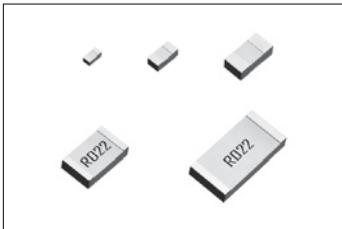


●Features

- Very-low ohmic resistance from $11m\Omega$ is in lineup by thick-film resistive element.
- Resistive element is located at bottom side, which reduces the resistance shift during mounting process.
- ROHM's unique structure achieved improvement of heat.
- ROHM resistors have obtained ISO9001 / ISO / TS16949 certification.



●Products List

Part No.	Size		Rated Power (70°C) (W)	Resistance Tolerance (%)	Temperature Coefficient (ppm / °C)	Resistance Range	Series	Operating Temperature Range (°C)	Automotive Grade Available (AEC-Q200)
	(mm)	(inch)							
UCR006	0603	0201	0.1	J($\pm 5\%$) F($\pm 1\%$)	0 to 300	0.1Ω to 0.91Ω			—
UCR01	1005	0402	0.125	J($\pm 5\%$) F($\pm 1\%$)	0 to 300	0.068Ω to 0.091Ω	E24	-55 to +155	Yes
					0 to 250	0.1Ω to 0.2Ω			
					0 to 200	0.22Ω to 0.91Ω			
					0 to 250	0.020Ω to 0.047Ω			
UCR03	1608	0603	0.25	J($\pm 5\%$) F($\pm 1\%$)	0 to 200	0.051Ω to 0.091Ω	E24	-55 to +155	Yes* ¹
					0 to 150	0.1Ω to 0.2Ω			
					0 to 150	0.22Ω to 0.91Ω			
			0.2	J($\pm 5\%$) F($\pm 1\%$)	250 ± 200	0.011Ω to 0.018Ω			
UCR10	2012	0805	0.33	J($\pm 5\%$)	0 to 250	0.020Ω to 0.047Ω	E24	-55 to +155	Yes
					0 to 150	0.051Ω to 0.1Ω			
					0 to 250	0.020Ω to 0.047Ω			
					0 to 150	0.051Ω to 0.1Ω			
UCR18	3216	1206	0.5	J($\pm 5\%$) F($\pm 1\%$)	0 to 350	0.011Ω to 0.018Ω	E24	-55 to +155	Yes
					0 to 200	0.020Ω to 0.039Ω			
					0 to 150	0.043Ω to 0.1Ω			

*Design and specifications are subject to change without notice.

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

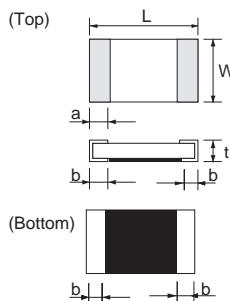
*1 : Limited to $100m\Omega$ and higher

●Part Number Description

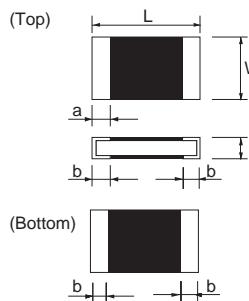
U	C	R	1	0	E	V	H	J	L	R	1	0
Part No.	Size (mm [inch])				Packaging Specifications Code			Resistance Tolerance	Special part code	Nominal Resistance		
UCR (Thick Film Low Ohmic Chip Resistors)	006 (0603 [0201]) 01 (1005 [0402]) 03 (1608 [0603]) 10 (2012 [0805]) 18 (3216 [1206])				Part No. YVP UCR006	Code Paper tape (4mm Pitch) UCR006	Packaging specifications 15,000 Quantity / Reel	F ($\pm 1\%$) J ($\pm 5\%$)	S : 0.011 to 0.091Ω L : 0.1Ω to	Resistance code, 3 or 4 digits.		
					MVP UCR01	Code Paper tape (2mm Pitch) UCR01	Packaging specifications 10,000 Quantity / Reel			Resistance tolerance + Special code		
					EWP UCR03 (20 to 47mΩ) EVP (51 to 910mΩ)	Code Paper tape (4mm Pitch) UCR03	Packaging specifications 5,000 Quantity / Reel			FS,FL,JS : 4 digits JL : 3 digits		
					EVH UCR10	Code Paper tape (4mm Pitch) UCR10	Packaging specifications 5,000 Quantity / Reel					
					EVH UCR18	Code Paper tape (4mm Pitch) UCR18	Packaging specifications 5,000 Quantity / Reel					

● Chip Resistor Dimensions and Markings

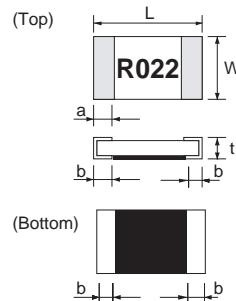
■ UCR006/01
■ UCR03 (50mΩ ≤ R ≤ 910mΩ)



■ UCR03 (20mΩ ≤ R < 50mΩ)



■ UCR10 / 18



<Marking method>

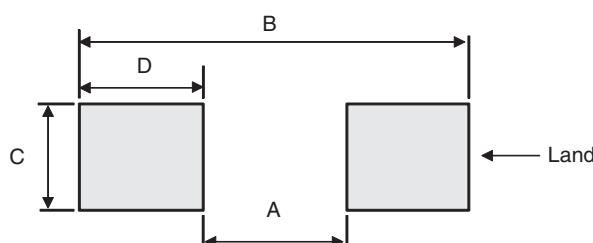
There are three or four digits used for the calculation number according to IEC code and "R" is used for the decimal point.

Ex.) 4digits.....0.1Ω=R100

3digits.....0.1Ω=R10

Part No.	(mm)	(inch)	L	W	t	a	b	Marking existence
UCR006	0603	0201	0.62±0.05	0.32±0.05	0.24±0.05	0.18±0.1	0.22±0.1	No
UCR01	1005	0402	1.0±0.1	0.55±0.1	0.37±0.05	0.28±0.1	0.34±0.1	No
UCR03	1608	0603	1.6±0.1	0.87±0.1	0.5±0.1	0.45±0.2	0.45±0.2	No
UCR10	2012	0805	2.0±0.1	1.25±0.1	0.55±0.1	0.24±0.2	0.5±0.2	Yes
UCR18	3216	1206	3.2±0.15	1.6±0.15	0.55±0.1	0.3±0.2	0.9±0.25	Yes

● Land pattern Example

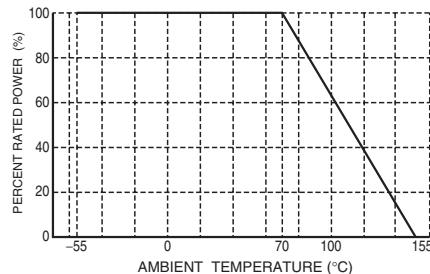


Dimensions Part No.	A	B	C	D
UCR006	0.3	1.2	0.5	0.45
UCR01	0.5	1.8	0.5	0.65
UCR03	0.5	2.5	0.9	1.0
UCR10	0.8	3.4	1.3	1.3
UCR18	1.4	4.0	1.8	1.3

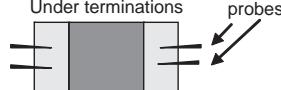
●Derating Curve

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

■ UCR006 / 01 / 03 / 10 / 18



●Characteristics (UCR01 / 03 / 10 / 18)

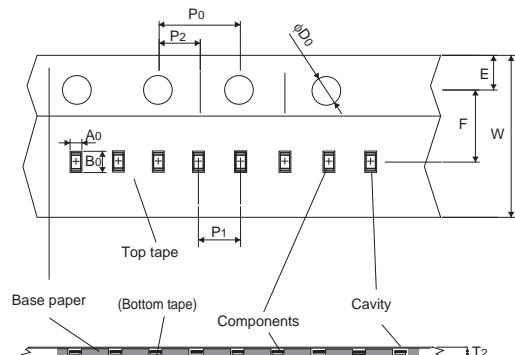
Test Items	Guaranteed Value	Test Conditions
	Resistor Type	
Resistance	See P.1	20°C Measuring method : Measure under terminations by 4 probes. 
Variation of resistance with temperature	See P.1	Measurement : +20 / -55 / +20 / +125°C
Overload	± (2.0%+0.005Ω)	Rated voltage (current) ×2.5, 2s
Solderability	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%+0.005Ω) No remarkable abnormality on the appearance.	Soldering condition : 260±5°C Duration of immersion : 10±1s
Rapid change of temperature	± (1.0%+0.005Ω)	Test temp. : -55°C to +125°C 5cycle
Damp heat, steady state	± (3.0%+0.005Ω)	40°C, 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.005Ω)	70°C Rated voltage (current) 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	± (3.0%+0.005Ω)	155°C Test time : 1,000h to 1,048h
Resistance to solvent	± (0.5%+0.005Ω)	23±5°C, Immersion cleaning, 5±0.5min Solvent : 2-propanol
Bend strength of the end face plating	Without mechanical damage such as breaks.	–

*Please contact us for guarantee of the test conditions other than those described above.

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

● Tape Dimensions

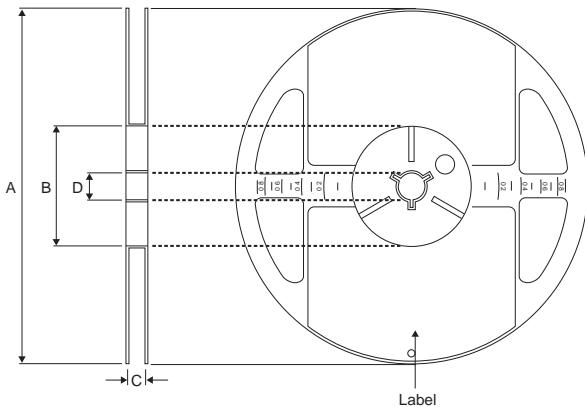
■ Paper Tape



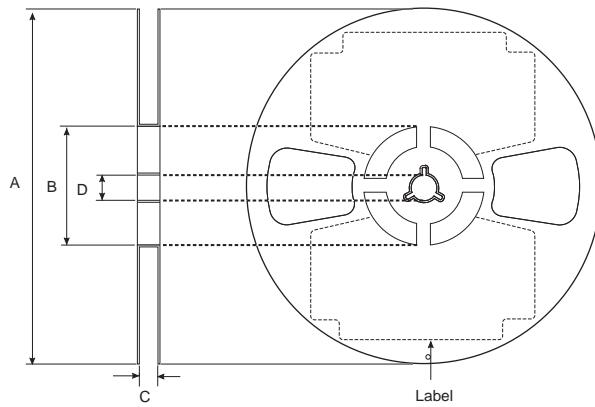
Part No.	W	F	E	A ₀	B ₀
UCR06	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	0.39 ± 0.1	0.7 ± 0.1
UCR01	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	0.7 ± 0.1	1.2 ± 0.1
UCR03	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	1.1 ± 0.1	1.9 ± 0.1
UCR10	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	$1.65^{+0.2}_{-0.1}$	$2.4^{+0.2}_{-0.1}$
UCR18	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	$1.95^{+0.1}_{-0.05}$	$3.5^{+0.15}_{-0.05}$

Part No.	D ₀	P ₀	P ₁	P ₂	T ₂
UCR06	$\phi 1.5^{+0.1}_0$	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	Max 0.46
UCR01	$\phi 1.5^{+0.1}_0$	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	Max 1.1
UCR03	$\phi 1.5^{+0.1}_0$	4.0 ± 0.1	4.0 ± 0.05	2.0 ± 0.05	Max 1.1
UCR10	$\phi 1.5^{+0.1}_0$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max 1.1
UCR18	$\phi 1.5^{+0.1}_0$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max 1.1

● Reel Dimensions



ACCORDING TO EIAJ ET-7200B



ACCORDING TO EIAJ ET-7200B (RRV)

(Unit : mm)

Part No.	A	B	C	D
UCR06				
UCR01				
UCR03				
UCR10				
UCR18				

Notice

Precaution on using ROHM Products

1. If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment ^(Note 1), aircraft/spacecraft, nuclear power controllers, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with the ROHM sales representative in advance. Unless otherwise agreed in writing by ROHM in advance, ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of any ROHM's Products for Specific Applications.

(Note1) Medical Equipment Classification of the Specific Applications

JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	
CLASS IV		CLASS III	CLASS III

2. ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
 - [a] Installation of protection circuits or other protective devices to improve system safety
 - [b] Installation of redundant circuits to reduce the impact of single or multiple circuit failure
3. Our Products are not designed under any special or extraordinary environments or conditions, as exemplified below. Accordingly, ROHM shall not be in any way responsible or liable for any damages, expenses or losses arising from the use of any ROHM's Products under any special or extraordinary environments or conditions. If you intend to use our Products under any special or extraordinary environments or conditions (as exemplified below), your independent verification and confirmation of product performance, reliability, etc, prior to use, must be necessary:
 - [a] Use of our Products in any types of liquid, including water, oils, chemicals, and organic solvents
 - [b] Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
 - [c] Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - [f] Sealing or coating our Products with resin or other coating materials
 - [g] Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
 - [h] Use of the Products in places subject to dew condensation
4. The Products are not subject to radiation-proof design.
5. Please verify and confirm characteristics of the final or mounted products in using the Products.
6. In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
7. De-rate Power Dissipation (P_d) depending on Ambient temperature (Ta). When used in sealed area, confirm the actual ambient temperature.
8. Confirm that operation temperature is within the specified range described in the product specification.
9. ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

Precaution for Mounting / Circuit board design

1. When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
2. In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

Precautions Regarding Application Examples and External Circuits

1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.
2. You agree that application notes, reference designs, and associated data and information contained in this document are presented only as guidance for Products use. Therefore, in case you use such information, you are solely responsible for it and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of such information.

Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

Precaution for Storage / Transportation

1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
 - [a] the Products are exposed to sea winds or corrosive gases, including Cl₂, H₂S, NH₃, SO₂, and NO₂
 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

Precaution for Product Label

QR code printed on ROHM Products label is for ROHM's internal use only.

Precaution for Disposition

When disposing Products please dispose them properly using an authorized industry waste company.

Precaution for Foreign Exchange and Foreign Trade act

Since concerned goods might be fallen under listed items of export control prescribed by Foreign exchange and Foreign trade act, please consult with ROHM in case of export.

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Mouser Electronics

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ROHM Semiconductor:

UCR10EVHFLR100	UCR01MVPFLR750	UCR03EVPFSR062	UCR18EVHFLR100	UCR18EVHFSR039
UCR10EVHFSR013	UCR03EVPFSR075	UCR18EVHFSR020	UCR006YVPFLR100	UCR10EVHFSR030
UCR10EVHFSR051	UCR03EVPFLR100	UCR10EVHFSR025	UCR10EVHFSR027	UCR10EVHFSR039
UCR18EVHFSR030	UCR03EVPFLR300	UCR18EVHFSR047	UCR01MVPFLR200	UCR03EWPFSR020
UCR03EWPFSR027	UCR03EVPFLR750	UCR18EVHFSR051	UCR03EVPFLR270	UCR03EWPFSR039
UCR18EVHFSR075	UCR03EVPFSR050	UCR03EWPFSR030	UCR01MVPFLR100	UCR03EWPFSR047
UCR18EVHFSR011	UCR03EVPFLR150	UCR03EVPFSR068	UCR01MVPFLR220	UCR03EVPFLR180
UCR03EVPFLR200	UCR10EVHFSR082	UCR10EVHFSR043	UCR10EVHFSR020	UCR03EVPFSR091
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UCR03EVPFLR470	UCR18EVHJSR033	UCR10EVHFSR012	UCR18EVHFSR012	UCR01MVPFSR068
UCR18EVHFSR018	UCR006YVPFLR240	UCR006YVPFLR330	UCR006YVPFLR470	UCR006YVPFLR220
UCR03EVPFSR082	UCR10EVHFSR033	UCR10EVHFSR062	UCR03EVPFLR510	UCR18EVHFSR015
UCR03EVPFLR330	UCR03EVPFSR051	UCR10EVHFSR068	UCR18EVHFSR013	UCR03EWPFSR022
UCR18EVHFSR062	UCR18EVHFSR068	UCR10EVHFSR024	UCR18EVHFSR033	UCR18EVHFSR022
UCR18EVHFSR016	UCR18EVHFSR024			