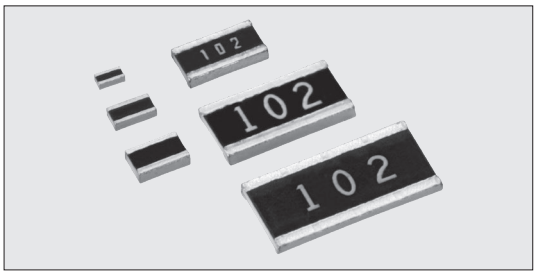
THICK FILM (WIDE TERMINAL TYPE)

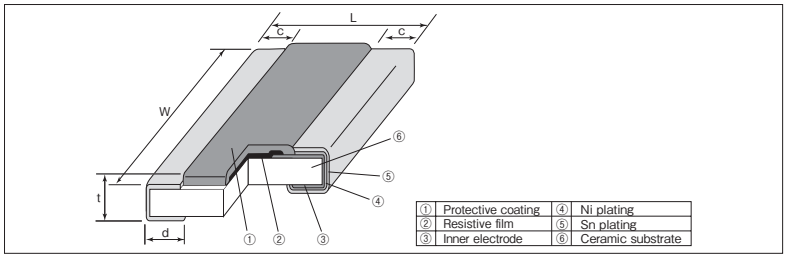
EU RoHS

WK73R Wide Terminal Type Flat Chip Resistors



Coating color : Black

■Construction



①	Protective coating	④	Ni plating
②	Resistive film	⑤	Sn plating
③	Inner electrode	⑥	Ceramic substrate

■Features

- Flat chip resistors of wide terminal type.
- High reliability and performance with T.C.R.±100×10^{-6}/K, resistance tolerance ±0.5%.
- Suitable for both reflow and flow solderings.
- Products meet EU-RoHS requirements.
  EU-RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Qualified.

■Applications

- Power supply, ECU etc.

■Reference Standards

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

■Dimensions

Type (Inch Size Code)	Dimensions (mm)					Weight (g) (1000pcs)
	L	W	c	d	t	
1E (0204)	0.5±0.05	1.0±0.05	0.15±0.05	0.15±0.05	0.35±0.05	0.65
1J (0306)	0.8±0.1	1.6±0.1	0.15±0.1	0.2±0.1	0.45±0.1	2.13
2A (0508)	1.25±0.15	2.0±0.15	0.3±0.2	0.35±0.2	0.55±0.1	4.93
2B (0612)	1.6±0.15	3.2±0.2	0.3±0.2	0.45±0.15	0.6±0.1	12.0
2H (1020)	2.5±0.15	5.0±0.15	0.4±0.2	0.75±0.15		30.2
3A (1225)	3.1±0.15	6.3±0.15	0.45±0.2			45.6

■Type Designation

Example

WK73R	2B	T	TD	1002	F
Product Code	Power Rating※1	Terminal Surface Material	Taping	Nominal Resistance	Resistance Tolerance
	1E:0.33W 1J:0.5W 0.66W 2A:0.75W 1W 2B:0.75W 1.5W 2H:2W 3A:3W	T : Sn	TP: 2mm pitch punch paper TD: 4mm pitch punch paper TE: 4mm pitch plastic embossed BK: Bulk	D,F: 4 digits J: 3 digits	D:±0.5% F:±1% J:±5%

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※1	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (×10^{-6}/K)	Resistance Range (Ω) D : ±0.5% E24・E96	Resistance Range (Ω) F : ±1% E24・E96	Resistance Range (Ω) J : ±5% E24	Max. Working Voltage	Max. Overload Voltage	Taping & Q'ty/Reel (pcs) TP	TD	TE
WK73R1E	0.33W	70℃	125℃	±100	–	10~1M	10~1M	75V	100V	10,000	–	–
WK73R1J	0.5W			±100	–	10k~1M	10k~1M	150V	200V	–	5,000	–
	0.66W			±100	–	10~9.76k	10~9.1k					
WK73R2A	0.75W			±100	20.5k~1M	20.5k~1M	22k~1M	200V	400V	–	5,000	–
	1W			±100	10~20k	10~20k	10~20k					
WK73R2B	0.75W			±100	10k~1M	10k~1M	10k~1M			–	5,000	–
	1.5W			±100	10~9.76k	10~9.76k	10~9.1k					
WK73R2H	2W			±100	–	10~430k	10~430k			–	–	4,000
				±200	–	432k~1M	470k~1M					
WK73R3A	3W			±100	–	10~330k	10~330k			–	–	4,000
				±200	–	332k~1M	360k~1M					

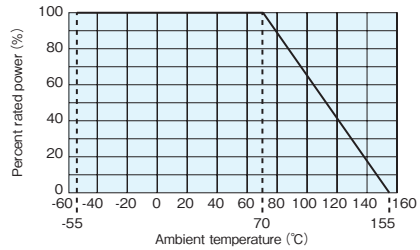
Operating Temperature Range : −55℃~+155℃
Rated voltage=√Power Rating×Resistance value or Max. working voltage, whichever is lower.
※1 If the terminal part temperature exceeds the rated terminal part temperature even if it is below the rated ambient temperature, apply the derating curve for the terminal part temperature.
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.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.
Contact our sales representatives before you use our products for applications including automotives, medical equipment and aerospace equipment.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

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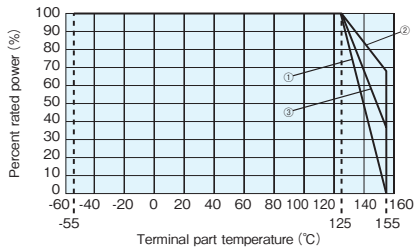
■Derating Curve

Ambient temperature



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

Terminal part temperature

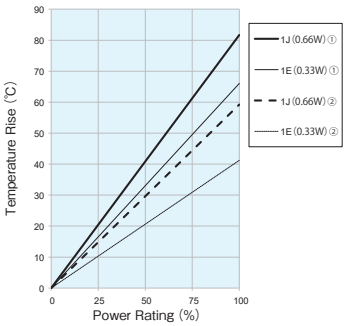


When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.
Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

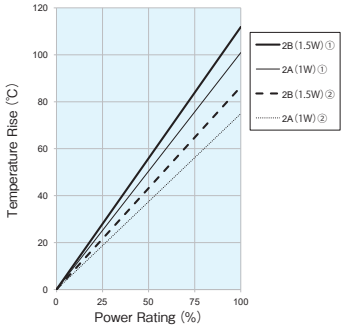
No.	Type	Resistance Range(Ω)	Power rating
①	1E	7.68k～1M	0.33W
	1J	10k～1M	0.5W
	2A	20.5k～1M	0.75W
	2B	10k～1M	0.75W
②	1E	10～7.5k	0.33W
	1J	10～9.76k	0.66W
	2A	10～20k	1W
	2H	10～1M	2W
	3A	10～1M	3W
③	2B	10～9.76k	1.5W

■Temperature Rise

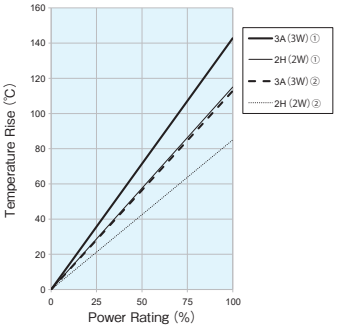
WK73R 1E-1J



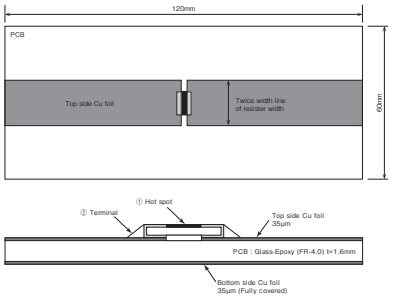
WK73R 2A-2B



WK73R 2H-3A



Simulated and measurement conditions

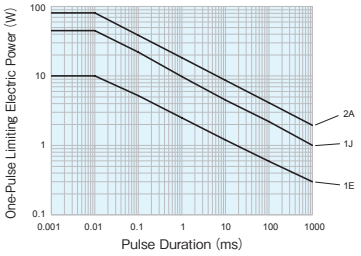


Temperature rise is simulated and measured under our conditions. So, the values will vary depending on the operating conditions and PCB used.

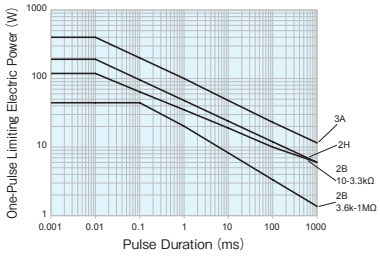
This data is a reference value to show the temperature rise under specific PCB conditions. And does not guarantee or recommend use under the described PCB conditions and load power conditions.
If the terminal part temperature when power is loaded to the resistor exceeds the rated terminal part temperature, please reduce the load according to the derating curve based on the terminal part temperature.

■One-Pulse Limiting Electric Power

WK73R 1E-2A



WK73R 2B-3A



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 ΔR± (%+0.005Ω)		Test Methods
	Limit	Typical	
Resistance	Within specified tolerance	—	25℃
T.C.R.	Within specified T.C.R	—	+25℃/−55℃ and +25℃/+125℃
Overload (Short time)	2	0.2	Overload wattage for 5s.

Type (Resistance Range/Ω)	1E	1J	2A		2B		2H	3A
			10～20k	20.5k～1M	10～10k	10.2k～1M		
Overload Wattage	1.32W	3.125W	4W	3W	6W	4.688W	8W	12W

Resistance to soldering heat	1	0.2	260℃±5℃, 10s±1s
Bending test	1	0.1	Holding point 90mm, Bending 1time. Bending 5mm
Rapid change of temperature	2	1	−55℃ (30min.) /+125℃ (30min.) 1000 cycles
Moisture resistance	3 : 1E 2 : others	1 : 1E 0.2 : others	40℃±2℃, 90%～95%RH, 1000h 1.5h ON/0.5h OFF cycle
Endurance at 70℃ or rated terminal part temperature	3 : 1E 2 : others	1 : 1E 0.2 : others	70℃±2℃ or rated terminal part temperature ±2℃ 1000h 1.5h ON/0.5h OFF cycle
High temperature exposure	1	0.2	+155℃, 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, especially when WK73 series which have self-heating. 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.

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