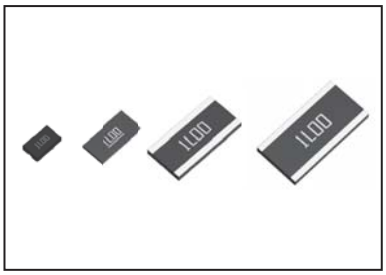
Ultra-low Ohmic Chip Resistors for Current Detection <Wide Terminal type>

PML Series

●Features

1) Ultra low-ohmic resistance range.
2) Wide terminal configuration for high joint reliability.
3) Improved current detection accuracy by trimming-less structure.
4) ROHM resistors have obtained ISO9001 / ISO / TS16949 certification.



●Products List

Part No.	Size (mm)	Size (inch)	Rated Power (70°C) (W)	Temperature Coefficient (ppm / °C)	Resistance Tolerance (%)	Resistance Range (mΩ)	Operating Temperature Range (°C)
PML10	2012	0805	0.66	±200	J(±5%)	1.0, 1.5, 2.0, 2.5	–55 to +155
					G(±2%)		
PML18	3216	1206	1	±150	J(±5%)	0.5, 1.0, 1.5, 2.0, 2.5	
					G(±2%)		
☆**PML50**	5025	2010	1.5 (2W at 25°C)	±200	J(±5%)	0.5, 1.0, 1.5, 2.0, 2.2	
PML100	6432	2512	2 (3W at 25°C)	±100	J(±5%)	1.0, 1.5, 2.0, 2.2	
			2	±150		0.5	

☆: Under development
∗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 L | 1 0 | E Z P | J | V | 1 L 0

Part No.
PML
(Ultra-low Ohmic Chip Resistors for Current Detection / Wide terminal type)

Size (mm [inch])
10 (2012 [0805])
18 (3216 [1206])
50 (5025 [2010])
100 (6432 [2512])

Packaging Specifications Code

Part No.	Code	Packaging specifications	Quantity / Reel
PML10	EZP	Paper tape (4mm Pitch)	5,000
PML18	EZP	Paper tape (4mm Pitch)	5,000
PML50	HZP	Embossed tape (4mm Pitch)	2,000
PML100	HZP	Embossed tape (4mm Pitch)	2,000

Resistance Tolerance
G (±2%)
J (±5%)

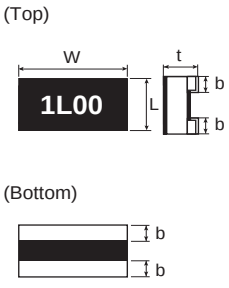
Special part code

Nominal Resistance
Resistance code, 3 or 4 digits.

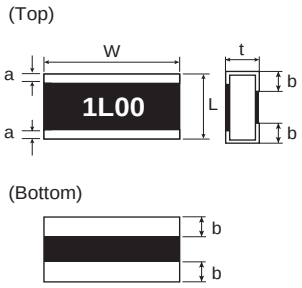
Resistance Value(Ω)	Resistance Tolerance J	Resistance Tolerance G
0.5mΩ	0L5	0L50
1mΩ	1L0	1L00
1.5mΩ	1L5	1L50
2mΩ	2L0	2L00
2.2mΩ	2L2	–
2.5mΩ	2L5	2L50

●Chip Resistor Dimensions and Markings

■ **PML10 / 18**



■ **PML50 / 100**



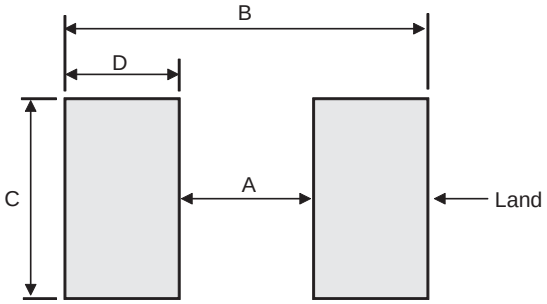
<Marking method>
There are four digits used for the calculation number "L" is used for the decimal point of mΩ.
Ex.) 2mΩ = 2L00
10mΩ = 10L0

(Unit : mm)

Part No.	(mm)	(inch)	L	W	t	a	b	Marking existence
PML10	2102	0805	1.2±0.15	2.0±0.15	0.42±0.15	–	0.45 to 0.3*±0.2	Yes
PML18	3216	1206	1.6±0.15	3.2±0.15	0.42 to 0.28*±0.15	–	0.55 to 0.3*±0.2	Yes
☆**PML50**	5025	2010	2.5±0.2	5.0±0.2	0.52 to 0.32*±0.15	0.4±0.2	1.0 to 0.5*±0.2	Yes
PML100	6432	2512	3.2±0.25	6.4±0.25	0.5 to 0.36*±0.15	0.45±0.25	0.9 to 0.7*±0.25	Yes

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

●Land pattern Example



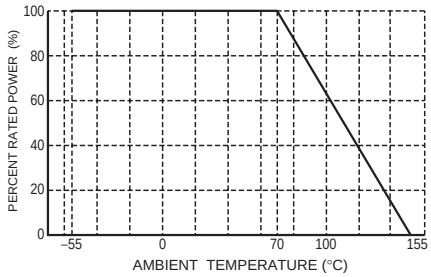
(Unit : mm)

Dimensions / Part No.	A	B	C	D
PML10	0.14	1.6	2.0	0.73
PML18	0.325	2.675	3.2	1.175
PML100	0.8	4.2	6.4	1.7

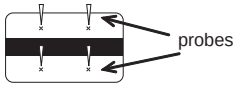
●Derating Curve

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

■ PML10 / 18 / 50 / 100



●Characteristics (PML10 / 18 / 100)

Test Items	Guaranteed Value Resistor Type	Test Conditions
Resistance	See P.1	20°C Measuring method : Measure under terminations by 4 probes. (Under terminations)  probes
Variation of resistance with temperature	See P.1	Measurement : +20 / –55 / +20 / +125°C
Overload	± (2.0%+0.0001Ω)	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%+0.0001Ω) No remarkable abnormality on the appearance.	Soldering condition : 260±5°C Duration of immersion : 10±1s
Rapid change of temperature	± (1.0%+0.0001Ω)	Test temp. : –55°C to +125°C 5cycle
Damp heat, steady state	± (3.0%+0.0001Ω)	40°C, 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.0001Ω)	70°C Rated power 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	± (3.0%+0.0001Ω)	155°C Test time : 1,000h to 1,048h
Resistance to solvent	± (0.5%+0.0001Ω)	23±5°C, Immersion cleaning, 5±0.5min Solvent : 2–propanol
Bend strength of the end face plating	Without mechanical damage such as breaks.	–

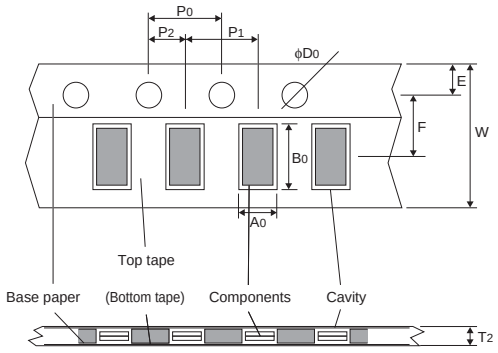
Compliance Standard(s) : IEC60115–8
JISC 5201–8

●Chip weight (typical value)

Parameter	Unit	PML10	PML18	PML100
Weight	mg/pc	6.81 (1mΩ) 4.80 (1.5mΩ) 4.96 (2mΩ) 4.23 (2.5mΩ)	15.72 (0.5, 1mΩ) 11.18 (1.5mΩ) 9.46 (2mΩ) 8.08 (2.5mΩ)	72.81 (0.5.mΩ) 69.80 (1mΩ) 50.61 (1.5mΩ) 45.23 (2, 2.2mΩ)

●Tape Dimensions

■ Paper Tape

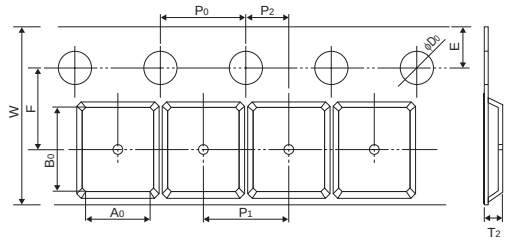


(Unit : mm)

Part No.	W	F	E	A0	B0
PML10	8.0±0.3	3.5±0.05	1.75±0.1	$1.65^{+0.2}_{-0.1}$	$2.4^{+0.2}_{-0.1}$
PML18	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
PML10	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PML18	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

■ Embossed Tape



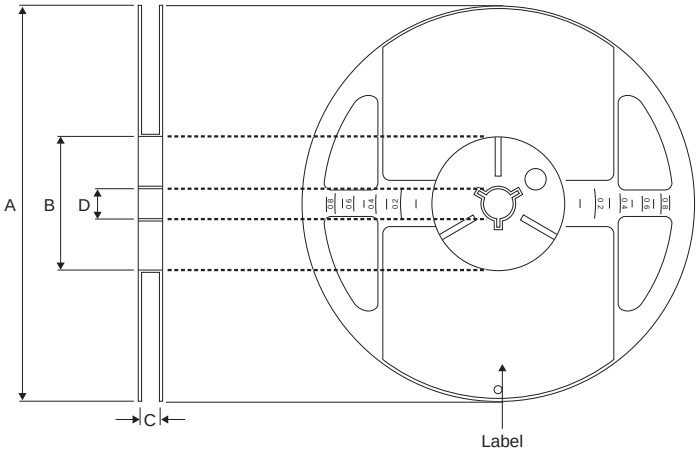
(Unit : mm)

Part No.	W	F	E	A0	B0
☆**PML50**	12.0±0.3	5.5±0.05	1.75±0.1	2.9±0.2	5.3±0.2
PML100	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
☆**PML50**	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1
PML100	$\phi 1.5^{+0.1}_{0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max 1.1

☆: Under development

●Reel Dimensions



ACCORDING TO EIAJ ET-7200B

(Unit : mm)

Part No.	A	B	C	D
PML10	$\phi 180^{0}_{-1.5}$	$\phi 60^{+1.0}_{0}$	$9^{+1.0}_{0}$	ϕ13±0.2
PML18				
☆**PML50**			$13^{+1.0}_{0}$	
PML100				

☆: Under development

Notes

1) The information contained herein is subject to change without notice.

2) Before you use our Products, please contact our sales representative and verify the latest specifications :

3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
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4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

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6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.

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

8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.

9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.

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