

Fixed Thick Film Low Ohmic Chip Resistors For Current Detection

UCR18 (3216(1206) size : 1 / 2W)

●Features

- 1) Chip resistors ideal for current detection. (11mΩ to 100mΩ)
- 2) Unique chip and terminal configuration reduces resistance shifting during the mounting process.
- 3) Superior rated power.
- 4) 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.

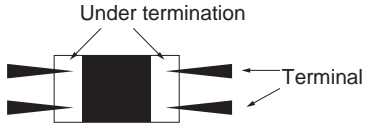
| Item | Conditions | Specifications |
|-----------------------|---|--------------------------|
| Rated power | <p>Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.</p> <p style="text-align: center;">Fig.1</p> | 0.5W (1 / 2W) at 70°C |
| Rated voltage | <p>The voltage rating is calculated by the following equation.</p> $E = \sqrt{P \times R}$ <p>E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)</p> | |
| 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) |
|----------------------|----------------------|-----------------------|---|
| 0.011 to 0.018 (E24) | F (±1%) J (±5%) | S | 0 to 350 |
| 0.020 to 0.039 (E24) | | | 0 to 200 |
| 0.043 to 0.091 (E24) | | | 0 to 150 |
| 0.1 | | 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.

●Characteristics

| Item | Guaranteed value | Test conditions (JIS C 5201-1) |
|--|--|--|
| | Resistor type | |
| Resistance | F : $\pm 1\%$ J : $\pm 5\%$ | 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 : $-55 / +25 / +125^{\circ}\text{C}$ |
| Overload | $\pm (2.0\%+0.005\Omega)$ | JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 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 : $235\pm 5^{\circ}\text{C}$ Duration of immersion : $2.0\pm 0.5\text{s}$. |
| Resistance to soldering heat | $\pm (1.0\%+0.005\Omega)$ No remarkable abnormality on the appearance. | JIS C 5201-1 4.18 Soldering condition : $260\pm 5^{\circ}\text{C}$ Duration of immersion : $10\pm 1\text{s}$. |
| Rapid change of temperature | $\pm (1.0\%+0.005\Omega)$ | JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc |
| Damp heat, steady state | $\pm (3.0\%+0.005\Omega)$ | JIS C 5201-1 4.24 40°C , 93%RH Test time : 56 days |
| Endurance at 70°C | $\pm (3.0\%+0.005\Omega)$ | JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h |
| Endurance | $\pm (3.0\%+0.005\Omega)$ | JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h |
| Resistance to solvent | $\pm (0.5\%+0.005\Omega)$ | JIS C 5201-1 4.29 $23\pm 5^{\circ}\text{C}$ Solvent : 2-propanol |
| Bend strength of the end face plating | Without open. | JIS C 5201-1 4.33 |

●Dimensions (Unit : mm)

| No. | Material |
|-----|--|
| ① | Resistive element (Oxide metal thick film) |
| ② | Silver thick film electrode |
| ③ | Nickel electrode |
| ④ | Sn electrode |
| ⑤ | Alumina substrate |
| ⑥ | Overcoating (Resin) |
| ⑦ | Mark side |

●Packaging

Reel

EIAJ ET-7200B compliant

(Unit: mm)

| A | B | C | D |
|--|---|---|-------------------|
| $\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$ | $\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$ | $9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$ | $\phi 13 \pm 0.2$ |

Taping

(Unit: mm)

| W | F | E | A0 | B0 |
|--|----------------|----------------|--|--|
| 8.0 ± 0.3 | 3.5 ± 0.05 | 1.75 ± 0.1 | $1.95 \begin{smallmatrix} +0.1 \\ -0.05 \end{smallmatrix}$ | $3.5 \begin{smallmatrix} +0.15 \\ -0.05 \end{smallmatrix}$ |
| D0 | P0 | P1 | P2 | T2 |
| $\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$ | 4.0 ± 0.1 | 4.0 ± 0.1 | 2.0 ± 0.05 | Max. 1.1 |

●Part No. Explanation

| UCR18 | EVH | JS | | | | | | | | | | | |
|----------------------|--|----------------------------|--|----------|-----|---|-----------------|-------------------|------------|-----------|---|--|--|
| Part No. | Resistance tolerance | Special part number | Nominal resistance | | | | | | | | | | |
| | <table border="1" style="width: 100%;"> <tr> <td>F</td> <td>±1%</td> </tr> <tr> <td>J</td> <td>±5%</td> </tr> </table> | F | ±1% | J | ±5% | <table border="1" style="width: 100%;"> <tr> <td>S</td> <td>0.011 to 0.091Ω</td> </tr> <tr> <td>L</td> <td>0.1Ω</td> </tr> </table> | S | 0.011 to 0.091Ω | L | 0.1Ω | Resistance code, 3 or 4 digits. 000 denotes jumper type. | | |
| F | ±1% | | | | | | | | | | | | |
| J | ±5% | | | | | | | | | | | | |
| S | 0.011 to 0.091Ω | | | | | | | | | | | | |
| L | 0.1Ω | | | | | | | | | | | | |
| | | | <table border="1" style="width: 100%;"> <thead> <tr> <th>Resistance tolerance</th> <th>Resistance code</th> </tr> </thead> <tbody> <tr> <td>FL, FS, JS</td> <td>: 4 digits</td> </tr> <tr> <td>JL</td> <td>: 3 digits</td> </tr> </tbody> </table> | | | Resistance tolerance | Resistance code | FL, FS, JS | : 4 digits | JL | : 3 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) |
|--------------|------|----------------------|--------|--------------------------|---------------|--------------------------|
| | | J(±5%) | F(±1%) | | | |
| UCR18 | EVH | ⊙ | ⊙ | Paper tape (4mm Pitch) | φ180mm (7in.) | 5,000 |

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

Notes

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