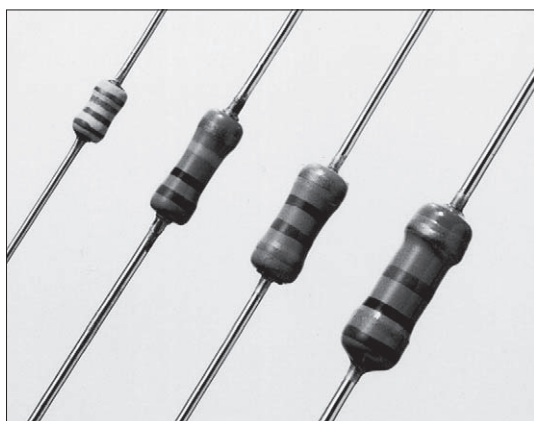


## CF 小型涂层绝缘型碳膜固定电阻器 Coat-Insulated Fixed Carbon Film Resistors



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

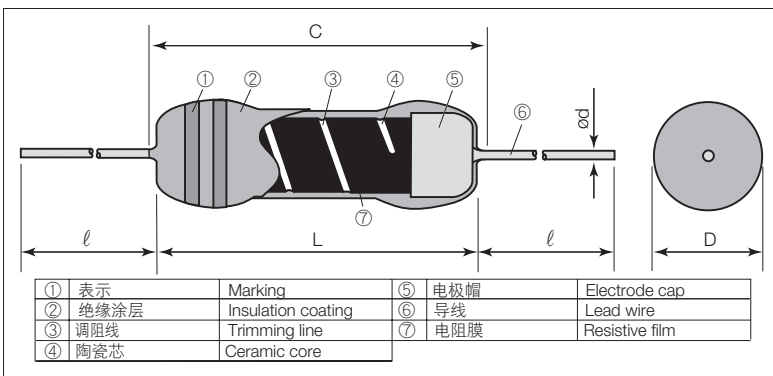
### 特点 Features

- 通用型引线型电阻器。
- 可以用于自动插装机。
- 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 <sup>+0.2</sup> <sub>-0.1</sub>	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	○	○ <sup>※2</sup>	○	○	○	○	○	—	—	○	—	M5F	—	—	—
CF 1/4	○	○ <sup>※2</sup>	○	○	○	—	—	—	—	○	—	—	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 <sup>-6</sup> /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	—
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	2,000	2,000
CFB 1/2	0.5W		2.2~5.1M	2.2Ω~100kΩ	110kΩ~1MΩ	1.1MΩ~2.2MΩ	2.4MΩ~5.1MΩ	400V	800V		—	—

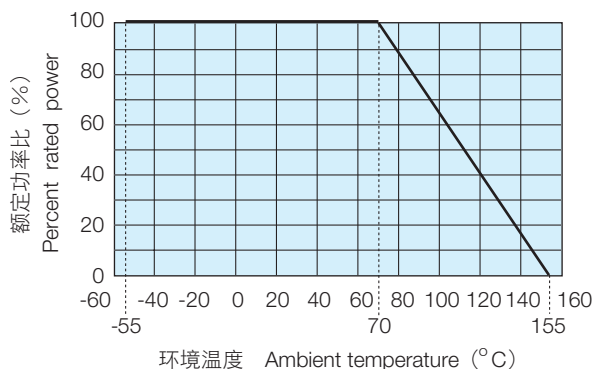
额定环境温度 Rated Ambient Temperature: +70°C

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。

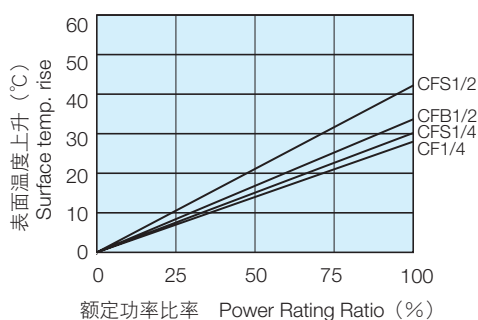
Rated voltage = √Power Rating × Resistance value or Max. working voltage, whichever is lower.

## ■ 负荷减轻特性曲线 Derating Curve

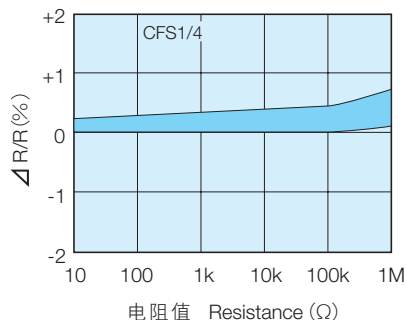


在环境温度70℃以上使用时，应按照左图负荷减轻特性曲线，减小额定功率。  
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the left derating curve.

## ■ 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.	在规定的值以内 Within specified T.C.R.	-	室温/上升100℃ Room temperature + 100°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℃±5℃, 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℃ (30min.) / +125℃ (30min.) 5 cycles
耐湿负荷 Moisture resistance	5	2.5	40℃±2℃, 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℃	3	1.5	70℃±2℃, 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.