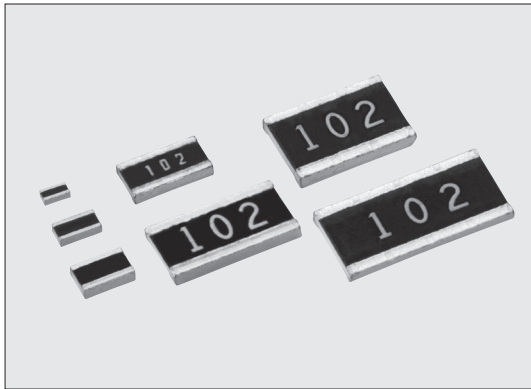


THICK FILM (WIDE TERMINAL TYPE)



WK73R 长边电极矩形片式电阻器 Wide Terminal Type Flat Chip Resistors



外观颜色: 黑色 Coating color: Black

特点 Features

- 长边电极片状电阻器。
- 是阻值允许偏差±0.5%、电阻温度系数±100×10⁻⁶/K的高可靠性、高性能产品。
- 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. ±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.

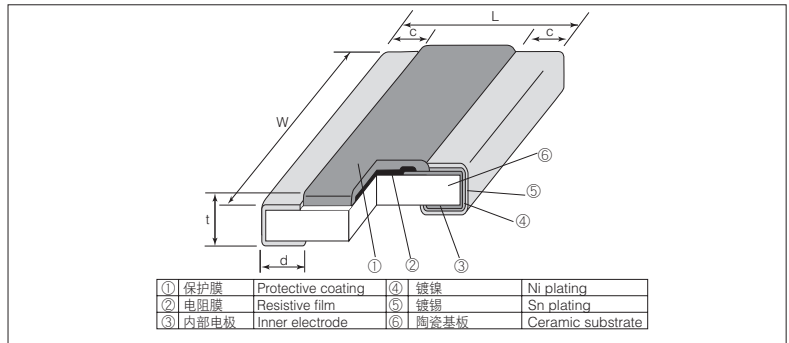
用途 Applications

- 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

结构图 Construction



外形尺寸 Dimensions

| 型号 Type (Inch Size Code) | 尺寸 Dimensions (mm) | | | | | Weight (g) (1000pcs) |
|-----------------------------|--------------------|----------|----------|-----------|-----------|-------------------------|
| | L | W | c | d | t | |
| 1E (0204) | 0.5±0.05 | 1.0±0.05 | 0.1±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 |
| 2J (1218) | 3.1±0.15 | 4.6±0.15 | 0.4±0.2 | | | 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 |
|------------|-----------------|--|----------------------------------|--|-------------------------------|------------------------------|
| WK73R | WK73R | 1E:0.33W 1J:0.5W 2A:0.75W 1W 2B:0.75W 1W 2H:1W 2J:1W 3A:1.5W 2W | 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% |

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.

额定值 Ratings

| 型号 Type | 额定功率 Power Rating | 额定环境温度 Rated Ambient Temp. | 额定端子部温度 Rated Terminal Part Temp. | 电阻温度系数 T.C.R. (×10 ⁻⁶ /K) | 电阻值范围 Resistance Range (Ω) | | | 最高使用电压 Max. Working Voltage | 最高过载电压 Max. Overload Voltage | 编带和包装数/卷 Taping & Qty/Reel (pcs) | | | |
|---------|---------------------|----------------------------|-----------------------------------|--------------------------------------|----------------------------|----------------|------------|-----------------------------|------------------------------|----------------------------------|-------|----|-------|
| | | | | | D: ±0.5% E24·E96 | F: ±1% E24·E96 | J: ±5% E24 | | | TP | TD | TE | |
| WK73R1E | 0.33W ^{*1} | - | 125°C | ±100 | - | 10~1M | 10~1M | 75V | 100V | 10,000 | - | - | |
| WK73R1J | 0.5W ^{*1} | - | 125°C | ±100 | - | 10~1M | 10~1M | 150V | 200V | - | 5,000 | - | |
| WK73R2A | 0.75W ^{*1} | - | 125°C | ±100 | - | 20.5k~1M | 22k~1M | 200V | 400V | - | 5,000 | - | |
| | 1W ^{*1} | - | 125°C | ±100 | - | 10~20k | 10~20k | | | | | | |
| WK73R2B | 0.75W | 70°C | 125°C | ±100 | 10~1M | 10~1M | 10~1M | | | - | 5,000 | - | - |
| | 1W ^{*1} | - | 115°C | ±100 | 10~9.76k | 10~9.76k | 10~9.1k | | | | | | |
| WK73R2H | 1W | 70°C | 125°C | ±100 | - | 10~430k | 10~430k | | | - | - | - | 4,000 |
| | | | | ±200 | - | 432k~1M | 470k~1M | | | | | | |
| WK73R2J | 1W | 70°C | 100°C | ±100 | - | 10~510k | 10~510k | | | - | - | - | 4,000 |
| | | | | ±200 | - | 511k~1M | 560k~1M | | | | | | |
| WK73R3A | 1.5W | 70°C | 125°C | ±100 | - | 10~330k | 10~330k | | | - | - | - | 4,000 |
| | | | | ±200 | - | 332k~1M | 360k~1M | | | | | | |
| | | | | ±100 | - | 10~330k | 10~330k | | | | | | |
| | 2W ^{*1} | - | 115°C | ±100 | - | 332k~1M | 360k~1M | | | | | | |

使用温度范围 Operating Temperature Range: -55°C~+155°C

额定电压是√额定功率×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 = √ Power Rating × Resistance value or Max. working voltage, whichever is lower.

按照※1的额定功率使用时, 请使用下页右侧端子部温度的负荷减轻特性曲线。

If you want to use at the rated power of ※1, please use the derating curves based on the terminal temperature of right side on the next page.

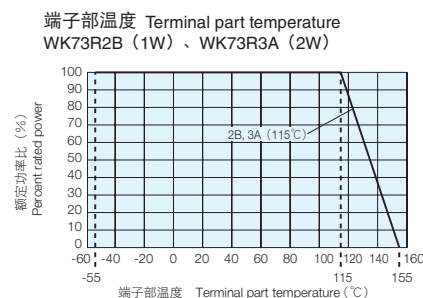
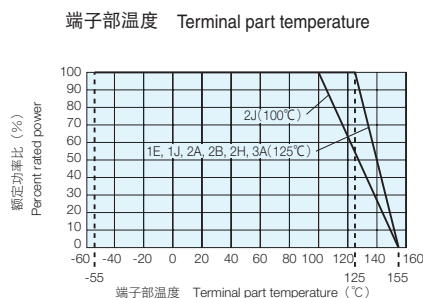
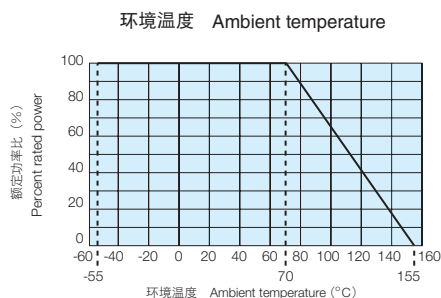
根据客户的使用状况, 如果不清楚是该使用额定环境温度还是额定端子部温度, 请以额定端子部温度为优先。

详情请参照14~17页的“端子部温度负荷特性曲线的说明”。

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” in page 14 to 17.

■ 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。
- 关于使用方法，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. | 在规定的允许偏差内 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 (WK73R1E (0.33W)、WK73R2A (0.75W、1W)、WK73R2B (1W)、WK73R3A (2W)) 额定电压×2.0倍施加5秒钟 Rated voltage×2.0 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 | 0.3 | -55°C (30min.) / +125°C (30min.) 100 cycles |
| 耐湿负荷 Moisture resistance | 3: 1E 2: another | 1: 1E 0.2: another | 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℃时的耐久性 Endurance at 70°C | 3: 1E 2: another | 1: 1E 0.2: another | 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 | 1 | 0.2 | +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，在反复施加加热循环等热应力时，结合部的焊锡（焊接部）有时会发生龟裂。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。因热应力而发生的龟裂，取决于所安装的焊盘的大小、焊锡量、安装基板的散热性等，因此在环境温度有很大的变化或载荷ON/OFF的条件下使用时，请充分注意以进行设计。
- 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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