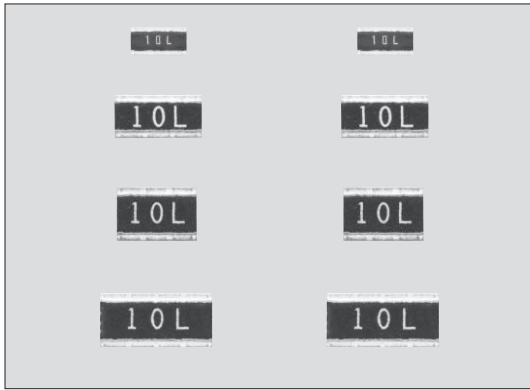


THICK FILM (WIDE TERMINAL TYPE)

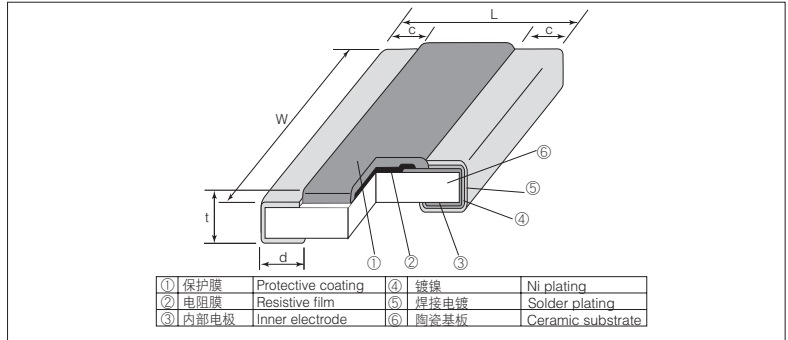


矩形片式电阻器
Flat Chip Resistors

WK73 长边电极矩形片式电阻器 Wide Terminal Type Flat Chip Resistors



■ 结构图 Construction



外观颜色: 黑色 Coating color: Black

■ 特点 Features

- 长边电极片状电阻器。
- 高信赖性和高性能, T.C.R. $\pm 100 \times 10^{-6} / K$, 阻值允许偏差 $\pm 1\%$ 。
- 对应回流焊、波峰焊。
- 端子无铅品, 符合欧盟RoHS。电极、电阻膜层、玻璃中所含的铅玻璃不适用欧盟RoHS指令。
- AEC-Q200相关数据已取得。
- Flat chip resistors of wide terminal type.
- High reliability and performance with T.C.R. $\pm 100 \times 10^{-6} / K$, resistance tolerance $\pm 1\%$ 。
- Suitable for both reflow and flow solderings.
- Products with lead free termination meet EU-RoHS requirements. EU-RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 qualified.

■ 用途 Applications

- 电源电路, ECU及车载关联。
- Power supply, ECU etc.

■ 参考标准 Reference Standards

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

■ 额定值 Ratings

型号 Type	额定功率 Power Rating	电阻温度系数 T.C.R. ($\times 10^{-6}/K$)	电阻值范围 Resistance Range (Ω) E24			最高使用电压 Max. Working Voltage	最高过载电压 Max. Overload Voltage	额定环境温度 Rated Ambient Temp.	端子部温度 Rated Terminal Part Temp.	编带和包装数/卷 Taping & Q'ty/Reel (pcs)			
			D: $\pm 0.5\%$ E24 • E96	F: $\pm 1\%$ E24 • E96	J: $\pm 5\%$ E24					TD	TE		
WK73S2B	0.75W (1.0W*)	± 800	-	10m~27m	200V	400V	70°C	105°C	5,000	-			
		± 200	-	30m~422m							30m~390m		
		± 100	-	430m~9.76							430m~9.1		
WK73R2B	0.75W	± 100	10~1M	10~1M	200V	400V			100°C	100°C	-	4,000	
		± 800	-	10m~24m									
		± 200	-	27m~215m									27m~200m
WK73S2H	1.0W	± 100	-	220m~9.76	200V	400V	70°C	100°C			-	4,000	
		± 100	-	10~430k									10~430k
		± 200	-	432k~1M									470k~1M
WK73R2H	1.0W	± 800	-	10m~30m	200V	400V			70°C	100°C	-	4,000	
		± 200	-	33m~237m									33m~220m
		± 100	-	240m~9.76									240m~9.1
WK73S2J	1.0W	± 100	-	10~510k	200V	400V	70°C	100°C			-	4,000	
		± 200	-	511k~1M									560k~1M
		± 800	-	10m~20m									
WK73R2J	1.0W	± 300	-	22m~32.4m	200V	400V			90°C	90°C	-	4,000	
		± 200	-	33m~357m									33m~330m
		± 100	-	360m~9.76									360m~9.1
WK73S3A	1.5W (2.0W*)	± 100	-	10~330k	200V	400V	90°C	90°C			-	4,000	
		± 200	-	332k~1M									360k~1M
		± 800	-										

使用温度范围 Operating Temperature Range: $-55^\circ C \sim +155^\circ C$

额定电压是 $\sqrt{\text{额定功率} \times \text{公称电阻值}}$ 所算出的值或表中最高使用电压两者中小的值为额定电压。

Rated voltage = $\sqrt{\text{Power Rating} \times \text{Resistance value}}$ or Max. working voltage, whichever is lower.

*2 请您在使用时咨询。

*2 Please inquire to us before use.

■ 外形尺寸 Dimensions

型号 Type (Inch Size Code)	尺寸 Dimensions (mm)					Weight (g) (1000pcs)
	L	W	c	d	t	
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
2J (1218)	3.1 ± 0.15	4.6 ± 0.15	0.4 ± 0.2	0.75 ± 0.15	0.6 ± 0.1	33.3
3A (1225)		6.3 ± 0.15	0.45 ± 0.2			45.6

■ 品名构成 Type Designation

实例 Example

品种 Product Code	额定功率 Power Rating	端子表面材质 Terminal Surface Material	二次加工 Taping	公称电阻值* Nominal Resistance	阻值允许偏差 Resistance Tolerance
WK73S WK73R	2B:0.75W 2H:1W 2J:1W 3A:1.5W	T: Sn	TD: 4mm pitch punch paper TE: 4mm pitch plastic embossed BK: Bulk	D, F: 4 digits J: 3 digits	D: $\pm 1\%$ J: $\pm 5\%$

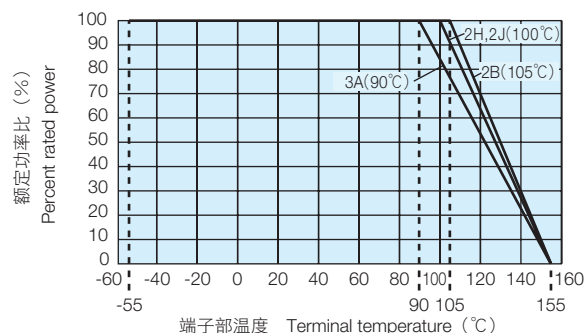
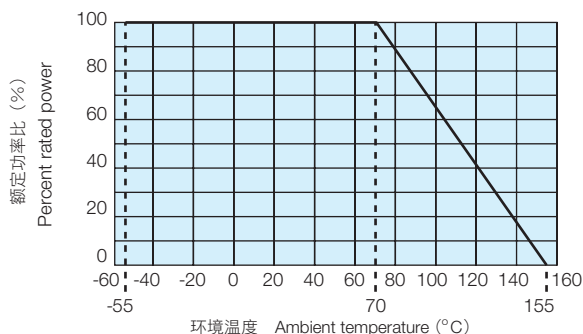
电阻值范围 (Ω) Resistance Value	3位显示 3 digits	电阻值范围 (Ω) Resistance Value	4位显示 4 digits
10m~91m	10L~91L	22m~97.6m	22L0~97L6
0.1~9.1	R10~9R1	0.1~9.76	R100~9R76

欲知关于此产品含有的环境负荷物质详情(除EU-RoHS以外), 请与我们联系。
编带细节请参考卷末附录C。

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.

■ 负荷减轻特性曲线 Derating Curve



在环境温度70℃以上使用时，应按照上图负荷减轻特性曲线，减小额定功率。

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.

超过上述端子部温度使用时，请根据负荷减轻特性曲线减小额定功率后使用。

※有关使用方法，请参照卷首的“端子部温度负荷减轻特性曲线的说明”。

For resistors operated terminal part temperature of described for each size or above, a power rating shall be derated in accordance with derating curve.

※Please refer to “Introduction of the derating curves based on the terminal part temperature” on the beginning of our catalog before use.

■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements $\Delta R \pm (\% + 0.005 \Omega)$		试验方法 Test Methods
	保证值 Limit	代表值 Typical	
电阻值 Resistance	在规定的允许偏差内 Within specified tolerance	-	25°C
电阻温度系数 T.C.R.	在规定的值以内 Within specified T.C.R.	-	+25°C/-55°C and +25°C/+125°C
过载(短时间) Overload (Short time)	2	0.2	额定电压×2.5倍施加5秒钟 Rated voltage × 2.5 for 5s
耐焊接热 Resistance to soldering heat	1	0.2	260°C ± 5°C, 10s ± 1s
端子强度 Bending test	1	0.1	挠曲强度: 保持点间距90mm, 挠曲一次, 弯曲5mm Holding point 90mm, Bending 1time. Bending 5mm
温度突变 Rapid change of temperature	0.5	0.1	-55°C (30min.) / +125°C (30min.) 5 cycles
耐湿负荷 Moisture resistance	2	0.2	40°C ± 2°C, 90%~95%RH, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle
在70°C时的耐久性 Endurance at 70°C	2	0.2	70°C ± 2°C, 1000h 1.5小时ON、0.5小时OFF的周期 1.5h ON/0.5h OFF cycle
高温放置 High temperature exposure	2: WK73S J (±5%) 1: another	0.5: WK73S J (±5%) 0.2: another	+155°C, 1000h

■ 使用注意事项 Precautions for Use

- 片状电阻器的基材是氧化铝，由于和安装基板的热膨胀系数不同，在反复施加热循环等热应力时，连接部的焊缝会发生裂纹。由于WK73系列本身发热也大，使环境温度变动有较大反复和，载荷的ON/OFF有反复时，需要注意裂纹的发生。用环氧树脂印刷电路板（FR-4），在使用温度范围的上、下限进行一般性的热循环试验时，1H~2E的类型不容易发生裂纹，而W2H/W3A型则有容易发生裂纹的倾向。因热应力而发生裂纹，取决于所安装的焊盘的大小、焊接量、安装基板的散热性等，因此环境温度有大的变化和载荷的ON/OFF的使用条件时，请充分注意后进行设计。
- 对于50mΩ或以下的电阻值，焊接后的电阻值可能会根据焊盘图案的大小或焊锡量而变化。对设备进行设计时，请先确认电阻值下降、上升所造成的影响。
- 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 amounting 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 large types of W2H/W3A which have large thermal expansion and also self heating. By general temperature cycle test using glass-epoxy (FR-4) boards under the maximum/minimum temperatures of operating temperature range, the crack does not occur easily in the types of 1H~2E, but the crack tends to occur in the types of W2H/W3A. 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.