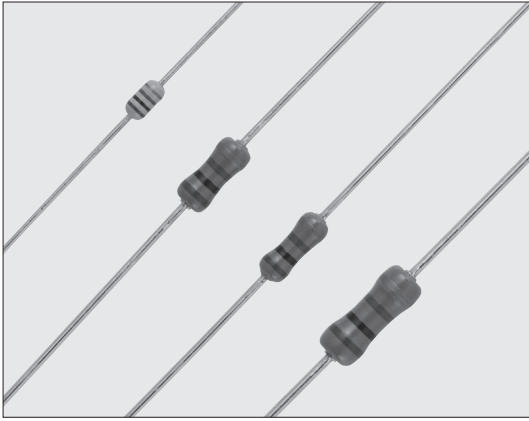


CF 小型涂层绝缘型碳膜固定电阻器 Coat-Insulated Fixed Carbon Film Resistors



外观颜色: CFS1/4象牙白色 其他威尼斯红色
Coating color: CFS1/4-Ivory Others-venetian red
表示: 颜色代码 Marking: Color code

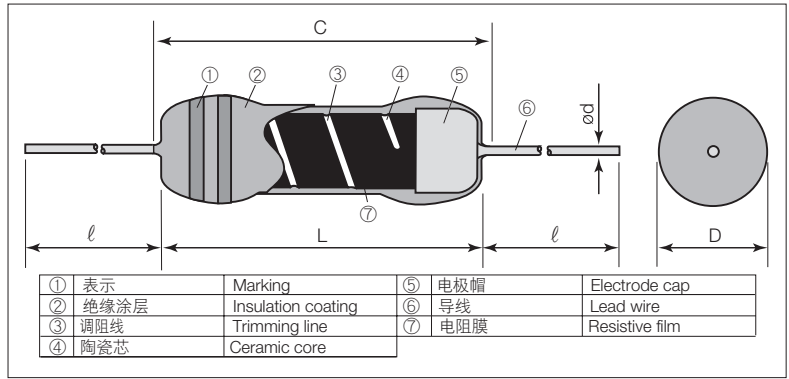
特点 Features

- 通用型引线型电阻器。
- 可以自动插入。
- 有多种加工成型类型。
- 在相同功率下, 比贴片电阻更能耐受脉冲。
- 同样有1/4W的小型电阻器 (CFS 1/4)。
- 对应欧盟RoHS的。
- General-purpose lead-type resistors.
- Automatic insertion is applicable.
- Various types of formings are available.
- Stronger in pulse resistance than chip resistors of the same power.
- The smaller type of 1/4W(CFS 1/4) is available.
- Products meet EU-RoHS requirements.

参考标准 Reference Standards

IEC 60115-2
JIS C 5201-2
EIAJ RC-2136

结构图 Construction



外形尺寸 Dimensions

| 型号 Type | 尺寸 Dimensions (mm) | | | | Weight (g) (1000pcs) | | |
|------------|--------------------|--------|-------------------------------------|-------------|-------------------------|------------|-----|
| | L | C Max. | D | d (Nominal) | Standard | Long | |
| CFS1/4 | 3.2±0.2 | 3.4 | 1.7 ^{+0.2} _{-0.1} | 0.45 | 14 min. *1 | 20 min. *2 | 80 |
| CF1/4 | 6.1±0.5 | 7.1 | 2.3±0.3 | 0.6 | | | 160 |
| CFS1/2 | 6.3±0.5 | 7.1 | 2.85±0.3 | 0.6 | 20 min. | — | 290 |
| CFB1/2 | 9.0±1.0 | 11.0 | 3.5±0.5 | 0.7 | | — | 520 |

*1 成型编码S可以对应盒装。 *3 引线长度按照成型和编带的不同而改变。
*1 Forming code S is applied for bulk type. *3 Lead length changes depending on taping and forming type.
*2 Long对定应制产品。
*2 Long type is custom-made.

品名构成 Type Designation

实例 Example

| CF | 1/4 | C | T52 | A | 103 | J |
|--------------------|---|-------------------------------------|--------------------------|---|-----------------------------|--------------------------------|
| 品种 Product Code | 额定功率 Power Rating | 端子表面材质 Terminal Surface Material | 二次加工 Taping & Forming | 包装 Packaging | 公称电阻值 Nominal Resistance | 阻值允许偏差 Resistance Tolerance |
| | S1/4: 0.25W 1/4: 0.25W B1/2: 0.5W S1/2: 0.5W | C: SnCu | 参照下述 See table below | A: AMMO包装 A: AMMO R: 卷 R: REEL 空栏: 箱子 Nil: BOX | 3 digits | G: ±2% 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.

二次加工对应表 Taping & Forming Matrix

| 型号 Type | 直型 Straight | | 轴向编带 Axial Taping | | 径向编带 Radial Taping | | | | U成形 U Forming | | M成形 M Forming | | | | |
|------------|----------------|---------|----------------------|-----|-----------------------|----|-----|-----|------------------|---|------------------|-----|------|--------|--------|
| | S | 无符号 Nil | T26 | T52 | VT | MT | MHT | VTP | VTE | U | UCL | M5 | M10 | M12.5 | M12.5 |
| CFS 1/4 | ○*1 | ○*2 | ○ | ○ | ○ | ○ | ○ | — | — | ○ | — | M5F | — | — | — |
| CF 1/4 | ○*1 | ○*2 | ○ | ○ | — | — | — | ○ | — | ○ | — | — | M10H | M12.5H | — |
| CFS 1/2 | — | ○ | ○ | ○ | ○ | — | — | ○ | ○ | — | — | — | M10H | — | — |
| CFB 1/2 | — | ○ | — | ○ | — | — | — | — | — | — | — | — | — | — | M12.5K |

额定值 Ratings

| 型号 Type | 额定功率 Power Rating | 电阻值范围 Resistance Range (Ω) (E24) | | 电阻温度系数 T.C.R. (×10 ⁻⁶ /K) | | | | 最高使用电压 Max. Working Voltage | 最高过载电压 Max. Overload Voltage | 耐电压 Dielectric Withstanding Voltage | 编带和包装数/AMMO包装 Taping & Q'ty/AMMO (pcs) | |
|------------|----------------------|-------------------------------------|----------|---|-------------|-------------|-------------|--------------------------------|---------------------------------|--|---|-------|
| | | G: ±2% | J: ±5% | +350~450 | 0~-700 | 0~-1000 | 0~-1300 | | | | T26A | T52A |
| CFS 1/4 | 0.25W | 10~330k | 2.2~1M | 2.2Ω~47kΩ | 51kΩ~100kΩ | 110kΩ~330kΩ | 360kΩ~1MΩ | 250V | 500V | 300V | 5,000 | 3,000 |
| CF 1/4 | 0.25W | | 2.2~5.1M | 2.2Ω~100kΩ | 110kΩ~330kΩ | 360kΩ~1MΩ | 1.1MΩ~5.1MΩ | 300V | 600V | 500V | 2,000 | 2,000 |
| CFS 1/2 | 0.5W | 10~1M | 1.0~5.1M | 1.0Ω~91kΩ | 100kΩ~1MΩ | 1.1MΩ~2.2MΩ | 2.4MΩ~5.1MΩ | 350V | 700V | 700V | | |
| CFB 1/2 | 0.5W | | 2.2~5.1M | 2.2Ω~100kΩ | 110kΩ~1MΩ | 1.1MΩ~2.2MΩ | 2.4MΩ~5.1MΩ | 400V | 800V | — | — | — |

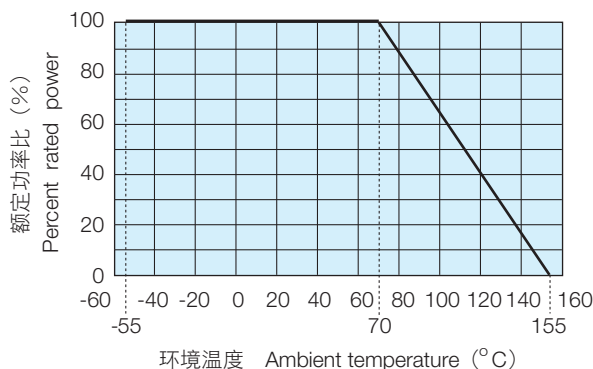
额定环境温度 Rated Ambient Temperature: +70°C

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成为额定电压。

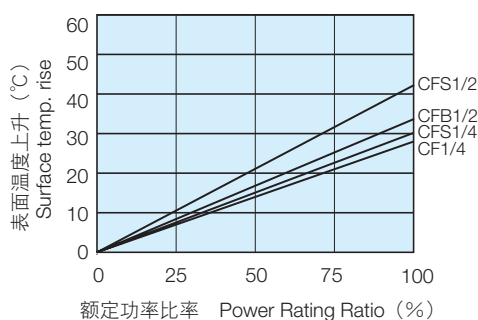
Rated voltage = √Power Rating × Resistance value or Max. working voltage, whichever is lower.

■ 负荷减轻特性曲线 Derating Curve

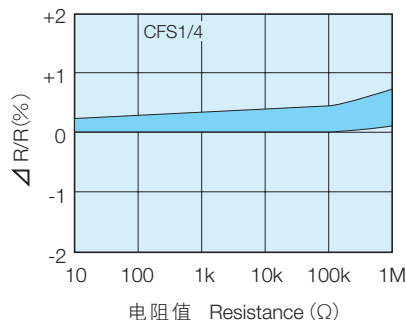


在环境温度70℃以上使用时，应按照左图负荷减轻特性曲线，减小额定功率。
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the left derating curve.

■ 表面温度上升 Surface Temperature Rise



■ 耐久性 (额定负载) Load Life At 70°C 1000Hr



■ 性能 Performance

| 试验项目 Test Items | 标准值 Performance Requirements ΔR± (%+0.05 Ω) | | 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 | - | 测定位置距离本体10mm±1mm Measuring points are at 10mm±1mm from the end cap. |
| 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/+125°C |
| 过载 (短时间) Overload (Short time) | 1 | 0.5 | 额定电压×2.5倍或者最高过载电压，取两者中低的一方施加5秒 Rated voltage×2.5 or Max. overload vol., whichever is lower, for 5s. |
| 耐焊接热 Resistance to soldering heat | 1 | 0.5 | 260°C±5°C, 10s±1s |
| 端子强度 Terminal strength | 不应出现导线外露，端子松弛的情况 No lead-coming off and loose terminals | - | Twist 360° , 5 times |
| 温度突变 Rapid change of temperature | 1 | 0.5 | -55°C (30min.) /+125°C (30min.) 5 cycles |
| 耐湿负荷 Moisture resistance | 5 | 2.5 | 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 | 3 | 1.5 | 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 |

■ 使用注意事项 Precautions for Use

- 助焊剂等在本产品和安装的印刷电路板上附着离子性杂质时，其耐湿性·耐腐蚀性将受到影响。助焊剂内有时含有氯·酸等离子性物质，为除去这些离子性物质应进行清洗。特别是使用无铅助焊剂时，由于湿润性提高了，有时会含有大量离子性物质，所以在使用RMA系的焊锡或助焊剂时，应充分进行清洗。并且，保管环境和安装条件、环境等，附着了汗·盐等离子性物质时，其耐湿性·耐腐蚀性也将受到影响。对于这种污染，为了除去这些离子性物质，应当进行清洗。
- Ionic impurities such as flux etc. that are attached to these products or those mounted onto a PCB, negatively affect their moisture resistance, corrosion resistance, etc. The flux may contain ionic substances like chlorine, acid, etc. Please wash them to get rid of these ionic substances especially when using lead-free solder that may contain much of the said substances for improving a wetting characteristic. Using RMA solder or RMA flux, or well-washing is needed. Also, attaching ionic substances such as perspiration, salt etc. by storage environments or mounting conditions/environments negatively affects their moisture resistance, corrosion resistance etc. Please wash them to remove the ionic substances when they are polluted.

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