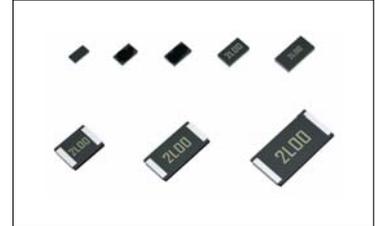


Ultra-low Ohmic Chip Resistors for Current Detection

PMR Series

●Features

- 1) Ultra low-ohmic resistance range (1mΩ ~)
- 2) Improved current detection accuracy by trimming-less structure.
- 3) Special low resistance temperature coefficient.
- 4) The unique chip structure minimizes thermal stress during temperature cycling, resulting in greater reliability.
- 5) ROHM resistors have obtained ISO9001 / ISO / TS16949 certification.
- 6) Corresponds to AEC-Q200. (PMR50 / 100)



●Products List

Part No.	Size		Rated Power (70°C) (W)	Temperature Coefficient (ppm / °C)	Resistance Tolerance (%)	Resistance Range	Operating Temperature Range (°C)
	(mm)	(inch)					
☆ PMR006	0603	0201	0.1	0 to 300	J(±5%)	10mΩ	-55 to +155
PMR01	1005	0402	0.2	0 to 200	J(±5%)	10mΩ	
PMR03	1608	0603	0.25	0 to 150	J(±5%) F(±1%)	10mΩ	
PMR10	2012	0805	0.5	±150	J(±5%) G(±2%) F(±1%)	2,3,4,5,6,7,8,9,10mΩ	
PMR18	3216	1206	1	±100	J(±5%) F(±1%)	1,2,3,4,5,6,7,8,9,10mΩ	
PMR25	3225	1210	1	±100	J(±5%) F(±1%)	1,2,3,4,5mΩ	
PMR50	5025	2010	1	±100	J(±5%) F(±1%)	1,2,3,4,5,6,7,8,9,10mΩ	
PMR100	6432	2512	2	±100 *	J(±5%) F(±1%)	1,2,3,4,5,6,7,8,9,10mΩ	

☆: Under development

* : ± 150ppm / °C (1mΩ, 2mΩ Only)

Design and specifications are subject to change without notice.

Carefully check the specification sheet supplied with the product before using or ordering it.

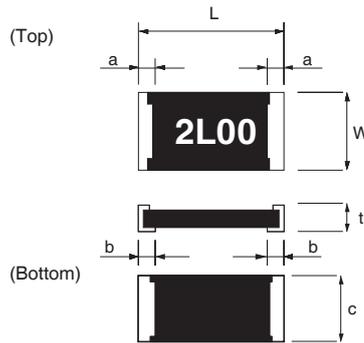
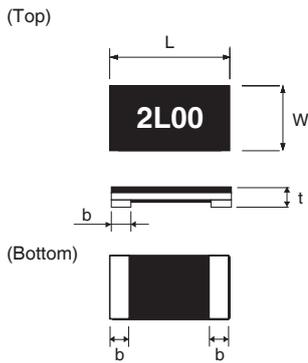
●Part Number Description

P M R	2 5	H Z P	J	V	2 L 0
Part No. PMR (Ultra-low Ohmic Chip Resistors for Current Detection)	Size (mm [inch]) 006 (0603 [0201]) 01 (1005 [0402]) 03 (1608 [0603]) 10 (2012 [0805]) 18 (3216 [1206]) 25 (3225 [1210]) 50 (5025 [2010]) 100 (6432 [2512])	Packaging specifications code Part No. Code Packaging specifications Quantity / Reel PMR006 YZP Paper tape (2mm Pitch) 15,000 PMR01 MZP Paper tape (2mm Pitch) 10,000 PMR03 EZP Paper tape (4mm Pitch) 5,000 PMR10 EZP Paper tape (4mm Pitch) 5,000 PMR18 EZP Paper tape (4mm Pitch) 5,000 PMR25 HZP Embossed tape (4mm Pitch) 2,000 PMR50 HZP Embossed tape (4mm Pitch) 2,000 PMR100 HZP Embossed tape (4mm Pitch) 2,000	Resistance Tolerance F (±1%) G (±2%) J (±5%)	Special part code U : 5 to 10mΩ V : 1 to 4mΩ	Nominal Resistance Resistance code, 3 or 4 digits. Resistance Value(Ω) Resistance Tolerance 1mΩ 1L0 1L00 2mΩ 2L0 2L00 3mΩ 3L0 3L00 4mΩ 4L0 4L00 5mΩ 5L0 5L00 6mΩ 6L0 6L00 7mΩ 7L0 7L00 8mΩ 8L0 8L00 9mΩ 9L0 9L00 10mΩ 10L 10L0

●Chip Resistor Dimensions and Markings

■ PMR006 / 01 / 03 / 10 / 18

■ PMR25 / 50 / 100



<Marking method>

There are four digits used for the calculation number "L" is used for the decimal point of mΩ.

Ex.) 2mΩ=2L00
10mΩ=10L0

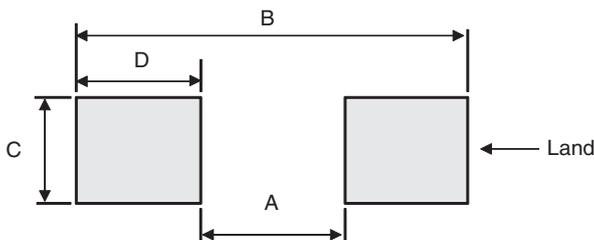
(Unit : mm)

Part No.	(mm)	(inch)	L	W	t	a	b	c	Marking existence
☆PMR006	0603	0201	0.6±0.05	0.3±0.05	0.23±0.05	-	0.15±0.05	-	No
PMR01	1005	0402	1.0±0.05	0.5±0.05	0.25±0.1	-	0.3±0.1	-	No
PMR03	1608	0603	1.6±0.15	0.8±0.15	0.25±0.1	-	0.35±0.15	-	No
PMR10	2012	0805	2.0±0.15	1.2±0.15	0.42 to 0.28*±0.15	-	0.75 to 0.35*±0.25	-	Yes
PMR18	3216	1206	3.2±0.15	1.6±0.15	0.42 to 0.28*±0.15	-	1.2 to 0.5*±0.25	-	Yes
PMR25	3225	1210	3.2±0.2	2.5±0.2	0.52 to 0.32*±0.15	0.5±0.2	1.0 to 0.8*±0.2	1.95±0.2	Yes
PMR50	5025	2010	5.0±0.2	2.5±0.2	0.52 to 0.32*±0.15	0.5±0.2	1.85 to 0.9*±0.2	1.95±0.2	Yes
PMR100	6432	2512	6.4±0.25	3.2±0.25	0.52 to 0.32*±0.15	0.5±0.25	2.3 to 1.1*±0.25	2.65±0.25	Yes

☆ : Under development

* : Each value range varies with the resistance. Please contact a ROHM sales representative for further details.

●Land pattern Example



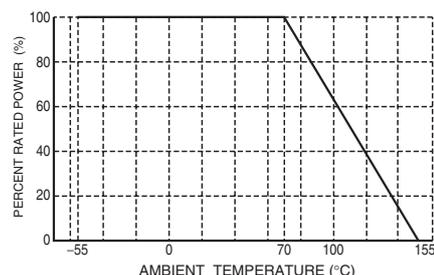
(Unit : mm)

Part No.	A	B	C	D
PMR01	0.5	1.8	0.5	0.65
PMR03	0.5	2.5	0.9	1.0
PMR10	0.8	3.4	1.3	1.3
PMR18	1.0	4.0	1.8	1.5
PMR25	1.0	4.0	2.8	1.5
PMR50	1.8	6.0	2.8	2.1
PMR100	1.2 (1mΩ) 2.4 (2,3,4,6mΩ) 3.0 (5,7,8,9,10mΩ)	6.8 (1mΩ) 7.6 (2 to 10mΩ)	3.4 (1mΩ) 3.8 (2 to 10mΩ)	2.8 (1mΩ) 2.6 (2,3,4,6mΩ) 2.3 (5,7,8,9,10mΩ)

●Derating Curve

When the ambient temperature exceeds 70°C, power dissipation must be adjusted according to the derating curves below.

■ PMR006 / 01 / 03 / 10 / 18 / 25 / 50 / 100



●Characteristics (PMR01 to 100)

Test Items	Guaranteed Value	Test Conditions
	Resistor Type	
Resistance	See P.1	20°C Measuring method : Probes (Under terminations) Measure under terminations by 4 probes.
Variation of resistance with temperature	See P.1	Measurement : +20 / -55 / +20 / +125°C
Overload	± (2.0%+0.0005Ω)	Rated power × 2.5, 2s
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	Rosin·Ethanol : 25% (Weight) Soldering condition : 235±5°C Duration of immersion : 2.0±0.5s
Resistance to soldering heat	± (1.0%+0.0005Ω) No remarkable abnormality on the appearance.	Soldering condition : 260±5°C Duration of immersion : 10±1s
Rapid change of temperature	± (1.0%+0.0005Ω)	Test temp. : -55°C to +125°C 5cycle
Damp heat, steady state	± (3.0%+0.0005Ω)	40°C, 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.0005Ω)	70°C Rated power 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	± (3.0%+0.0005Ω)	155°C Test time : 1,000h to 1,048h
Resistance to solvent	± (0.5%+0.0005Ω)	23±5°C, Immersion cleaning, 5±0.5min Solvent : 2-propanol
Bend strength of the end face plating	Without mechanical damage such as breaks.	–

Compliance Standard(s) : IEC60115-8
JISC 5201-8

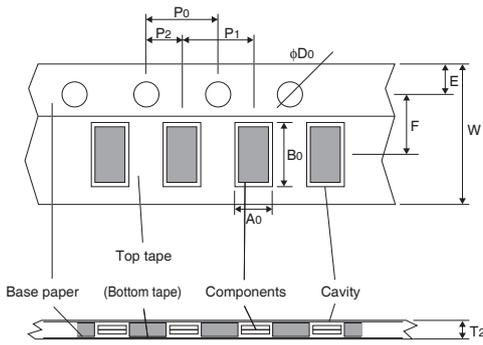
●Technical data

Parameter	Unit	PMR01	PMR03	PMR10	PMR18	PMR25	PMR50	PMR100
Failure rate	Fit	–	0.0577	1.2968	5.5531	2.8058	3.2292	0.1772
Weight	mg/pc	0.829	2.12	7.08 (2mΩ) 6.77 (3 to 5mΩ) 4.61 (6 to 8mΩ) 3.73 (9 to 10mΩ)	15.1 (1 to 2mΩ) 14.3 (3 to 6mΩ) 9.77 (7 to 8mΩ) 8.01 (9 to 10mΩ)	32.5 (1mΩ) 28.1 (2 to 3mΩ) 16.9 (4 to 5mΩ)	45.2 (1 to 2mΩ) 40.9 (3 to 5mΩ) 25.0 (6 to 10mΩ)	73.8 (1 to 2mΩ) 66.9 (3 to 5mΩ) 40.3 (6 to 10mΩ)

●Tape Dimensions

■Paper Tape

(Unit : mm)

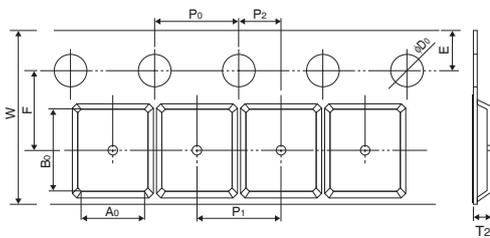


Part No.	W	F	E	A0	B0
PMR01	8.0±0.3	3.5±0.05	1.75±0.1	0.7±0.1	1.2±0.1
PMR03	8.0±0.3	3.5±0.05	1.75±0.1	0.95±0.1	1.75±0.1
PMR10	8.0±0.3	3.5±0.05	1.75±0.1	1.65 ^{+0.2} _{-0.1}	2.4 ^{+0.2} _{-0.1}
PMR18	8.0±0.3	3.5±0.05	1.75±0.1	1.95 ^{+0.1} _{-0.05}	3.5 ^{+0.15} _{-0.05}

Part No.	D0	P0	P1	P2	T2
PMR01	φ1.5 ^{+0.1} ₀	4.0±0.1	2.0±0.05	2.0±0.05	Max 1.1
PMR03	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PMR10	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PMR18	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

■Embossed Tape

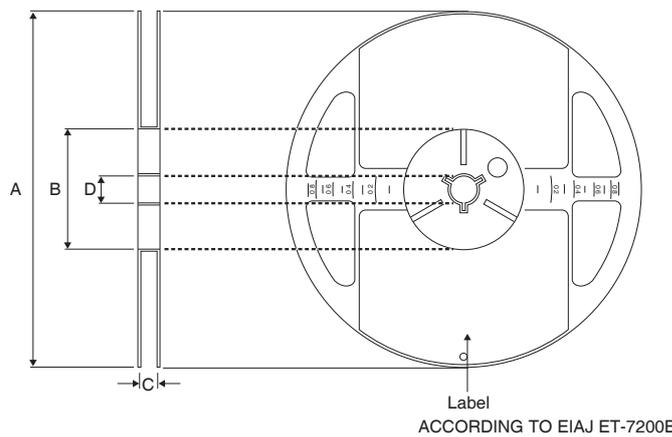
(Unit : mm)



Part No.	W	F	E	A0	B0
PMR25	8.0±0.3	3.5±0.05	1.75±0.1	3.0±0.1	3.5±0.1
PMR50	12.0±0.3	5.5±0.05	1.75±0.1	2.9±0.2	5.3±0.2
PMR100	12.0±0.3	5.5±0.05	1.75±0.1	3.5±0.2	6.7±0.2

Part No.	D0	P0	P1	P2	T2
PMR25	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PMR50	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PMR100	φ1.5 ^{+0.1} ₀	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

●Reel Dimensions



(Unit : mm)

Part No.	A	B	C	D
☆ PMR006	φ180 ⁰ _{-1.5}	φ60 ^{+1.0} ₀	9 ^{+1.0} ₀	φ13±0.2
PMR01				
PMR03				
PMR10				
PMR18				
PMR25				
PMR50			13 ^{+1.0} ₀	
PMR100				

☆ : Under development

Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.



Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

<http://www.rohm.com/contact/>