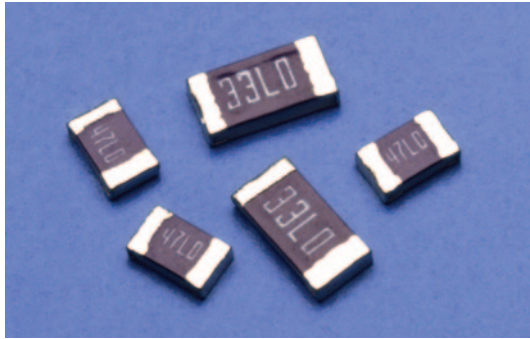




**THE DATASHEET OF  
UR732BTDD68L0F**

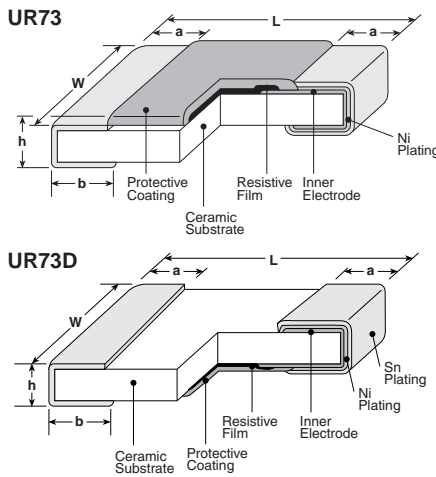




**features**

- 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

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

**ordering information**

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

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

**applications and ratings**

current sense

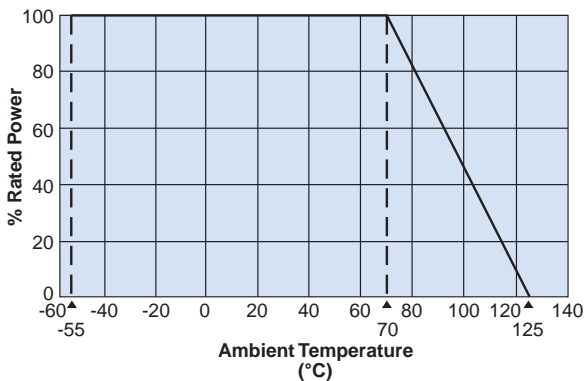
Part Designation	Power Rating	Rated Ambient Temperature	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range	Operating Temperature Range
					F (±1%) E-24, 25mΩ, 50mΩ	
UR73D1E* (0402)	0.125W	70°C	—	±100	30mΩ - 100mΩ	-55°C to +125°C
				±500	24mΩ - 27mΩ	
UR73D1J (0603)	0.25W	70°C	80°C	±100	47mΩ - 100mΩ	
				±200	30mΩ - 43mΩ	
				±300	10mΩ - 27mΩ	
UR73D2A (0805)	0.33W	70°C	90°C	±250	10mΩ - 30mΩ	
UR732A (0805)	0.33W	70°C	100°C	±100	47mΩ - 100mΩ	
				±250	33mΩ - 43mΩ	
UR73D2B (1206)	0.5W	70°C	85°C	±200	10mΩ - 27mΩ	
UR732B (1206)	0.5W	70°C	85°C	±100	47mΩ - 100mΩ	
				±200	30mΩ - 43mΩ	
UR73D2H (2010)	0.75W	70°C	90°C	±100	33mΩ - 100mΩ	
				±250	10mΩ - 30mΩ	
UR73D3A (2512)	1W	70°C	95°C	±100	33mΩ - 100mΩ	
				±250	10mΩ - 30mΩ	

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

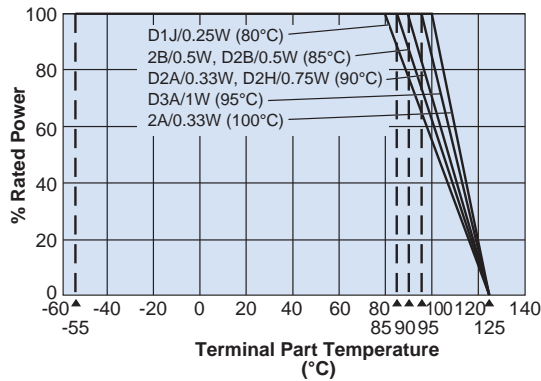
If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves on the terminal part temperature" in the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

**environmental applications**

**Derating Curve**



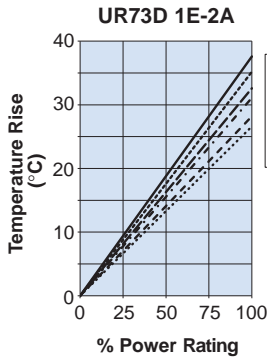
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above derating curve.



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.

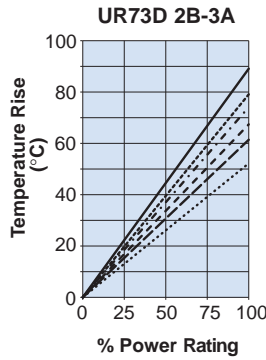
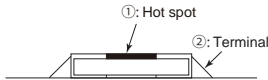
Please refer to "Introduction of the derating curve based on the terminal part temperature" in the beginning of our catalog prior use.

### Temperature Rise



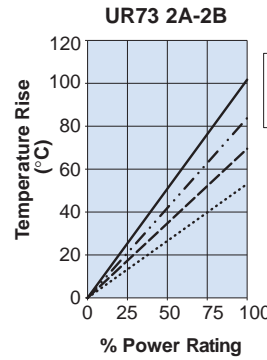
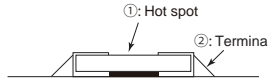
#### UR73

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



#### UR73D

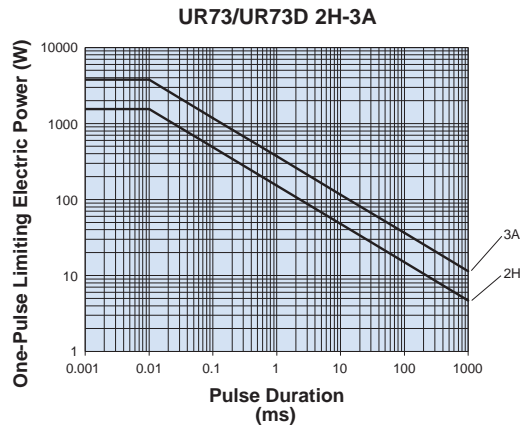
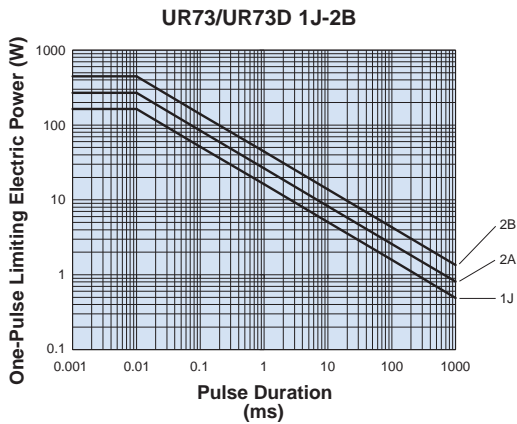
Measurement condition  
Room temperature: 25°C  
PCB: FR-4t = 1.6mm  
Cu foil thickness: 35µm



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.

current sense

### One-Pulse Limiting Electric Power



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 Characteristics

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

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