copper electrode and thick metal resistor combine to have good heat dissipation.

### • Ultra low ohmic (min. 0.2mΩ)

We achieve low TCR\* even at ultra-low resistance range by adopting a high-performance alloy material in metal resistor.

### • Convex structure

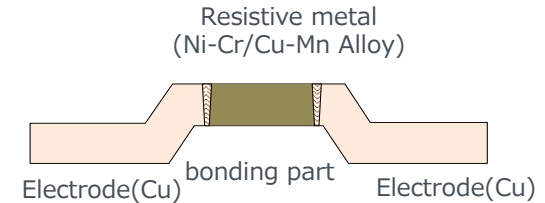
## ■ Specification

Part No.	Size mm(inch)	Rated Power	Tolerance	R.V range (mΩ)	TCR(ppm/°C) +20°C ~+125°C	Operating Temp.
PSR100	6432 (2512)	3W	F (±1%)	0.3, 0.5	±175	-55 to 170°C
				1.0	±100	
				2.0, 3.0	±75	
PSR400	10×5.2 (3921)	4W	F (±1%)	★0.2	±225	
				0.3, 0.5	±175	
				1.0, 2.0, 3.0	±75	
PSR500	15×7.75 (5931)	5W	F (±1%)	★0.1	±250	
				0.2	±225	
				0.3, 0.4, 0.5	±150	
				1.0, 2.0	±75	

★ : Under development \* Design and specification is supposed to change

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## ■ Structure



## ■ Applications

### For Current detection

- Automotive (EPS, HVAC, Battery charger, etc··)
- Renewal Energy (UPS, Power conditioner)
- Industrial (Air conditioner, Refrigerator)



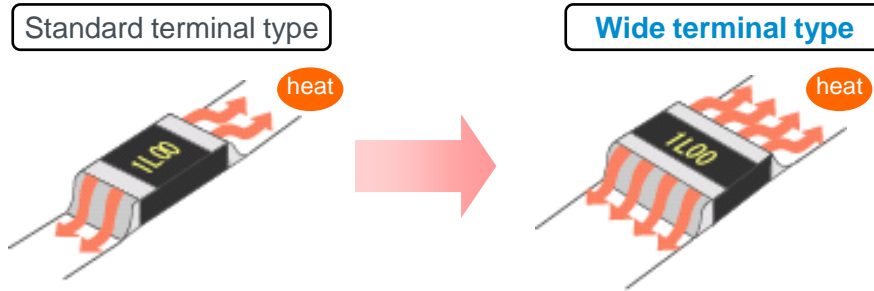
## ■ Dimensions

Part No.	Resistance (mΩ)	Size (mm)		
		L	W	H
PSR400	0.3	10±0.3	5.2±0.3	1.85±0.15
	0.5			1.30±0.15
	1			0.90±0.15
	2			1.10±0.15
PSR500	0.2	15±0.3	7.75±0.3	1.85±0.15
	0.3			1.40±0.15
	0.4			1.15±0.15
	0.5			1.05±0.15
	1			1.30±0.15
	2			0.90±0.15

# Ultra low ohmic Metal plate / Wide terminal type ~PML series~

## ■ Features

Wide terminal configuration for high joint reliability.



- Rohm original trimming-less structure improved current /heat dissipation characteristics.
- Wide terminal structure improved heat dissipation characteristics.

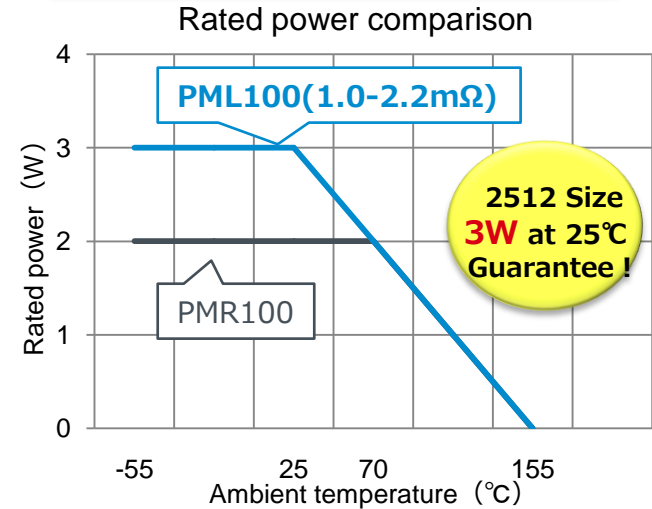
## ■ Specification

Ultra-low resistance range(0.5mΩ-)

Type	Size mm(inch)	Rated power	Tolerance	R.V range (mΩ)	TCR(ppm/°C) +20°C ~+125°C	Operating Temp.
<b>PML10</b>	1220 (0508)	0.66W	J (±5%) G (±2%)	1.0, 1.5, 2.0, 2.5	±200	-55 to +155°C
<b>PML18</b>	1632 (0612)	1W	J (±5%) G (±2%)	0.5, 1.0, 1.5, 2.0, 2.5	±150	
<b>PML50</b>	2550 (1020)	2W	J (±5%)	0.5, 1.0, 1.5, 2.0, 2.2	±200	
<b>PML100</b>	3264 (1225)	2W (3W at 25°C)	J (±5%)	1.0, 1.5, 2.0, 2.2	±100	
		2W		0.5	±150	

★ : Under development \* Design and specification is supposed to change

## ■ Rated power comparison



## ■ Application

Automotive motors, EPS, Laptop PC, Current detection circuit, etc

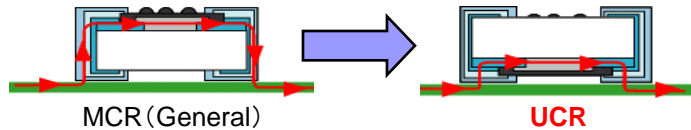


Suitable for the detection of high current

# Low ohmic Thick film / Face down type ~UCR series~

## ■ Features

### ■ Face down type



Resistive element is located at bottom side, which reduces the resistance shift during mounting process.

### ■ High power

ROHM's unique structure achieved tremendous improvement of heat dissipation characteristics.

**0603 size 0.25W**  
**0805 size 0.33W**  
(2011.Oct. rohm)

## ■ Specification

Part No.	Size mm(inch)	Rated power	Resistance tolerance	Resistance (mΩ)	Operating temperature range
<b>NEW</b> UCR006	0603 (0201)	0.1W	J (±5%) F (±1%)	100 ~ 910	-55 to +155°C
UCR01	1005 (0402)	0.125W	J (±5%) F (±1%)	68 ~ 910	
UCR03	1608 (0603)	0.25W	J (±5%) F (±1%)	20 ~ 200	
		0.2W		220 ~ 910	
UCR10	2012 (0805)	0.33W	J (±5%) F (±1%)	11 ~ 100 ★110 ~ 200	
UCR18	3216 (1206)	0.5W (★1.0W)	J (±5%) F (±1%)	11 ~ 39	
		0.5W		43 ~ 100	

★ : Under development \* Design and specification is supposed to change

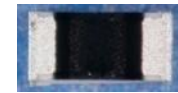
## ◆ Low TCR

Part No.	Size mm(inch)	Resistance range	Temperature coefficient (ppm/°C)
<b>UCR10</b>	<b>2012 (0805)</b>	<b>47mΩ</b>	<b>0 ~ 250</b>
MCR10	2012 (0805)	47mΩ	500±300

## ■ Structure

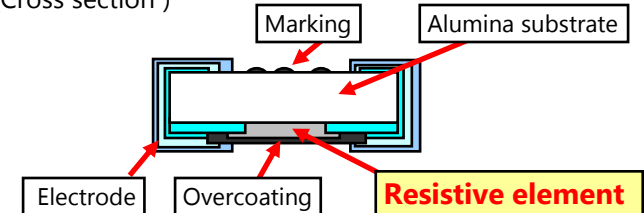


(Top view)



(Bottom view: Mounting view)

(Cross section )



## ■ Application

- Laptop PC
- Mobile phones
- HDD・Portable audio
- Power supply・Motor etc