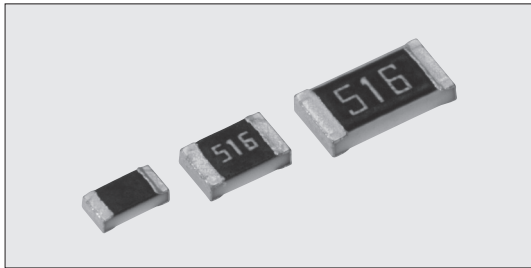


THICK FILM (FOR HIGH VOLTAGE)

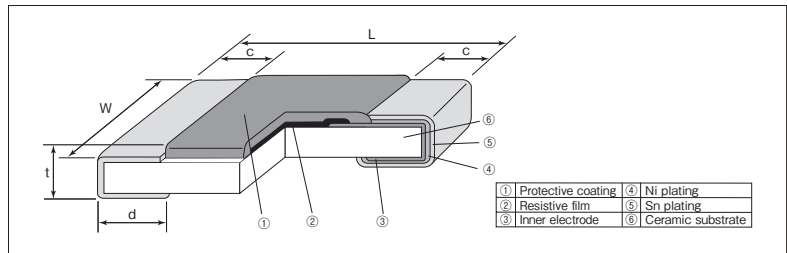


HV73V Flat Chip Resistors For High Voltage (For Automotive)



Coating color : Black

Construction



Features

- Superior to RK73 series in maximum working voltage.
- Suitable for flow and reflow solderings.
- Products meet EU-RoHS requirements. EU-RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- Suitable for high reliable applications like automotives. AEC-Q200 Tested.

Applications

- Inverter, DC-DC converter, Battery Management, Charger, HID lamp

Reference Standards

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

Dimensions

Type (Inch Size Code)	Dimensions (mm)					Weight (g) (1000pcs)
	L±0.2	W	c	d	t±0.1	
1J(0603)	1.6	0.8±0.1	0.3±0.1	0.3±0.1	0.45	2.14
1J AT(0603)			0.35±0.15	0.5±0.2		
2A(0805)	2.0	1.25±0.1	0.4±0.2	0.3 ^{+0.2} _{-0.1}	0.55	4.54
2A AT(0805)			0.45±0.25	0.6±0.2		
2B(1206)	3.2	1.6±0.2	0.5±0.3	0.4 ^{+0.2} _{-0.1}	0.6	9.14
2B AT(1206)			0.55±0.35	0.8±0.2		

Type Designation

Example

Product Code	Power Rating	Characteristic	Terminal Surface Material	Taping	Nominal Resistance	Resistance Tolerance
HV73V	2A		T	TD	104	J
1J:0.1W 2A:0.25W 2B:0.33W	Nil: Standard NEW A: Heat shock resistance**	T: Sn	TD: 4mm pitch punch paper BK: Bulk	D, F: 4 digits G, J: 3 digits	D: ±0.5% F: ±1% G: ±2% J: ±5%	

※1 With type A, only T is available as the terminal surface material.

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. (×10 ⁻⁶ /K)	Resistance Range (Ω)				Max. Working Voltage	Max. Overload Voltage (D.C.) ^{※2}	Taping & Q'ty/Reel (pcs) TD
					D:±0.5% E24·E96	F:±1% E24·E96	G:±2% E24	J:±5% E24			
HV73V1J	0.1W	70°C	80°C	±100 ^{※3}	—	10k~10M	10k~10M	10k~10M	350V	500V	5,000
HV73V2A	0.25W		100°C	±100	100k~1M	100k~10M	100k~10M	100k~10M	400V	800V	
HV73V2B	0.33W		115°C	±200	—	—	—	11M~51M	800V	1200V	

Operating Temperature Range : -55°C~+155°C

Rated voltage=√Power Rating×Resistance value or Max. working voltage, whichever is lower.

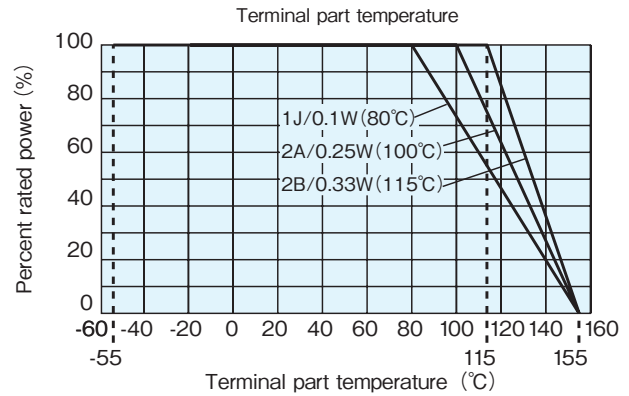
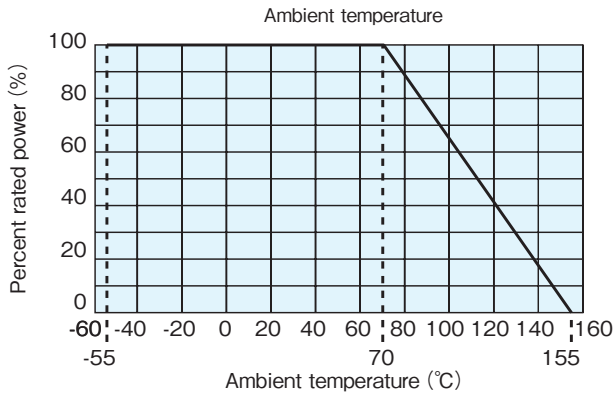
※2 Max. overload voltage is specified by D.C. voltage.

※3 Cold T.C.R. (-55°C~+25°C) of 1.02MΩ~10MΩ is ±200×10⁻⁶/K.

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

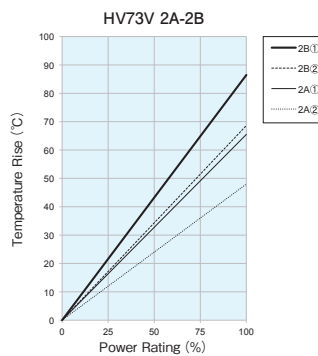
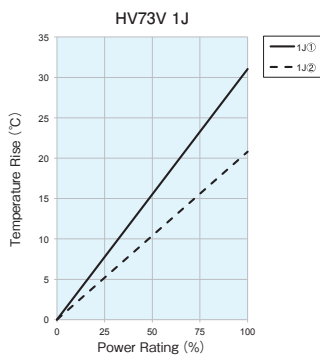


For resistors operated at an ambient temperature of 70°C or higher, the power shall be derated in accordance with the above derating curve.

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.

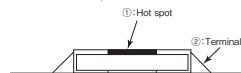
*Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

Temperature Rise

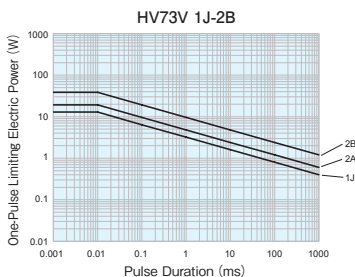


Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.

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



One-Pulse Limiting Electric Power



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 $\Delta R \pm (\% + 0.1\Omega)$		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 (D.C.) $\times 2.5$ for 5s
Resistance to soldering heat	1	0.5	260°C $\pm 5^\circ\text{C}$, 10s ± 1 s
Rapid change of temperature	0.5: (10k Ω $\leq R \leq 10$ M Ω) 1: (11M Ω $\leq R \leq 51$ M Ω) Characteristic [A] (Heat shock resistance)	0.3: (10k Ω $\leq R \leq 10$ M Ω) 0.5: (11M Ω $\leq R \leq 51$ M Ω) Characteristic [A] (Heat shock resistance)	Characteristic [Nil] (Standard): -55°C (30min.) / +125°C (30min.) 100 cycles Characteristic [A] (Heat shock resistance): -55°C (30min.) / +125°C (30min.) 1000 cycles
Moisture resistance	2	0.75	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	0.75	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

Precautions for Use

- Max. overload voltage is specified by D.C. voltage. When using in A.C. voltage, the peak value of A.C. voltage shall not exceed the Maximum overload voltage.
- 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.