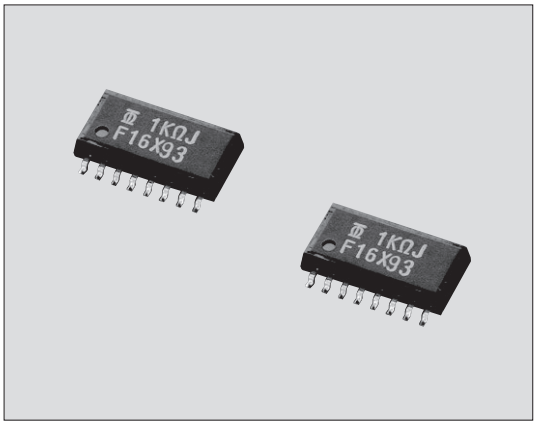
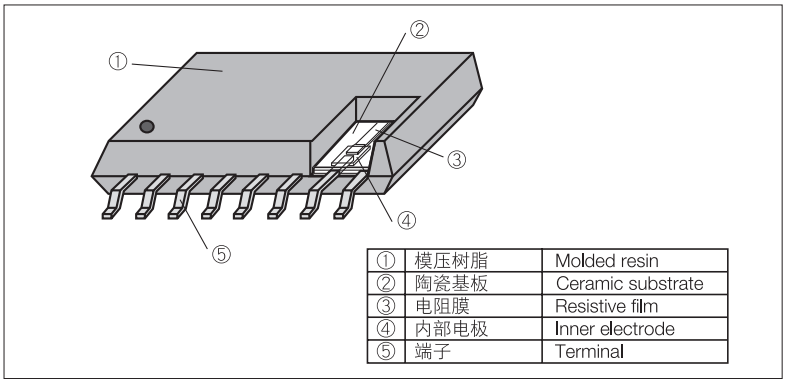
EU RoHS

MRGF16 小型扁平封装型厚膜网络电阻器
Mini Flat Package Type Thick Film Resistor Networks



外观颜色：黑色　Coating color：Black

■ 结构图　Construction



①	模压树脂	Molded resin
②	陶瓷基板	Ceramic substrate
③	电阻膜	Resistive film
④	内部电极	Inner electrode
⑤	端子	Terminal

■ 特点　Features

- 可以和半导体在同一装载机上自动装载。
- 端子节距1.27mm，最多可内藏15个电阻元件。
- 薄型结构，高度2.2mm以下。
- 对应回流焊、波峰焊接。
- 通过模压结构，提高了机械强度和信赖性。
- 对应欧盟RoHS。电极、电阻膜层、玻璃中所含铅玻璃，不包含在欧盟RoHS指令中。内部连接使用欧盟RoHS不适用的焊材。
- The same automatic mounter for semiconductors can be used.
- Max. 15 resistor elements can be built in with a 1.27mm terminal pitch.
- Low profile : 2.2mm or lower.
- Suitable forboth reflow and flow solderings.
- Improved mechanical strength and reliability by molding structure.
- Products meet EU-RoHS requirements. EU-RoHS regulation is not intended for Pb-glass contained inelectrode, resistor element and glass. The solder,which is not applicable to EU-RoHS, is also used for an inner connection.

■ 品名构成　Type Designation

实例　Example

MRGF16	W	T	TE	102	J
品种 Product Code	电路记号 Circuit Symbol	端子表面材质 Terminal Surface Material	二次加工 Taping & Stick	公称电阻值 Nominal Resistance	阻值允许偏差 Resistance Tolerance
	X W D	T:Sn	TE:Plastic embossed ST:Stick	3 digits	G:±2% J:±5%

预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.

■ 参考规格　Reference Standards

IEC 60115-1
JIS C 5201-1

■ 用途　Applications

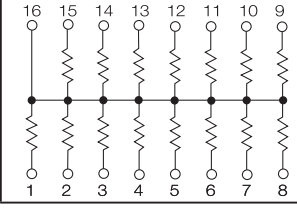
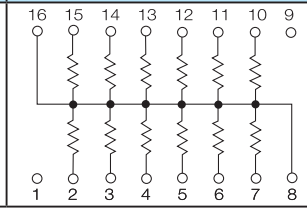
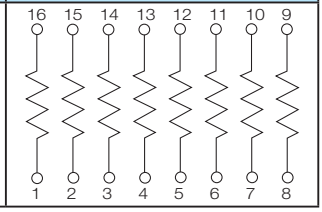
- 数字电路的阻尼、推上/推下电阻。
- Damping resistors and pull-up/pull-down resistors for digital circuits

■ 额定值　Ratings

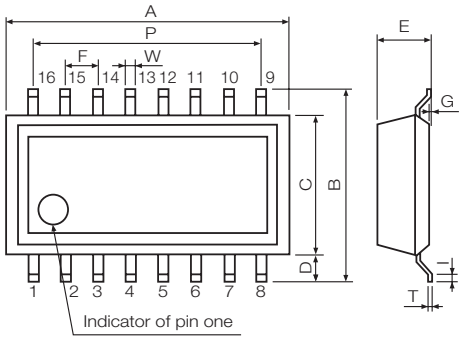
型　号 Type	额定功率 Power Rating (W/Element)	每个配件的额定功率 (W/Package)	电阻值范围 Resistance Range (Ω) E24	阻值允许偏差 Resistance Tolerance	电阻温度系数 T.C.R. (×10⁻⁶/K)	最高使用电压 Max. Working Voltage	最高过载电压 Max. Overload Voltage	额定周围温度 Max. Overload Voltage	使用温度范围 Max. Overload Voltage	编带和包装数/卷 Taping & Q'ty /Reel (pcs)
										TE
MRGF16X	0.031	0.5	22～2.2M	G:±2% J:±5%	±200	50V	100V	+70℃	−55℃～+125℃	2,000
MRGF16D										
MRGF16W	0.063									

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.

■ 电路构成　Circuit Construction

Cicuit Symbol	X	D	W
Circuit			

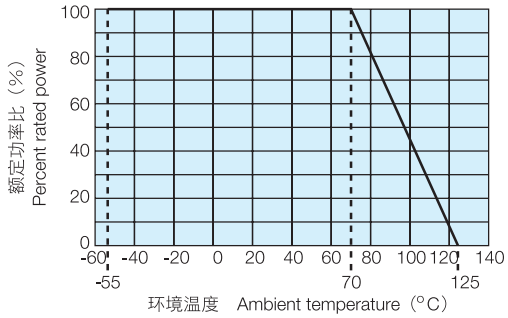
■ 外形尺寸　Dimensions



型号 Type	尺寸　Dimensions （mm）						
	A	B	C	D	E	F	G
MRGF16	11±0.2	7.7±0.2	5.7±0.2	1.0±0.1	2.2Max.	1.27±0.1	0.15±0.05

尺寸　Dimensions （mm）				Weight (g) (1000pcs)
I	T	P	W	
0.3Min.	0.15±0.02	8.89±0.2	0.4±0.05	280

■ 负荷特性曲线　Derating Curve



在环境温度70℃以上使用时，应按照上图负荷特性曲线，减小额定功率。
For resistors operated at an ambient temperature of 70ºC or above, a power rating shall be derated in accordance with the above derating curve.

■ 性能　Performance

试验项目 Test Items	标准值　Performance Requirements ΔR±（%＋0.05 Ω） 保证值　Limit	试验方法 Test Methods
电阻值 Resistance	在规定的允许偏差内 Within specified tolerance	25℃
电阻温度系数 T.C.R.	在规定值以内 Within specified T.C.R.	+25℃/-55℃ and +25℃/+125℃
过载（短时间） Overload（Short time）	0.5	额定电压×2.5倍或最高过载电压中低的一方施加5秒钟。 Rated voltage×2.5 or Max. overload vol. whichever is lower, for 5s
耐焊接热 Resistance to soldering heat	0.5	260℃±5℃, 10s±1s
温度突变 Rapid change of temperature	0.5	-55℃ (30min.) /+125℃ (30min.) 5 cycles
耐湿负荷 Moisture resistance	2	40℃±2℃, 90%～95%RH, 100h 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℃	2	70℃±3℃, 1000 h 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	3	125℃±3℃, 1000h