

RTP35S 功率型厚膜无感电阻器
RTP35S power type thick film non inductive resistor

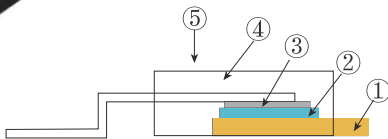
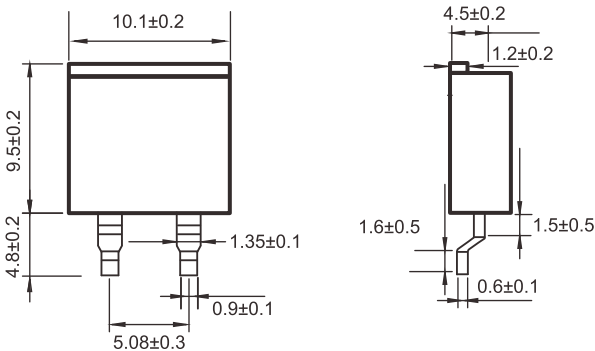
产品简述 (Product Profile)

开关电源、减震器电路、自动机器控制器、射频功率放大器、低能量脉冲负载-UPS、电压调节

Switching Power Supplies、Snubbers Circuits、Automated Machine Controller、RF Power Amplifiers、Low Energy Pulse Loading -UPS、Voltage Regulation



产品尺寸图 (Product Size)



产品特点 (Product Features)

1.安装在散热器，底板中心温度 $\leq 25^{\circ}\text{C}$ ，额定功率35W；在不使用散热片， 25°C 常温下，额定功率是2.5W

2.表面贴装 (SMD) TO-220 模压封装

3.加散热片后，热阻 $R_{th} < 4.28^{\circ}\text{K/W}$

4.可承受回流焊温度 $205^{\circ}\text{C}/10\text{S}$

5.导电部分和金属底板绝缘

1.Installed on the radiator,the center temperature of the bottom plate is $\leq 25^{\circ}\text{C}$, and the rated power is 35W;The rated power is 2.5 watts at room temperature of 25°C with outusing heat sinks

2.Surface mount (SMD)TO-220 molded package

3.After adding heat sinks ,the thermal resistance R_{th} is less than 4.28°K/W

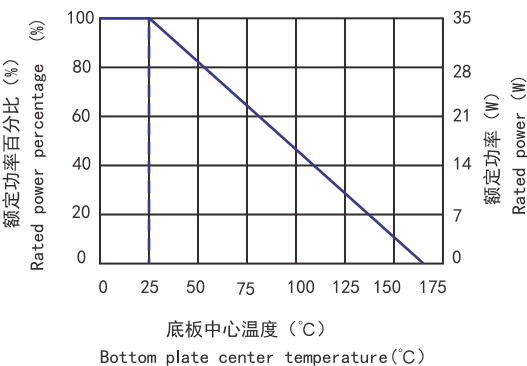
4.Can withstand reflow soldering temperature of $270^{\circ}\text{C}/10\text{S}$

5.Conductive parts and metal substrate insulation

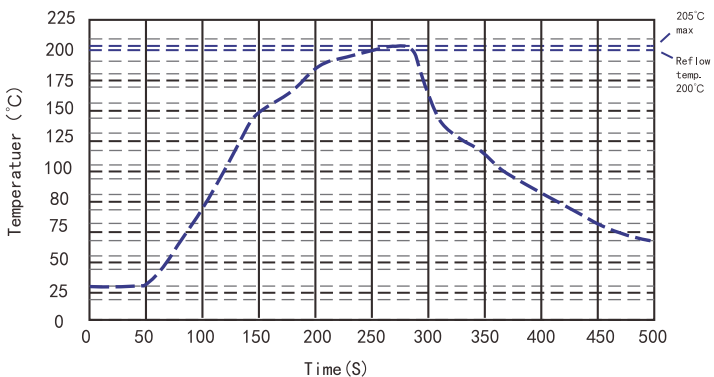
1	铜散热片	Radiator Fin
2	氧化铝基板	Alumina Substrate
3	电阻层	Resistor Layer
4	铜脚	Copper Lead
5	模压封装	Molding

最大工作电压Maximum operating voltage	350V
耐电压Voltage endurance	1800VAC
绝缘电阻Insulation resistance	10GΩmin
工作温度范围Working temperature range	-65 °C to +150 °C

降额曲线 (Deraing Curve)



回流焊曲线图 (Reflow Soldering Curve Diagram)



RTP35 功率型厚膜无感电阻器

RTP35 Power Type Thick Film Non-inductive Resistor

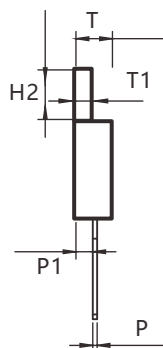
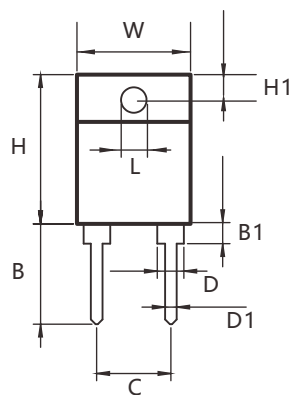
产品简述 (Product Profile)

射频功率放大器、缓冲电路、交换式电源供应、自动化控制器、不间断电源、电压调节、低能量脉冲载入、UPS

RF power amplifier,buffer circuit ,switched power supply, automation controller,uninterruptible power supply,voltage regulation,low-energy pulse loading ,UPS



产品尺寸图 (Product Size)



降额曲线 (Deraing Curve)

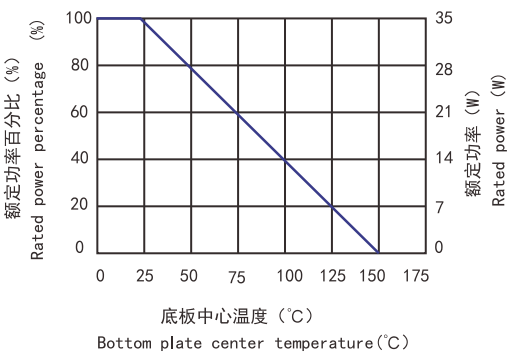
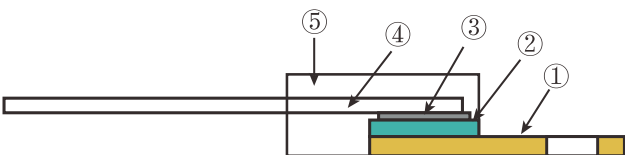
产品尺寸表 (Derating Curve)

型号 Type	W ±0.3	H ±0.5	H1 ±0.1	H2 ±0.3	B ±0.5	B1 ±0.1	D ±0.1	D1 ±0.1	L ±0.1	C ±0.3	T ±0.3	T1 ±0.1	P ±0.1	P1 ±0.1
RTP35	10.1	15.0	3.0	6.35	14.0	3.25	1.35	0.8	3.6	4.3	4.5	1.15	0.60	2.08

产品特点 (Product Features)

- 1.安装在散热器，于25℃时，额定功率达35瓦；在不使用散热片，25℃常温下，额定功率是2.5瓦
 - 2.TO-220 功率型封装
 - 3.只用一颗螺丝，便可以安装于散热器上
 - 4.导电部分和金属底板绝缘，高绝缘度
 - 5.保护性高的模压塑胶封外盒，且易于安装
 - 6.无感设计
- 1.Installed on the radiator,with a rated power of 35 watts at 25 ℃;The rated power is 2.5 watts at room temperature of 25 ℃without using heat sinks
- 2.TO-220 power type package
- 3.The conductive part is insulated from the metal substrate,with
- 4.high insulation level
- 5.Highly protective molded plastic outer box ,and easy to install
- 6.Sensorless design

1	铜散热片	Radiator Fin
2	氧化铝基板	Alumina Substrate
3	电阻层	Resistor Layer
4	铜脚	Copper Lead
5	模压封装	Molding



RTP50 功率型厚膜无感电阻器

RTP50 Power Type Thick Film Non-inductive Resistor

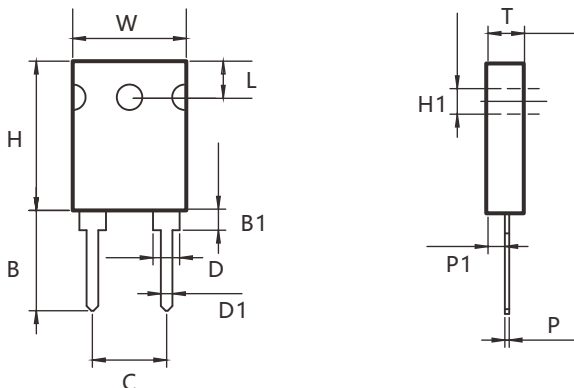
产品特点 (Product Profile)

用于电源供应器的入口端、低能量脉冲负载、射频功率放大器之终端电阻、电压整流器、缓冲电路器、UPS

Used for the inlet end of power supplies, low-energy pulse loads, terminal resistors of RF power amplifiers, voltage rectifiers, buffer circuits, UPS



产品尺寸图(Product Size)

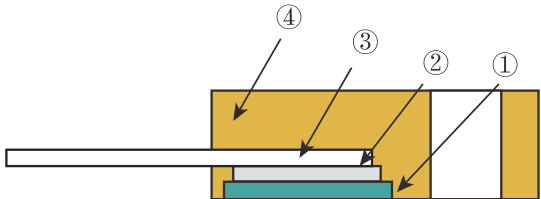


产品特点 (Product Features)

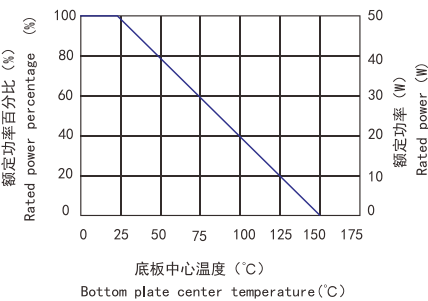
- 1.安装在散热器，于25℃时，额定功率达50瓦；在不使用散热片，25℃常温下，额定功率是3瓦
- 2.TO-220 模压塑封包装
- 3.只用一颗M3（3mm）螺丝，便可以安装于散热器上
- 4.保护性高的模压塑胶封外盒，且易于安装
- 5.高绝缘度
- 6.无感设计

- 1.Installed on the radiator, with a rated power of 50 watts at 25 °C; The rated power is 3 watts at room temperature of 25 °C without using heat sinks
- 2.TO-220 Molded plastic packaging
- 3.Only one M3 (3mm) screw is needed to install it on the radiator
- 4.Highly protective molded plastic outer box, and easy to install
- 5.High insulation degree
- 6.Sensorless design

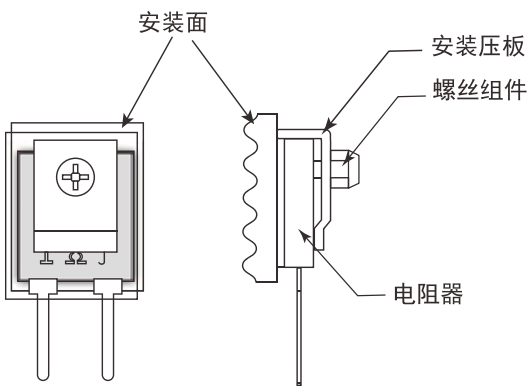
1	氧化铝基板	Alumina Substrate
2	电阻层	Resistor Layer
3	引脚	Lead
4	模压封装	Molding



降额曲线 (Derating Curve)



安装示意图 (Installation diagram)



产品尺寸表 (Derating Curve)

型号 Type	W ±0.3	H ±0.5	H1 ±0.1	B ±0.5	B1 ±0.1	D ±0.1	D1 ±0.1	L ±0.1	C ±0.3	T ±0.3	P ±0.1	P1 ±0.1
RTP50	10.8	15.8	3.18	12.5	3.2	1.35	0.8	3.18	4.3	3.2	0.6	1.6

RTP100 功率型厚膜无感电阻器

RTP100 Power Type Thick Film Non-inductive Resistor

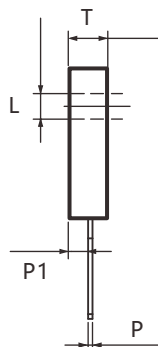
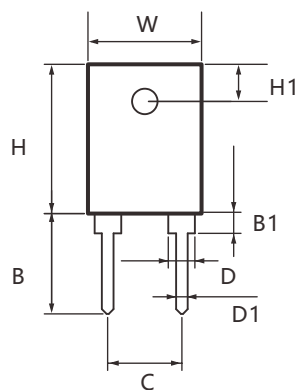
产品简述 (Product Profile)

用于电源供应器的入口端、荧幕映像管的功率负载及泄放电阻、低能量脉冲负载、电压整流器、缓冲电路器、UPS

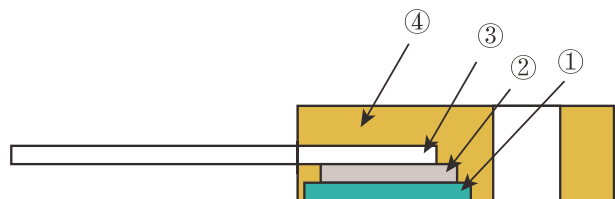
Used for the inlet end of power supply, power load and discharge resistor of screen picture tube, low-energy pulse load, voltage rectifier, buffer circuit, UPS



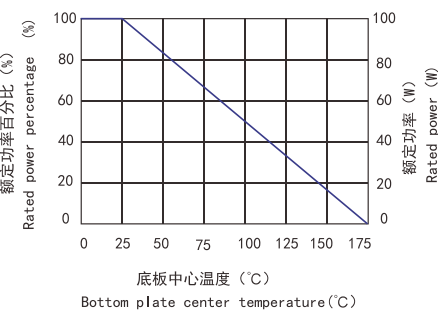
产品尺寸图 (Product Size)



1	氧化铝基板	Alumina Substrate
2	电阻层	Resistor Layer
3	引脚	Lead
4	模压封装	Molding



降额曲线 (Derating Curve)



产品尺寸表 (Derating Curve)

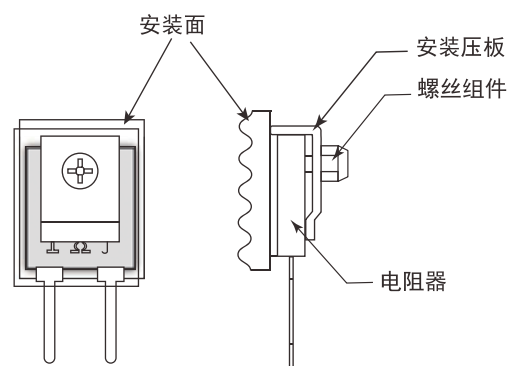
型号 Type	W ±0.3	H ±0.5	H1 ±0.1	B ±0.5	B1 ±0.1	D ±0.1	D1 ±0.1	L ±0.1	C ±0.3	T ±0.3	P ±0.1	P1 ±0.1
RTP100	15.6	20.4	5.4	14	2.4	3.6	1.45	3.6	8.7	4.9	0.6	2.1

产品特点 (Product Features)

1. 安装在散热器, 于25℃时, 额定功率达100瓦; 在不使用散热片, 25℃常温下, 额定功率是3.5瓦
2. TO-247 模压塑封包装
3. 只用一颗螺丝, 便可以安装于散热器上
4. 保护性高的模压塑胶封外盒, 且易于安装
5. 高绝缘度
6. 无感设计

1. Installed on the radiator, with a rated power of 100 watts at 25 °C; The rated power is 3.5 watts at room temperature of 25 °C with out using heat sinks
2. TO-247 molded plastic packaging
3. Only one screw is needed to install it on the radiator
4. Highly protective molded plastic outer box, and easy to install
5. High insulation degree
6. Sensorless design

安装示意图 (Installation diagram)

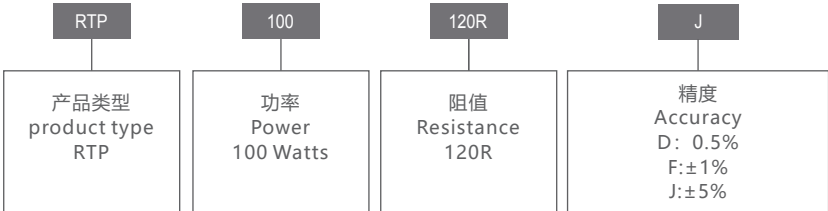


RTP100 功率型厚膜无感电阻器

RTP100 Power Type Thick Film Non-inductive Resistor

测试项目 Testproject	基本要求 BasicRequirements	测试方法 Test Method
短时间过负荷 Shorttermoverload	RTP35S、RTP35、RTP50： △R±0.3%	2 倍额定功率，但不超过最大耐压的1.5 倍，连续5 秒钟 2 times the rated power,but not exceeding 1.5 times the maximum withstand voltage,for 5 consecutive seconds
	RTP100：△R±0.5%	1.5 倍额定功率，但不超过最大耐压的1.5 倍，连续5 秒钟 1.5 times the rated power,but not exceeding 1.5 times the maximum withstand voltage,for 5 consecutive seconds
负载寿命 LoadLife	△R±1.0%	额定功率下2000 小时 2000 hours at rated power
耐湿测试 Humiditytest	△R±0.5%	RTP35S、RTP35、RTP50：40±2℃、90~95%湿度下，在最大工作电压下维持1000 小时（1.5 小时“开”0.5 小时“关”） Maintain 1000 hours at maximum operating voltage at 40 ±2 °C and 90-95%humidity (1.5 hours "on",0.5 hours "off")
		RTP100：-10℃~+65℃，湿度>90%在最大工作电压下维持240 小时 Maintain at maximum operating voltage for 240 hours at 10 °C~+65 °C and humidity>90%
焊接附着性 solderability	90%以上覆盖新锡	245±5℃持续3 秒 245 ±5 °Cfor 3 seconds
热冲击测试 ThermalShock	RTP35S、RTP35、RTP50： △R±0.3% RTP100：△R±0.5%	-65℃~+150℃，100 次循环 -65 °C~+150 °C,100 cycles
引线强度 Leadstrength	△R±0.2%	（拉力测试）2.4 牛顿 (Tensile test)2.4 Newtons
高频震动 High-frequency vibration	RTP35S、RTP35、RTP50： △R±0.2% RTP100：△R±0.4%	20 公克震动 20 grams of vibration
绝缘强度 DielectricStrength	△R±0.15%	1800v AC，60 秒 1800v AC，60 seconds
温度循环 TemperatureCycling	△R±0.3%	-65℃~+150℃，1000 次循环 -65 °C~+150 °C,1000 cycles

选型示例 (Selection Example:RTP100/120RJ)



RTP200 功率型厚膜无感电阻器

RTP200 Power Type Thick Film Non-inductive Resistor

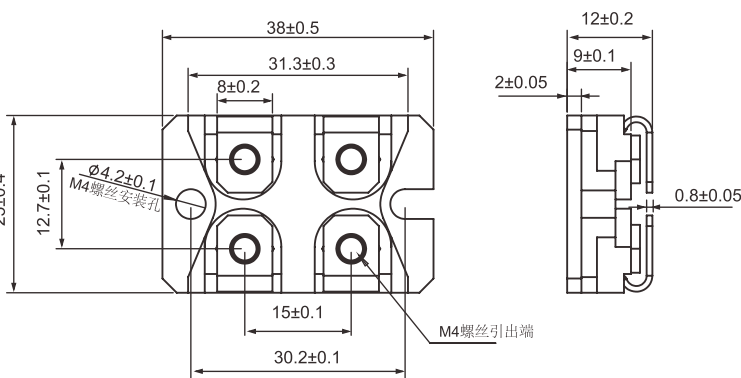
产品简述 (Product Profile)

主要应用于变速驱动器、供电、控制设备、通讯、自动控制、发动机控制等。适合逆变器电路、脉冲电路、高频电路。

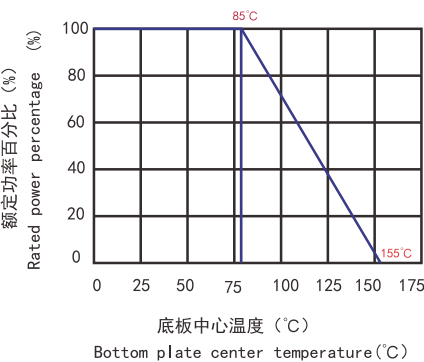
Mainly used in variable speed drives,power supply,control equipment, communication, automatic control, engine control, etc. Suitable for inverter circuits,pulse circuits,and high-frequency circuits.



产品尺寸图 (Product Size)



降额曲线 (Deraing Curve)



性能参数 (Performance Parameter)

型号规格 Model specifications	额定功率 rated power (W)	阻值范围 Resistance range	阻值允许偏差 Resistance Tolerance	电阻温度系数 temperature coefficient (PPM/°C)	最大工作电压 Maximum working voltage U max (V)	耐电压 withstanding voltage (KV /AC)
RTP200	200W	0.1Ω ~ 1 MΩ	±1%、±2% ±5%、±10%	±50、±100、 ±250	500V	4

RTP200 功率型厚膜无感电阻器

RTP200 Power Type Thick Film Non-inductive Resistor

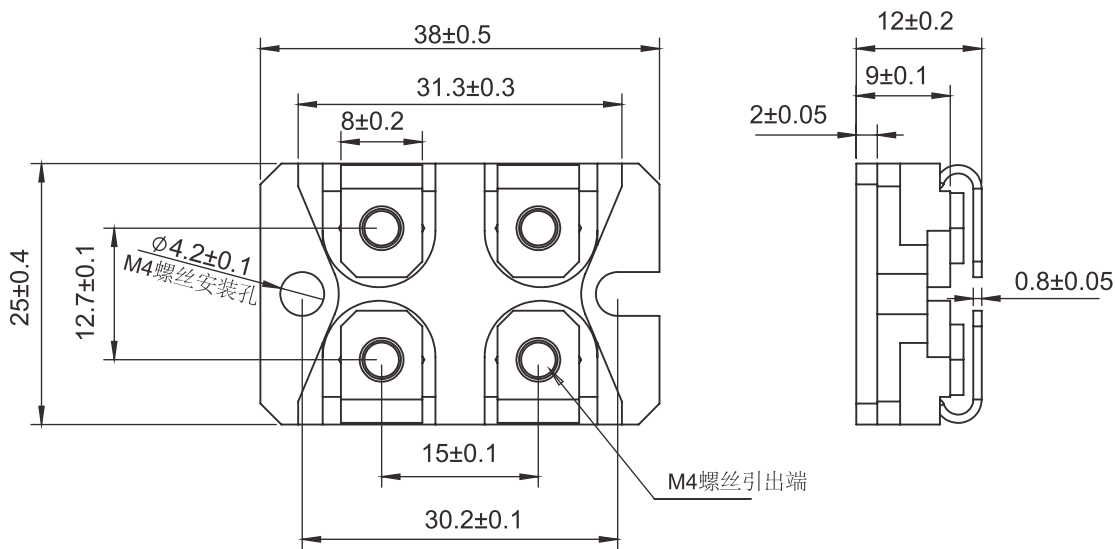
性能指标 (Performance Evaluation)

试验项目 Test items	试验条件 Experimental conditions	性能指标 Performance indicators
温度快速变化 Rapid temperature changes	-55℃~+155℃, 经五次循环; 极限温度暴露时间: 30 分钟; 转换时间: 1~2 分钟 -55℃to+155℃,after five cycles;Extreme temperature exposure time:30 minutes;Conversion time:1-2 minutes	电阻器应无可见损伤且标志清楚, The resistor should have no visible damage and clear markings, $\Delta R \leq \pm (0.5\%R + 0.05\Omega)$
电阻温度系数 Temperature coefficient of resistance	-55℃~+155℃	TCR 在 $\pm 150 \times 10^{-6}/K$ 之内 TCR within $\pm 150 \times 10^{-6}/K$
绝缘电阻 insulation resistance	正常气候条件下, 在电阻器的金属散热板与引出端之间测试绝缘电阻, 试验电压(直流)为500±5V Under normal weather conditions, test the insulation resistance between the metal heat dissipation plate of the resistor and the lead out terminal, with a test voltage (DC) of 500 ± 5V	绝缘电阻应 $\geq 10G\Omega$ The insulation resistance should be $\geq 10G\Omega$
过载 Overload	施加额定功率2 倍的直流电压 ($U_s \leq 1.5U_{max}$) 时间为5s Apply a DC voltage of twice the rated power ($U_s \leq 1.5 U_{max}$) for 5 seconds	电阻器应无可见损伤且标志清楚, The resistor should have no visible damage and clear markings, $\Delta R \leq \pm (0.5\%R + 0.05\Omega)$
稳态湿热 Damp heat steady state	温度: 40±2℃; 湿度95%; 时间: 56 天 Temperature: 40 ± 2 °C; Humidity of 95%; Time: 56 days	电阻器应无可见损伤且标志清楚, The resistor should have no visible damage and clear markings, $\Delta R \leq \pm (0.5\%R + 0.05\Omega)$
寿命 life	施加电压: 额定功率直流电压 ($U_R \leq U_{max}$) 1.5 小时通电, 0.5 小时断电, 总时长1000 小时 Applied voltage: rated power DC voltage ($U_R \leq U_{max}$), powered on for 1.5 hours, powered off for 0.5 hours, total duration 1000 hours	电阻器应无可见损伤且标志清楚, The resistor should have no visible damage and clear markings, $\Delta R \leq \pm (0.5\%R + 0.05\Omega)$
耐电压 withstanding voltage	施加交流有效值电压4000V, 时间为1 分钟±5 秒 Apply an effective AC voltage of 4000V for 1 minute ± 5 seconds	电阻器无击穿或飞弧现象, 漏电流 $\leq 10mA$ The resistor has no breakdown or arcing phenomenon, and the leakage current is $\leq 10mA$
振动 vibrate	按GB/T2423.10-2019 要求进行试验, 振动频率为10Hz, 振幅0.35mm, 加速度50m/s ² , 每个方向2 次扫频, 3 个方向, 每个方向持续时间23 分钟 Conduct the test according to the requirements of GB/T2423.10-2019, with a vibration frequency of 10Hz, amplitude of 0.35mm, acceleration of 50m/s ² , 2 frequency scans in each direction, 3 directions, and a duration of 23 minutes in each direction	电阻器塑封体应无机械损伤, 阻值变化在 $\pm 2\%R + 0.05\Omega$ 之内 The plastic casing of the resistor should have no mechanical damage, and the resistance change should be within $\pm 2\%R + 0.05\Omega$

RTP200 功率型厚膜无感电阻器

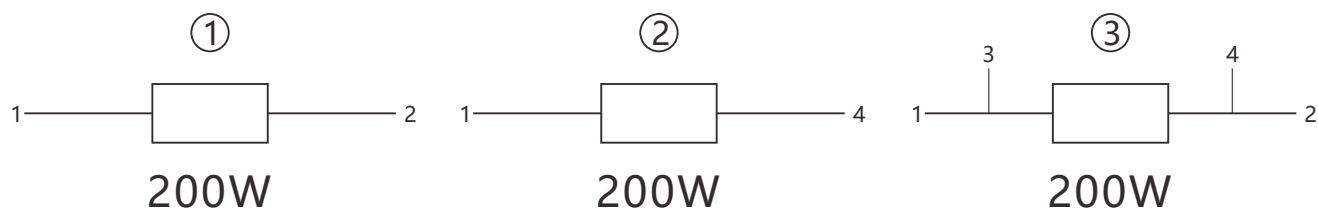
RTP200 Power Type Thick Film Non-inductive Resistor

规格参数 (Specification Parameter)



左下角引出端为1号引出端，按顺时针旋转分别为3号、4号、2号引出端
The lead out terminal in the lower left corner is the first lead out terminal, which rotates clockwise to become the second, third, and fourth lead out terminals, respectively

电路结构图 (Circuit Structure Diagram)



选型示例 (Selection Example: RTP 200W 40RJ)

RTP200	3	40R	J
型号 Model	电路结构 Circuit	阻值 Resistance	精度 Accuracy F: ±1% G: ±2% J: ±5% K: ±10%

注意事项 (Points For Attention)

1.电阻器通过M4 螺丝安装在散热器上，螺丝安装扭矩为2N.m，应确保产品安装紧固，无晃动。另外应为螺丝配套防松组件，如：平垫、弹垫、防松螺母等。

2.电阻器引出端电气安装使用的是M4 螺丝，螺丝安装扭矩为1.3N.m，应确保电气连接紧固，无晃动。另外应为螺丝配套防松组件，如：平垫、弹垫等，防止振动造成电气连接松脱。

3.电阻器与安装面之间需要均匀的涂覆一层导热硅脂，推荐使用导热系数1W/mK 的导热硅脂产品。

4.产品在贮存期间，应贮存在环境温度为-10℃ ~ +45℃，相对湿度不大于85%，通风、干燥、周围无酸碱或其他有害物质的仓库内。

1.The resistor is installed on the heat sink with M4 screws,and the installation torque of the screws is 2N.m.It should be ensured that the product is installed firmly without shaking.In addition,screws should be equipped with anti loosening components such as flat washers,spring washers,anti loosening nuts,etc.

2.M4 screws are used for the electrical installation of the resistor lead out end,with a torque of 1.3N.m.It should be ensured that the electrical connection is tight and there is no shaking.In addition,screws should be equipped with anti loosening components, such as flat washers,spring washers,etc.,to prevent electrical connections from loosening due to vibration.

3.A uniform layer of thermal grease should be applied between the resistor and the installation surface.It is recommended to use thermal grease products with a thermal conductivity of 1W/mK.

4.During storage,the product should be stored in a warehouse with an ambient temperature of -10 °Cto+45 °C, a relative humidity of no more than 85%,ventilation,dryness,and no acidic,alkaline,or other harmful substances around it