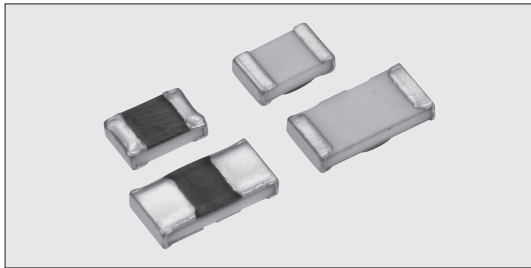


# THICK FILM (LOW RESISTANCE)

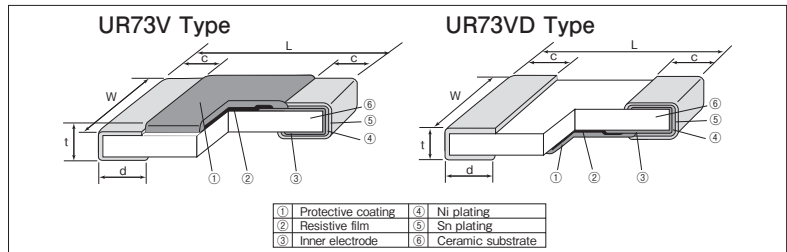


## UR73V Low Resistance Flat Chip Resistors (For Automotive, Low T.C.R.)



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 qualified.
- 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 <sup>※2</sup>	2A : 0.5W 2B : 0.5W 1W <sup>※2</sup>				
Terminal Surface Material	T : Sn	T : Sn				
Taping	TD : 4mm pitch punch paper BK : Bulk	TD : 4mm pitch punch paper BK : Bulk				
Nominal Resistance	4 digits Ex. 10L0 : 10mΩ	4 digits Ex. 30L0 : 30mΩ R100 : 100mΩ				
Resistance Tolerance	F : ±1%	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 <sup>※1</sup>			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			
				±75	12m~27m			
UR73VD 2B	1W <sup>※2</sup>	70°C	95°C	0~+250	10m~11m	F : ±1%	-55°C~+155°C	5,000
				±75	12m~27m			
				±75	33m~75m			
UR73V 2B	0.5W	70°C	125°C	±100	30m, 82m~100m	F : ±1%	-55°C~+155°C	5,000
				±75	33m~75m			
				±100	30m, 82m~100m			

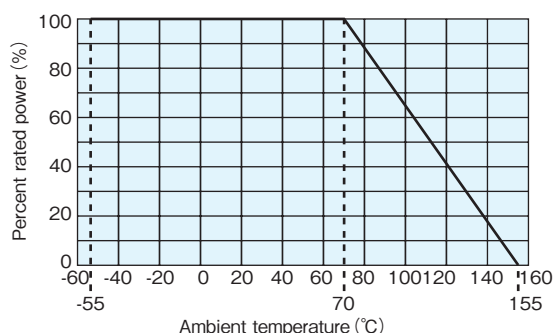
Rated voltage =  $\sqrt{\text{Power Rating} \times \text{Resistance value}}$   
 $\text{※1}$  25mΩ and 50mΩ are available.

$\text{※2}$  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.

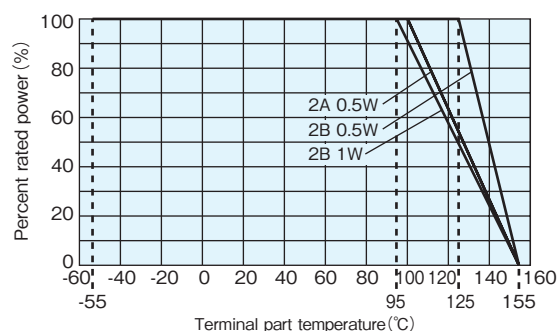
## Derating Curve

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.

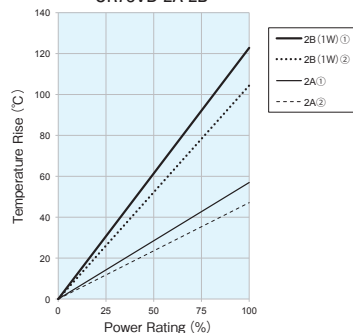
Terminal part temperature



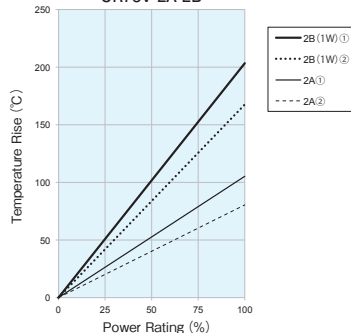
When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.  
 ※Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before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

## Temperature Rise

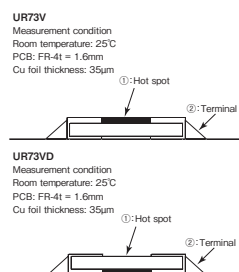
UR73VD 2A-2B



UR73V 2A-2B

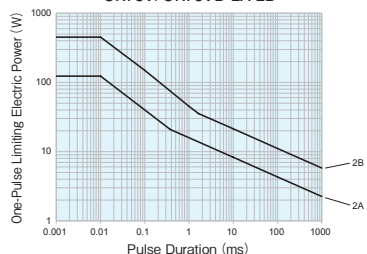


Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.



## One-Pulse Limiting Electric Power

UR73V/UR73VD 2A-2B



The maximum applicable voltage is equal to the max. overload voltage.  
 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	2.5 times of rated voltage for 5s (Power Rating: Above 0.75W : 2 times of rated voltage 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.