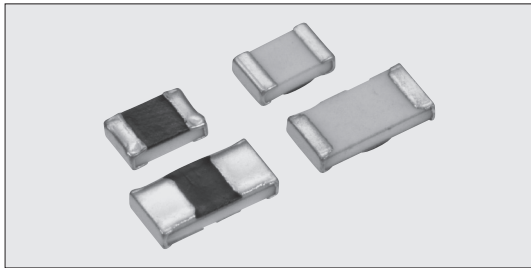


THICK FILM (LOW RESISTANCE)

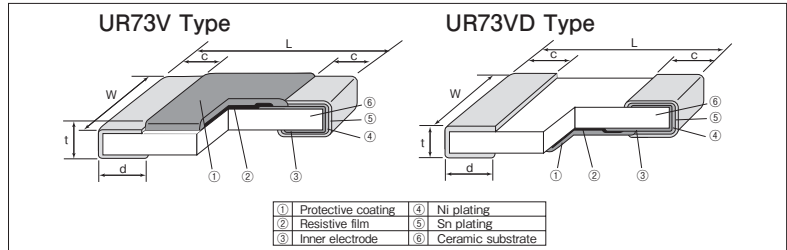


UR73V Low Resistance Flat Chip Resistors (For Automotive, Low T.C.R.)



Coating color : Black

Construction



Features

- Current detecting resistors for power supplies, motor circuits, etc.
- Low resistance (100mΩ or under) and high accuracy resistors (±1%) for current detection.
- High reliability and performance with T.C.R. $\pm 75 \times 10^{-6}/K \sim$.
- Suitable for flow and reflow solderings.
- Products meet EU-RoHS requirements.
- AEC-Q200 Tested.
- Operating temperature range $\sim 155^{\circ}C$.

Applications

- Car electronics, Computers, HDDs, Cellular-telephones, Power supplies, and Motor circuits, etc.

Reference Standards

IEC 60115-8
JIS C 5201-8

Dimensions

| Type (Inch Size Code) | Resistance range (Ω) | Dimensions (mm) | | | | | Weight (g) (1000pcs) |
|--------------------------|-------------------------|-----------------|----------|----------|-------------------------------------|---------|-------------------------|
| | | L | W | c | d | t | |
| UR73VD 2A (0805) | 10m~16m | 2.0±0.2 | 1.25±0.2 | 0.4±0.2 | 0.7±0.2 | 0.6±0.1 | 5.74 |
| | 18m~36m | | | | 0.6±0.2 | | |
| UR73V 2A (0805) | 39m~100m | 2.0±0.2 | 1.25±0.2 | 0.4±0.2 | 0.4±0.2 | 0.6±0.1 | 5.60 |
| UR73VD 2B (1206) | 10m~13m | 3.2±0.2 | 1.6±0.2 | 0.4±0.3 | 1.25±0.2 | 0.6±0.1 | 11.12 |
| | 15m~16m | | | | 1.15±0.2 | | |
| | 18m~20m | | | | 1.1±0.2 | | |
| | 22m~27m | | | | 1.0±0.2 | | |
| UR73V 2B (1206) | 30m~33m | 3.2±0.2 | 1.6±0.2 | 0.65±0.3 | 1.0±0.3 | 0.6±0.1 | 10.09 |
| | 36m~39m | | | | 0.9±0.3 | | |
| | 43m~100m | | | | 0.4 ^{+0.2} _{-0.1} | | |

Type Designation

| Example | UR73VD | 2B | T | TD | 10L0 | F |
|---------------------------|--------|--|--------|---|-----------------------------|---------|
| Product Code | UR73VD | 2B | T | TD | 10L0 | F |
| Power Rating | | 2A : 0.5W 2B : 0.5W 1W ^{#2} | | | | |
| Terminal Surface Material | | | T : Sn | | | |
| Taping | | | | TD : 4mm pitch punch paper BK : Bulk | | |
| Nominal Resistance | | | | | 4 digits Ex. 10L0 : 10mΩ | |
| Resistance Tolerance | | | | | | F : ±1% |

| Example | UR73V | 2B | T | TD | 30L0 | F |
|---------------------------|-------|--|--------|---|---|---------|
| Product Code | UR73V | 2B | T | TD | 30L0 | F |
| Power Rating | | 2A : 0.5W 2B : 0.5W 1W ^{#2} | | | | |
| Terminal Surface Material | | | T : Sn | | | |
| Taping | | | | TD : 4mm pitch punch paper BK : Bulk | | |
| Nominal Resistance | | | | | 4 digits Ex. 30L0 : 30mΩ R100 : 100mΩ | |
| Resistance Tolerance | | | | | | F : ±1% |

| Resistance Value (Ω) | 4 digits |
|----------------------|-----------|
| 10m~91m | 10L0~91L0 |
| 0.1 | R100 |

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.

Ratings

| Type | Power Rating | Rated Ambient Temp. | Rated Terminal Part Temp. | T.C.R. ($\times 10^{-6}/K$) | Resistance Range (Ω) | Resistance Tolerance | Operating Temp. Range | Taping & Q'ty/Reel (pcs) |
|-----------|------------------|---------------------|---------------------------|----------------------------------|------------------------------|----------------------|-----------------------|--------------------------|
| | | | | | E24 & 25m, 50m ^{#1} | | | TD |
| UR73VD 2A | 0.5W | 70°C | 100°C | 0~+250 | 10m~11m | F : ±1% | -55°C~+155°C | 5,000 |
| | | | | 0~+150 | 12m~13m | | | |
| | | | | ±75 | 15m~36m | | | |
| UR73V 2A | 0.5W | 70°C | 125°C | ±75 | 39m~100m | F : ±1% | -55°C~+155°C | 5,000 |
| | | | | 0~+250 | 10m~11m | | | |
| UR73VD 2B | 0.5W | 70°C | 125°C | ±75 | 12m~27m | F : ±1% | -55°C~+155°C | 5,000 |
| | | | | 0~+250 | 10m~11m | | | |
| | | | | ±75 | 12m~27m | | | |
| UR73V 2B | 0.5W | 70°C | 125°C | ±75 | 33m~75m | F : ±1% | -55°C~+155°C | 5,000 |
| | | | | ±100 | 30m, 82m~100m | | | |
| | | | | ±75 | 33m~75m | | | |
| UR73V 2B | 1W ^{#2} | 70°C | 95°C | ±100 | 30m, 82m~100m | F : ±1% | -55°C~+155°C | 5,000 |
| | | | | ±75 | 33m~75m | | | |

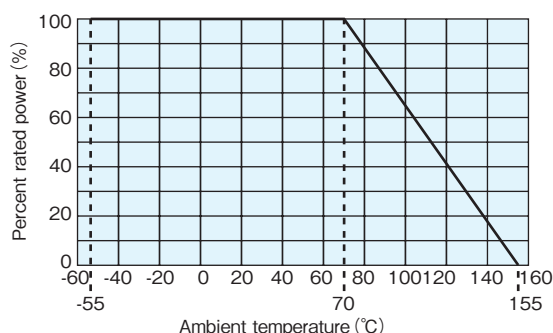
Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$
 ※1 25mΩ and 50mΩ are available.

※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 next 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.

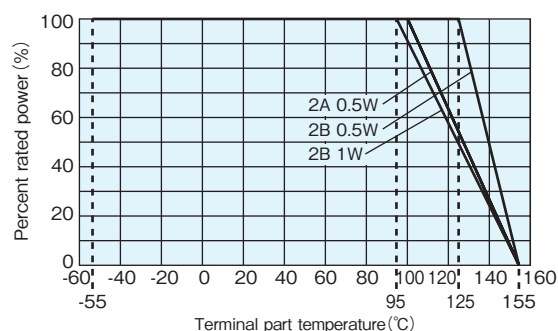
Derating Curve

Ambient temperature



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

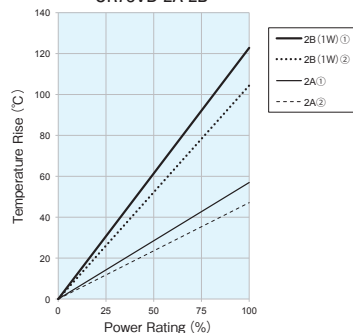
Terminal part temperature



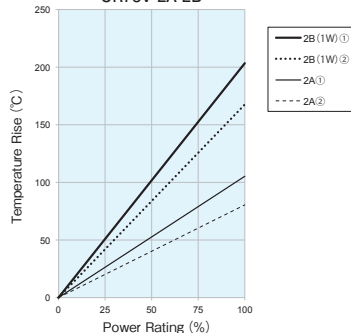
When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.
 ※Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

Temperature Rise

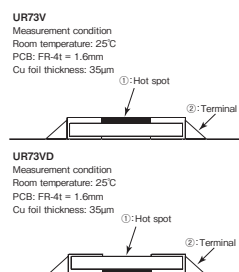
UR73VD 2A-2B



UR73V 2A-2B

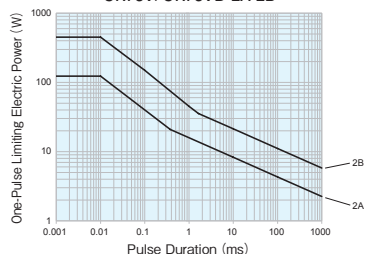


Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.



One-Pulse Limiting Electric Power

UR73V/UR73VD 2A-2B



Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

Performance

| Test Items | Performance Requirements $\Delta R \pm (\% + 0.005\Omega)$ | | 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 × 2.5 for 5s (2B:1W : Rated voltage × 2 for 5s) |
| Resistance to soldering heat | 1 | 0.3 | 260°C ±5°C, 10s ±1s |
| Rapid change of temperature | 1 | 0.5 | -55°C (30min.) / +125°C (30min.) 100 cycles |
| Moisture resistance | 2 | 1 | 40°C ±2°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 ±2°C or rated terminal part temperature ±2°C 1000h 1.5h ON/0.5h OFF cycle |
| High temperature exposure | 1 | 0.3 | +155°C, 1000h |

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. Care should be taken to the occurrence of the cracks when the change in ambient temperature or ON/OFF of load is repeated. The occurrence of the crack by heat stress may be influenced by the size of a pad, solder volume, heat radiation of mounting board etc., so please pay careful attention to designing when a big change in ambient temperature and conditions for use like ON/OFF of load can be assumed.
- In the resistance values of 50mΩ or under, 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.