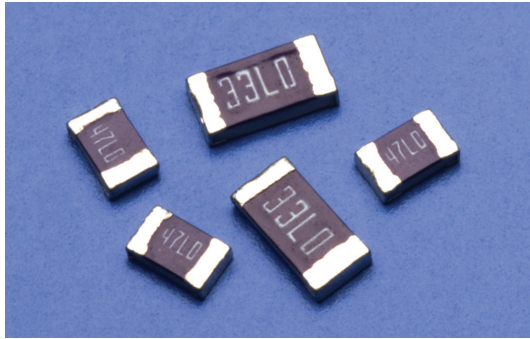




**THE DATASHEET OF  
UR73D3ATTER100F**



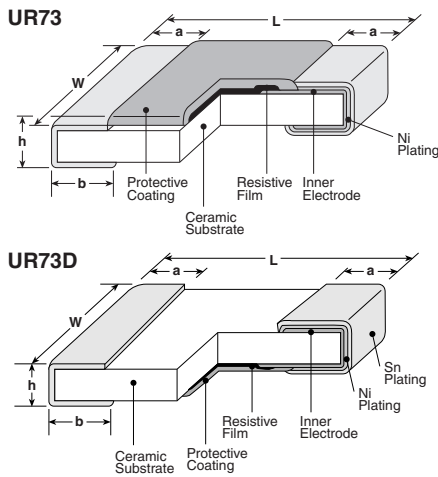


**features**

- 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.  $\pm 100 \times 10^{-6}/K$
- Products meet EU RoHS requirements

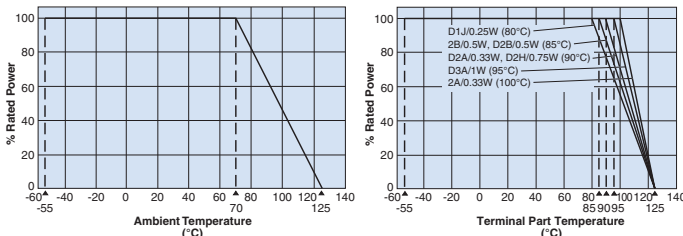
current sense

**dimensions and construction**



| Size Code  | Resistance Range (Ω) | Dimensions inches (mm)  |   |                         |                         |   |
|------------|----------------------|---|---|-------------------------|-------------------------|---|
|            |                      | L   | W   | h                       | a                       | b   |
| D1E (0402) | 24m ~ 100m           | .039 <sup>+0.004</sup> / <sub>-0.002</sub><br>(1.0 <sup>+0.1</sup> / <sub>-0.05</sub> ) | .020 <sup>+0.004</sup> / <sub>-0.002</sub><br>(0.5 <sup>+0.1</sup> / <sub>-0.05</sub> ) | .016±.002<br>(0.4±0.05) | .010±.004<br>(0.25±0.1) | .012±.004<br>(0.3±0.1)  |
|            |                      |   |   |                         |                         |   |
| D1J (0603) | 10m ~ 27m            | .063±.008<br>(1.6±0.2)  | .031 <sup>+0.005</sup> / <sub>-0.004</sub><br>(0.8 <sup>+0.15</sup> / <sub>-0.1</sub> ) | .02±.004<br>(0.5±0.1)   | .014±.004<br>(0.35±0.1) | .022±.004<br>(0.55±0.1)   |
|            | 30m ~ 100m           |   |   |                         |                         | .014±.004<br>(0.35±0.1)   |
| D2A (0805) | 10m ~ 16m            | .079±.008<br>(2.0±0.2)  | .049±.008<br>(1.25±0.2)   | .022±.004<br>(0.55±0.1) | .016±.008<br>(0.4±0.2)  | .024±.008<br>(0.6±0.2)  |
|            | 18m ~ 30m            |   |   |                         |                         | .02±.008<br>(0.5±0.2)   |
| 2A (0805)  | 33m ~ 100m           | .079±.008<br>(2.0±0.2)  | .049±.008<br>(1.25±0.2)   | .02±.004<br>(0.55±0.1)  | .016±.008<br>(0.4±0.2)  | .012 <sup>+0.008</sup> / <sub>-.004</sub><br>(0.3 <sup>+0.2</sup> / <sub>-0.1</sub> ) |
| D2B (1206) | 10m ~ 16m            | .126±.008<br>(3.2±0.2)  | .063±.008<br>(1.6±0.2)  | .024±.004<br>(0.6±0.1)  | .020±.008<br>(0.5±0.2)  | .039±.008<br>(1.0±0.2)  |
|            | 18m ~ 27m            |   |   |                         |                         | .031±.008<br>(0.8±0.2)  |
| 2B (1206)  | 30m ~ 100m           | .126±.008<br>(3.2±0.2)  | .063±.008<br>(1.6±0.2)  | .024±.004<br>(0.6±0.1)  | .020±.012<br>(0.5±0.3)  | .016 <sup>+0.008</sup> / <sub>-.004</sub><br>(0.4 <sup>+0.2</sup> / <sub>-0.1</sub> ) |
| D2H (2010) | 10m ~ 30m            | .197±.008<br>(5.0±0.2)  | .098±.008<br>(2.5±0.2)  | .026±.004<br>(0.65±0.1) | .026±.012<br>(0.65±0.3) | .063±.012<br>(1.6±0.3)  |
|            | 33m ~ 100m           |   |   |                         |                         | .026±.012<br>(0.65±0.3)   |
| D3A (2512) | 10m ~ 30m            | .248±.008<br>(6.3±0.2)  | .122±.008<br>(3.1±0.2)  | .024±.004<br>(0.6±0.1)  | .031±.012<br>(0.8±0.3)  | .079±.012<br>(2.0±0.3)  |
|            | 33m ~ 100m           |   |   |                         |                         | .031±.012<br>(0.8±0.3)  |

**Derating Curve**



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

For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve.

Please refer to "Introduction of the derating curve based on the terminal part temperature" in the beginning of our catalog prior use.

**ordering information**

|               |   |                             |  |  |                  |
|---------------|---|-----------------------------|--|--|------------------|
| <b>UR73</b>   | <b>2A</b>   | <b>T</b>                    | <b>TD</b>  | <b>R100</b>  | <b>F</b>         |
| <b>Type</b>   | <b>Power Rating</b>   | <b>Termination Material</b> | <b>Packaging</b>   | <b>Nominal Resistance</b>  | <b>Tolerance</b> |
| UR73<br>UR73D | 1E: 0.125W<br>1J: 0.25W<br>2A: 0.33W<br>2B: 0.5W<br>2H: 0.75W<br>3A: 1W | T: Sn                       | TP: 2mm pitch punch paper (1E)<br>TD: 7" punched paper tape (1J, 2A, 2B)<br>TE: 7" embossed plastic (2H, 3A) | "R" indicates decimal on values = 100mΩ<br>Ex: R100 = 100mΩ<br>"L" indicates decimal on values <100mΩ<br>Ex: 10L0 = 10mΩ | F: ±1%           |

For further information on packaging, please refer to Appendix A.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

11/08/23

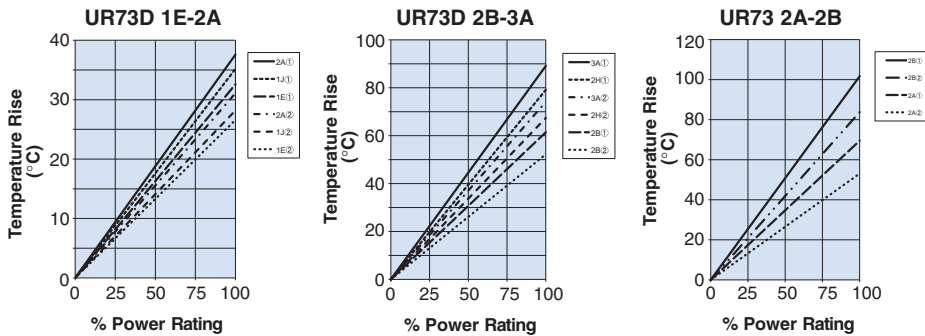
**applications and ratings**

| Part Designation | Power Rating | Rated Ambient Temperature | Rated Terminal Part Temp. | T.C.R. (ppm/°C) Max. | Resistance Range         | Operating Temperature Range |
|------------------|--------------|---------------------------|---------------------------|----------------------|--------------------------|-----------------------------|
|                  |              |                           |                           |                      | F (±1%) E-24, 25mΩ, 50mΩ |                             |
| UR73D1E          | 1/8W (.125W) | 70°C                      | —                         | ±100                 | 30mΩ - 100mΩ             | -55°C to +125°C             |
|                  |              |                           |                           | ±500                 | 24mΩ - 27mΩ              |                             |
| UR73D1J          | 1/4W (.25W)  | 70°C                      | 80°C                      | ±100                 | 47mΩ - 100mΩ             |                             |
|                  |              |                           |                           | ±200                 | 30mΩ - 43mΩ              |                             |
|                  |              |                           |                           | ±300                 | 10mΩ - 27mΩ              |                             |
| UR73D2A          | 1/3W (.33W)  | 70°C                      | 90°C                      | ±250                 | 10mΩ - 30mΩ              |                             |
| UR732A           | 1/3W (.33W)  | 70°C                      | 100°C                     | ±100                 | 47mΩ - 100mΩ             |                             |
|                  |              |                           |                           | ±250                 | 33mΩ - 43mΩ              |                             |
| UR73D2B          | 1/2W (.5W)   | 70°C                      | 85°C                      | ±200                 | 10mΩ - 27mΩ              |                             |
| UR732B           | 1/2W (.5W)   | 70°C                      | 85°C                      | ±100                 | 47mΩ - 100mΩ             |                             |
|                  |              |                           |                           | ±200                 | 30mΩ - 43mΩ              |                             |
| UR73D2H          | 3/4W (.75W)  | 70°C                      | 90°C                      | ±100                 | 33mΩ - 100mΩ             |                             |
|                  |              |                           |                           | ±250                 | 10mΩ - 30mΩ              |                             |
| UR73D3A          | 1W (1W)      | 70°C                      | 95°C                      | ±100                 | 33mΩ - 100mΩ             |                             |
|                  |              |                           |                           | ±250                 | 10mΩ - 30mΩ              |                             |

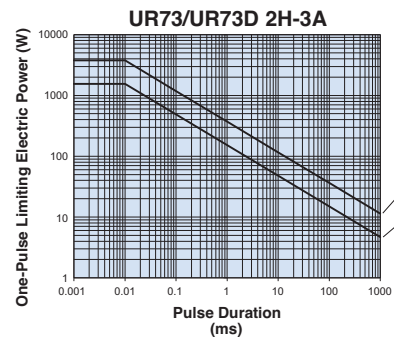
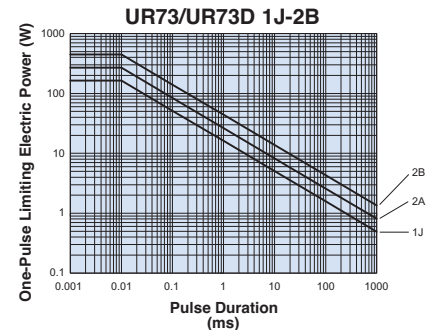
Rated voltage =  $\sqrt{P \cdot R}$

If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves on the terminal part temperature" in the beginning of the catalog.

**environmental applications**  
**Temperature Rise**



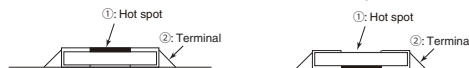
**One-Pulse Limiting Electric Power**



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.

**UR73**  
Measurement condition  
Room temperature: 25°C  
PCB: FR-4t = 1.6mm  
Cu foil thickness: 35µm

**UR73D**  
Measurement condition  
Room temperature: 25°C  
PCB: FR-4t = 1.6mm  
Cu foil thickness: 35µm



Please ask us about the resistance characteristic of continuous applied pulse

**Performance Characteristics**

| Parameter                   | Requirement Δ R ±(%+0.005Ω) |         | Test Method  |
|-----------------------------|-----------------------------|---------|--|
|                             | 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 x 2.5 for 5 seconds  |
| Resistance to Solder Heat   | ±1%                         | ±0.3%   | 260°C ± 5°C, 10 ± 1 second   |
| Rapid Change of Temperature | ±1%                         | ±0.5%   | -55°C (30 minutes), +125°C (30 minutes), 100 cycles  |
| Moisture Resistance         | ±2%                         | ±1%     | 40°C ± 2°C, 90%~95%RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                             |
| Endurance at 70°C           | ±2%                         | ±1%     | 70°C ± 2°C or rated terminal part temperature ±2°C 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| High Temperature Exposure   | ±1%                         | ±0.3%   | +125°C, 1000 hours   |

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