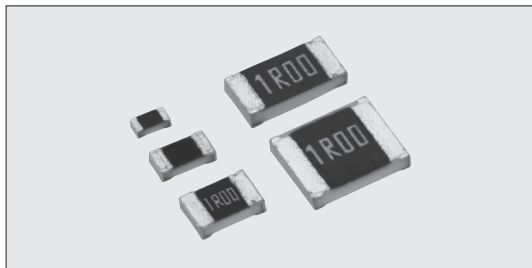
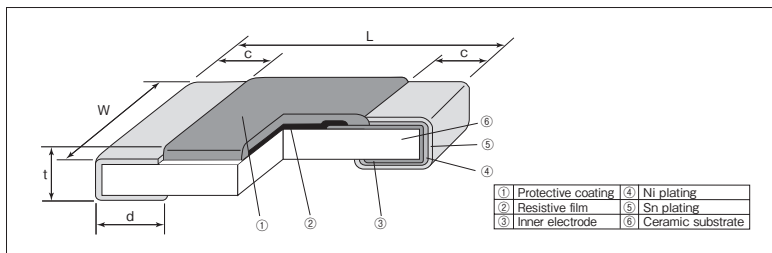


SR73-RT Low Resistance Flat Chip Resistors (Anti Sulfuration)



Coating color : Black

Construction



Features

- Excellent anti-sulfuration characteristic due to using high sulfuration-proof inner top electrode material.
- Current detecting resistors for power supply, motor circuits, etc.
- High reliability and performance with resistance tolerance $\pm 1.0\%$, T.C.R. $\pm 100 \times 10^{-6}/K$
- Suitable for both reflow and flow solderings.
- Products with lead free termination meet EU-RoHS requirements. EU-RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Tested.

Applications

- Car electronics, Power supply, Industrial robot

Reference Standards

IEC 60115-8
JIS C 5201-8
EIAJ RC-2134C

Dimensions

| Type (Inch Size Code) | Resistance Range (Ω) | Dimensions (mm) | | | | | Weight (g) (1000pcs) |
|--------------------------|----------------------------------|----------------------|----------------------|-----------------------|------------------------|-----------------|-------------------------|
| | | L | W | c | d | t | |
| 1E (0402) | 1~10 | $1.0^{+0.1}_{-0.05}$ | $0.5^{+0.1}_{-0.05}$ | 0.2 ± 0.1 | 0.25 ± 0.1 | 0.35 ± 0.05 | 0.68 |
| | 0.1~0.43 | 1.6 ± 0.2 | $0.8^{+0.15}_{-0.1}$ | $0.35^{+0.15}_{-0.1}$ | $0.35^{+0.05}_{-0.05}$ | 0.45 ± 0.1 | 2.50 |
| 0.47~10 | 0.35 ± 0.1 | | | 0.35 ± 0.1 | 2.14 | | |
| 2A (0805) | 0.1~0.43 | 2.0 ± 0.2 | 1.25 ± 0.1 | 0.4 ± 0.2 | $0.4^{+0.2}_{-0.1}$ | 0.5 ± 0.1 | 5.13 |
| | 0.47~10 | | | | $0.3^{+0.2}_{-0.1}$ | | 4.54 |
| 2B (1206) | 0.1~0.43 | 3.2 ± 0.2 | 1.6 ± 0.2 | 0.5 ± 0.3 | $0.5^{+0.2}_{-0.1}$ | 0.6 ± 0.1 | 10.0 |
| | 0.47~10 | | | | $0.4^{+0.2}_{-0.1}$ | | 9.14 |
| 2E (1210) | 0.1~0.39 | 2.6 ± 0.2 | 2.6 ± 0.2 | $0.5^{+0.2}_{-0.1}$ | $0.4^{+0.2}_{-0.1}$ | 0.6 ± 0.1 | 16.3 |
| | 0.43~10 | | | | | | $0.4^{+0.2}_{-0.1}$ |

Type Designation

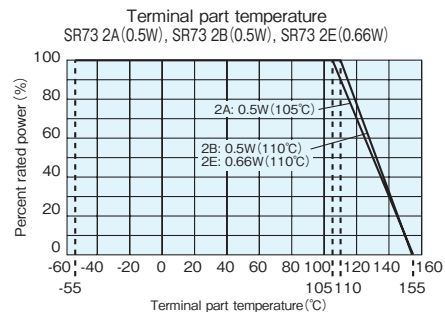
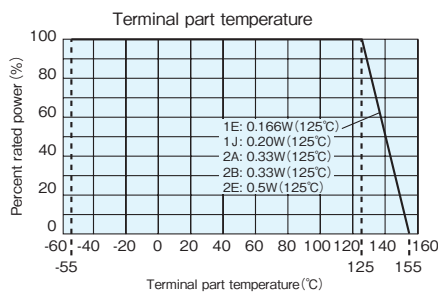
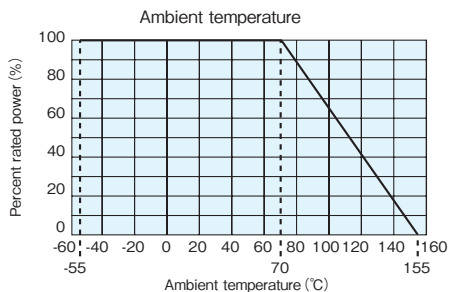
Example

| SR73 | 2B | R | T | TD | R10 | J |
|--------------|---|---------------------|---------------------------|--|---|--|
| Product Code | Power Rating | Characteristic | Terminal Surface Material | Taping | Nominal Resistance | Resistance Tolerance |
| | 1E: 0.166W 1J: 0.2W 2A: 0.33W 0.5W ^{#2} 2B: 0.33W 0.5W ^{#2} 2E: 0.5W 0.66W ^{#2} | R: Anti sulfuration | T: Sn | TPL: TP: 2mm pitch punch paper TD: 4mm pitch punch paper BK: Bulk | F: 4 digits G, J: 3 digits Ex. 0.1 Ω : R100 | F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ |

| Resistance Value (Ω) | 3digits | Resistance Value (Ω) | 4digits |
|-------------------------------|---------|-------------------------------|-----------|
| 0.1~0.91 | R10~R91 | 0.1~0.976 | R100~R976 |
| 1~9.1 | 1R0~9R1 | 1~9.76 | 1R00~9R76 |
| 10 | 100 | 10 | 10R0 |

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.
For further information on taping, please refer to APPENDIX C on the back pages.

Derating Curve



For resistors operated at an ambient temperature of 70°C or higher, the power shall be derated in accordance with the above derating curve.

When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.

If you want to use at the rated power of *2 please use the derating curves based on the terminal part temperature of right side.

*Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

■ Ratings

| Type | Power Rating | Rated Ambient Temp. | Rated Terminal Part Temp. | T.C.R. ($\times 10^{-6}/K$) | Resistance Range (Ω) | | | Taping & Q'ty /Reel (pcs) | |
|------|---------------------|---------------------|---------------------------|----------------------------------|---|---------------------|---------------------|---------------------------|-------|
| | | | | | F: $\pm 1\%$ E24 · E96 ^{※1} | G: $\pm 2\%$ E24 | J: $\pm 5\%$ E24 | TPL · TP | TD |
| 1E | 0.166W | 70°C | 125°C | ± 200 | 1~10 | 1~10 | 1~10 | TPL:20,000 TP :10,000 | — |
| 1J | 0.2W | 70°C | 125°C | ± 200 | 0.2~10 | 0.2~10 | 0.2~10 | — | 5,000 |
| | | | | ± 300 | 0.1~0.18 | 0.1~0.18 | 0.1~0.18 | | |
| 2A | 0.33W | 70°C | 125°C | ± 100 | 0.47~10 | — | — | — | 5,000 |
| | | | | ± 200 | 0.2~0.43 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | 0.1~0.18 | 0.1~0.18 | 0.1~0.18 | | |
| | 0.5W ^{※2} | 70°C | 105°C | ± 100 | 0.47~10 | — | — | | |
| | | | | ± 200 | 0.2~0.43 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | 0.1~0.18 | 0.1~0.18 | 0.1~0.18 | | |
| 2B | 0.33W | 70°C | 125°C | ± 100 | 0.47~10 | — | — | — | 5,000 |
| | | | | ± 200 | 0.2~0.43 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | 0.1~0.18 | 0.1~0.18 | 0.1~0.18 | | |
| | 0.5W ^{※2} | 70°C | 110°C | ± 100 | 0.47~10 | — | — | | |
| | | | | ± 200 | 0.2~0.43 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | 0.1~0.18 | 0.1~0.18 | 0.1~0.18 | | |
| 2E | 0.5W | 70°C | 125°C | ± 100 | 0.43~10 | — | — | — | 5,000 |
| | | | | ± 200 | 0.2~0.39 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | — | — | 0.1~0.18 | | |
| | 0.66W ^{※2} | 70°C | 110°C | ± 100 | 0.43~10 | — | — | | |
| | | | | ± 200 | 0.2~0.39 | 0.2~10 | 0.2~10 | | |
| | | | | ± 250 | — | — | 0.1~0.18 | | |

Operating Temperature Range : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$

Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$

※1 The nominal resistance value for SR731E(F: $\pm 1.0\%$), SR731J, 2A, 2B (0.1 Ω ~0.43 Ω) and SR732E (0.1 Ω ~0.39 Ω) is in E24.

※2 If you use at the rated power, please keep the condition that the terminal of the resistor is below the rated terminal part temperature. Please refer to the derating curves based on the terminal temperature of right side on the previous page.

If any questions arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature" in your usage conditions, please give priority to the "Rated Terminal Part Temperature". For more details, please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog.

■ Performance

| Test Items | Performance Requirements $\Delta R \pm$ (% +0.005 Ω) | | Test Methods |
|--|--|---------|---|
| | Limit | Typical | |
| Resistance | Within specified tolerance | — | 25°C |
| T.C.R. | Within specified T.C.R. | — | +25°C / -55°C and +25°C / +125°C |
| Overload (Short time) | 2 | 0.5 | Rated voltage $\times 2.5$ for 5s |
| Resistance to soldering heat | 1 | 0.3 | 260°C $\pm 5^{\circ}\text{C}$, 10s ± 1 s |
| Rapid change of temperature | 1 | 0.3 | -55°C (30min.) / +125°C (30min.) 100 cycles |
| Moisture resistance | 2 | 1 | 40°C $\pm 2^{\circ}\text{C}$, 90%~95%RH, 1000h 1.5h ON / 0.5h OFF cycle |
| Endurance at 70°C or rated terminal part temperature | 2 | 1 | 70°C $\pm 2^{\circ}\text{C}$ or rated terminal part temperature $\pm 2^{\circ}\text{C}$ 1000h 1.5h ON / 0.5h OFF cycle |
| High temperature exposure | 1 | 0.3 | +155°C, 1000h |
| Sulfuration test | 5 | 0.2 | Soaked in industrial oil with sulfur substance 3.5% contained 105°C $\pm 3^{\circ}\text{C}$ 500h |

Please refer to conventional products for characteristic data such as temperature rise.

■ Precautions for Use

- The substrate of chip resistors is alumina. Cracks may occur at the connection of solder (solder fillet portion) due to the difference of the coefficient of thermal expansion from a mounting board when heat stress like heat cycle, etc. are repeatedly given to them.
- The resistance value after soldering may change depending on the size of pad pattern or solder amount. Make sure the effect of decline/increase of resistance value before designing.