Fixed Thick Film Low Ohmic Chip Resistors For Current Detection

UCR03 (1608 size : 1 / 4W•1 / 5W)

●Features

1) Superior rated power.
2) Stable, low resistance guaranteed regardless of the surrounding environment.
3) Thick film resistive elements were used to create this lineup of ultra-low resistance products ranging from 20mΩ to 910mΩ.
4) Chip resistors ideal for current detection.
5) ROHM resistors have approved ISO9001- / ISO/TS 16949- certification.

●Ratings

Design and specifications are subject to change without notice. Carefully check the specification sheet before using or ordering it.

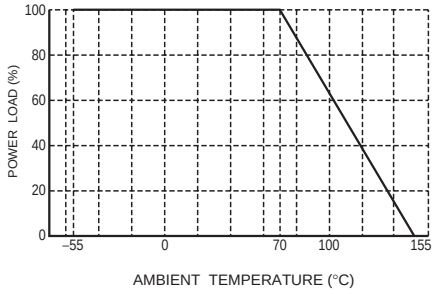
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.25W (1 / 4W) (0.02W ≤ R ≤ 0.20W) 0.2W (1 / 5W) (0.20W < R ≤ 0.91W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. $E=\sqrt{P\times R}$ $I=\sqrt{P/R}$ E: Rated voltage (V) I : Rated current (A) P: Rated power (W) R: Nominal resistance (Ω)	
Nominal resistance	See Table 1.	
Operating temperature		–55°C to + 155°C

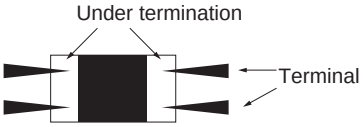
Table 1

Resistance range (Ω)	Resistance tolerance	Special specification	Resistance temperature coefficient (ppm/°C)
0.020 to 0.047 (E24)	J (±5%)	S	0 to 250
0.051 to 0.091 (E24)	F (±1%)		0 to 200
0.1 to 0.91(E24)		L	0 to 150

●Before using components in circuits where they will be exposed to transients such as pulse loads (short–duration, high– level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady state voltage that is greater than its rated voltage.

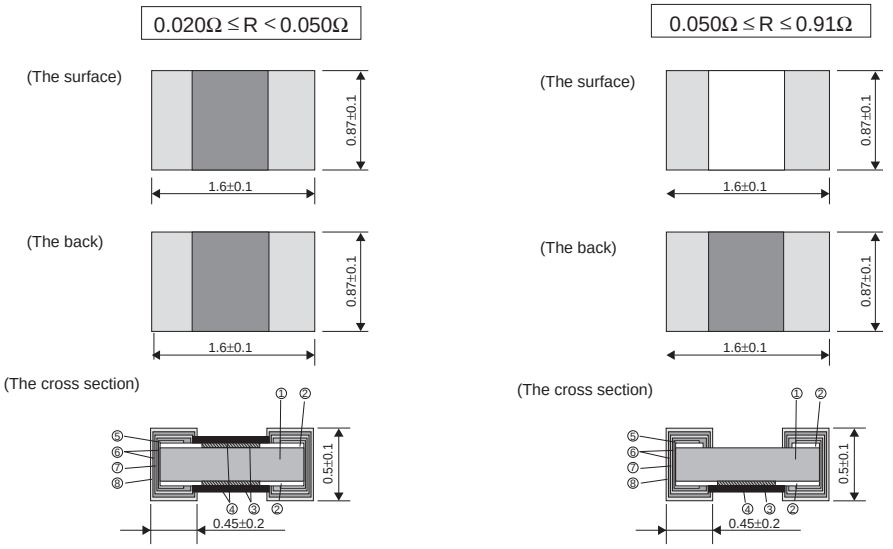
© 2010 ROHM Co., Ltd. All rights reserved.

●Characteristics

Item	Guaranteed value Resistor type	Test conditions (JIS C 5201-1)
Resistance	F : ±1% J : ±5%	JIS C 5201-1 4.5 Measuring method : Measure under termination 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : –55 / +25 / +125°C
Overload	±2.0%	JIS C 5201-1 4.13 Rated voltage (current) × 2.5, 2s.
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	JIS C 5201-1 4.17 Rosin·Ethanol (25%WT) Soldering condition : 235±5°C Duration of immersion : 2.0±0.5s.
Resistance to soldering heat	±1.0% No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	±1.0%	JIS C 5201-1 4.19 Test temp. : –55°C to +125°C 5cyc
Damp heat, steady state	±3.0%	JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h to 1,048h
Endurance at 70°C	±3.0%	JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h
Endurance	±3.0%	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Resistance to solvent	±0.5%	JIS C 5201-1 4.29 23±5°C Solvent : 2-propanol
Bend strength of the end face plating	Without open.	JIS C 5201-1 4.33

© 2010 ROHM Co., Ltd. All rights reserved.

●**Dimensions** (Unit : mm)



No.	Material
①	Alumina substrate
②	Silver thick film electrode
③	Resistive element
④	Overcoating
⑤	Nickel-chrome electrode
⑥	Nickel electrode
⑦	Copper electrode
⑧	Sn electrode

© 2010 ROHM Co., Ltd. All rights reserved.

●Part No. Explanation

U	C	R	0	3	E	W	P	J	S	□	□	□	□

Part No.

Resistance tolerance

F	±1%
J	±5%

Special part number

S	0.020 to 0.091Ω
L	0.1Ω to

Nominal resistance

Resistance code, 3 or 4 digits.

Resistance tolerance		Resistance code
FL, FS, JS	:	4 digits
JL	:	3 digits

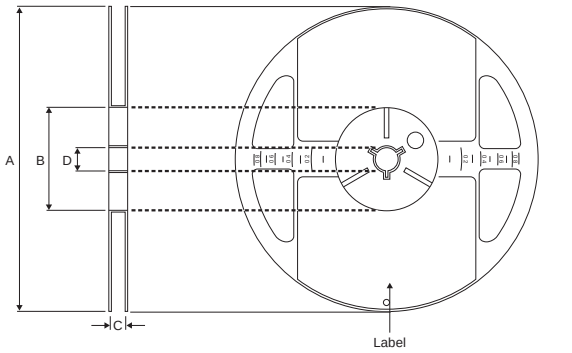
Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit(pcs)	Remarks
		J(±5%)	F(±1%)				
UCR03	EWP	◎	◎	Paper tape (4mm Pitch)	ϕ180mm (7in.)	5,000	0.020 to 0.047Ω
	EVP	◎	◎	Paper tape (4mm Pitch)	ϕ180mm (7in.)	5,000	0.051 to 0.091Ω

Reel (ϕ180mm) : Compatible with JEITA standard "EIAJ ET-7200B"
◎ : Standard product

●Packaging

Reel

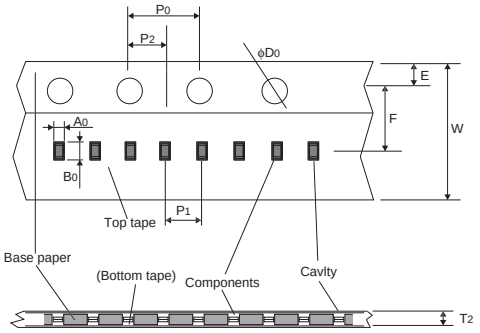


EIAJ ET-7200B compliant

(Unit: mm)

A	B	C	D
$\phi 180^{\ 0}_{-1.5}$	$\phi 60^{+1}_{\ 0}$	$9^{+1.0}_{\ 0}$	ϕ13±0.2

Taping



(Unit: mm)

W	F	E	A0	B0
8.0±0.3	3.5±0.05	1.75±0.1	1.1±0.1	1.9±0.1
D0	P0	P1	P2	T2
$\phi 1.5^{+0.1}_{\ 0}$	4.0±0.1	4.0±0.05	2.0±0.05	Max. 1.1

© 2010 ROHM Co., Ltd. All rights reserved.

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.

ROHM SEMICONDUCTOR

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/

© 2010 ROHM Co., Ltd. All rights reserved.