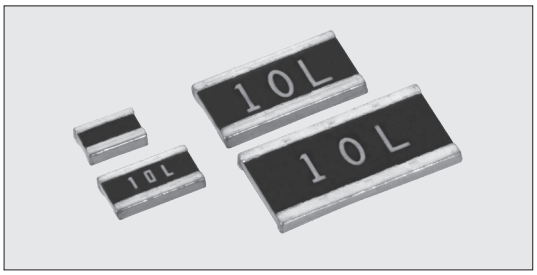
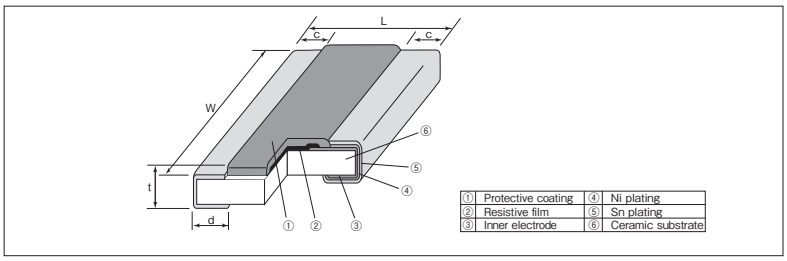
EU RoHS

WK73S Wide Terminal Type Flat Chip Resistors



Coating color : Black

■Construction



■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 Tested.

■Applications

- Power supply, ECU etc.

■Reference Standards

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

■Dimensions

Type (Inch Size Code)	Resistance Range (Ω)	Dimensions (mm) L±0.15	W	c	d	t±0.1	Weight (g) (1000pcs)
2A (0508)	20m~61.9m	1.25	2.0±0.15	0.4±0.15	0.35±0.2	0.55	4.93
	62m~9.76			0.3±0.2			
2B (0612)	10m~9.76	1.6	3.2±0.2	0.3±0.2	0.45±0.15	0.6	12.0
2H (1020)	10m~9.76	2.5	5.0±0.15	0.4±0.2	0.75±0.15		30.2
3A (1225)	10m~9.76	3.1	6.3±0.15	0.45±0.2			45.6

■Type Designation

Example

WK73S	2B	T	TD	33L0	F
Product Code	Power Rating	Terminal Surface Material	Taping	Nominal Resistance	Resistance Tolerance
	2A:1.25W※1 2B:0.75W 1,5W※1 2H:1W 3W※1 3A:1.5W 4W※1	T : Sn	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%

Resistance Value (Ω)	3 digits	Resistance Value (Ω)	4 digits
10m~91m	10L~91L	22m~97.6m	22L0~97L6
0.1~9.1	R10~9R1	0.1~9.76	R100~9R76

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.

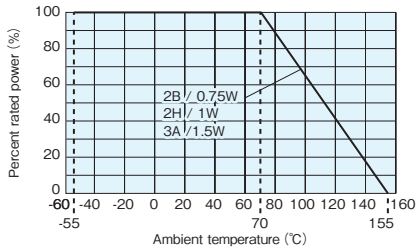
■Ratings

Type	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (×10^{-6}/K)	Resistance Range (Ω) D : ±0.5% E24・E96	F : ±1% E24・E96	J : ±5% E24	Taping & Q'ty/Reel (pcs) TD	TE
WK73S2A NEW	1.25W※1	—	125℃	±100	—	1~9.76	1~9.1	5,000	—
				0~+200	—	30m~976m	30m~910m		
				0~+300	—	20m~29.4m	20m~27m		
WK73S2B	0.75W	70℃	125℃	±100	430m~9.76	430m~9.76	430m~9.1		
				±200	—	30m~422m	30m~390m		
				±800	—	—	10m~27m		
NEW	1.5W※1	—	125℃	±100	430m~9.76	430m~9.76	430m~9.1		
				±200	—	30m~422m	30m~390m		
				±800	—	—	10m~27m		
WK73S2H	1W	70℃	125℃	±100	—	220m~9.76	220m~9.1	—	4,000
				±200	—	27m~215m	27m~200m		
				±800	—	—	10m~24m		
NEW	3W※1	—	125℃	±100	—	220m~9.76	220m~9.1		
				±200	—	27m~215m	27m~200m		
				±800	—	—	10m~24m		
WK73S3A	1.5W	70℃	125℃	±100	—	360m~9.76	360m~9.1	—	4,000
				±200	—	33m~357m	33m~330m		
				±300	—	22m~32.4m	22m~30m		
				±800	—	—	10m~20m		
NEW	4W※1	—	125℃	±100	—	360m~9.76	360m~9.1		
				±200	—	33m~357m	33m~330m		
				±300	—	22m~32.4m	22m~30m		
				±800	—	—	10m~20m		

Operating Temperature Range : −55℃~+155℃
Rated voltage=$\sqrt{\text{Power Rating}\times\text{Resistance value}}$
※1 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.

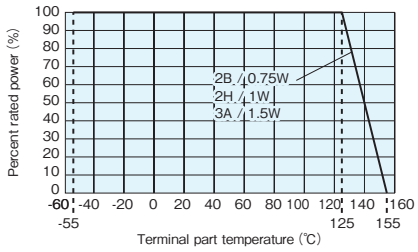
■Derating Curve

Ambient temperature

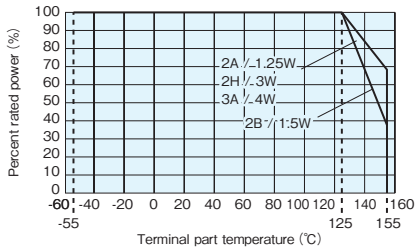


For resistors operated at an ambient temperature of 70℃ or higher, the power shall be derated in accordance with the derating curve.

Terminal part temperature



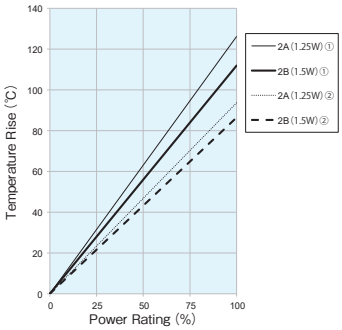
Terminal part temperature



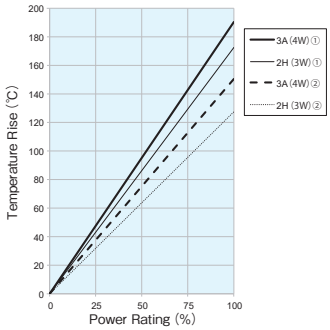
When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.
Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use.

■Temperature Rise

WK73S 2A-2B

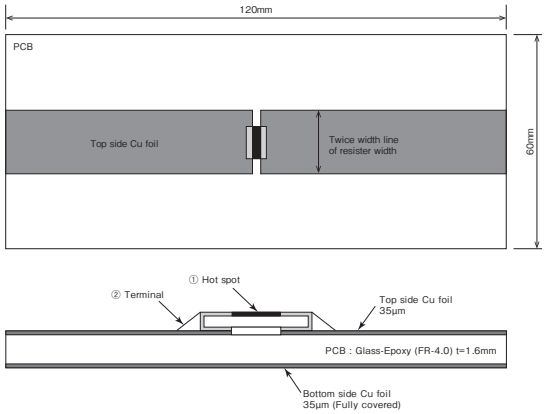


WK73S 2H-3A



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.

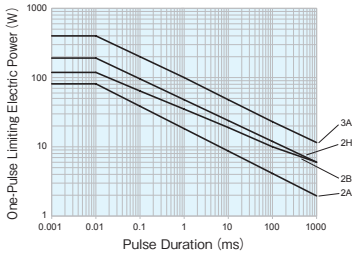
Simulated and measurement conditions



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

■One-Pulse Limiting Electric Power

WK73S 2A-3A



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: 2A / 2B / 2H / 3A Overload Wattage: 4W / 6W / 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	2	0.2	40℃±2℃, 90%~95%RH, 1000h 1.5h ON/0.5h OFF cycle
Endurance at 70℃ or rated terminal part temperature	2	0.2	70℃±2℃ or rated terminal part temperature ±2℃ 1000h 1.5h ON/0.5h OFF cycle
High temperature exposure	2 : J (±5%) 1 : others	0.5 : J (±5%) 0.2 : others	+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.
- 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.