

SQM 立式水泥电阻器 Vertical Cement Fixed Power Resistor	文件编号 Document No.	YF-SE-02-17D/A01
	文件日期 Released Date	2022/3/28
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■ 产品特性 Product Feature

- 高负荷、散热特性、不燃性;
High load, heat-sink performance, non-flame ;
- 高频特性好、抗脉冲性;
Stable performance of high voltage, pulsing load;
- 符合环保要求 RoHS compliant, halogen free, lead free;
- 防护等级 INGRESS PROTECTION: IP53;

■ 产品引用范围 Application

- 家电/音响系统 Entertainment system;
- 电源系统/充电设备 Power supply;
- 工业/自动化行业 Industrial/automation system;
- 变频控制/数控设备 VFD control/CNC equipments;

■ 产品订货方式 Parts Number Explanation

SQM	-	10W	-	100R	-	J	-	
类型		功率		特性(可选)		阻值		误差
Product		Rated		Feature		Resistance		Tolerance
Type		Power		(Optional)				Packing
		1W		N/A:Normal		0R47=0.47Ω		F:±1%
		3W		S:Small volume		2R7=2.7Ω		G:±2%
		5W		N:Non-inductive		15R=15Ω		J:±5%
		7W		...		510R=510Ω		K:±10%
		...				1K2=1.2KΩ		
		20W				75K=75KΩ		

■ 环保申明 RoHS declaration

本产品符合 RoHS 2.0(2011/65/EU)环保要求。

The products meet the standards of RoHS 2.0(2011/65/EU).

■ 参考标准 Reliability standard

可焊性 Weldability Standard:

IEC60068-2-20

环境标准 Environment Standard:

SJ/T 11363-2006, ROHS 2011/65/EU

检验标准 QC standard:

MIL-STD-105E, GB/T 2828.1-2003

产品性能 Performance:

IEC60115-2008, GB/T5729-2003

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■标准产品规格 Standard voltage parameters

功率 Rated Power At 70℃	阻值 Resistance (Ω)	最高使用电压 Max. Working Voltage(U _R)	最高超载电压 Max. Overload Voltage(U _L)	绝缘电压 Insulation Voltage(U _N)	温度系数 T.C.R. (PPM/℃)	工作温度 Operating Temperature
1W	0.1~500K	150V	250V	1000V	T100:±100 ~ T1000:±1000	-55℃ ~ +275℃
3W	0.1~500K	250V	350V	1000V		
5W	0.1~500K	350V	700V	1000V		
7W	0.1~500K	500V	1000V	1000V		
10W	0.1~500K	500V	1000V	1500V		
15W	0.1~500K	500V	1000V	1500V		
20W	0.1~500K	500V	1000V	1500V		

●额定电压 Rating Voltage:

额定功率对应的额定电压,直流(DC)或交流电流(AC),可以采用如下公式计算。当计算的额定电压超过最高使用电压时,则使用最高使用电压为额定电压。

The following equation may be used to determine the DC(Direct Current) or AC(Alternating Current)(RMS, root mean square value) of normal rated power. However, if the result value exceeds the max. using voltage, the max. using voltage is to be used:

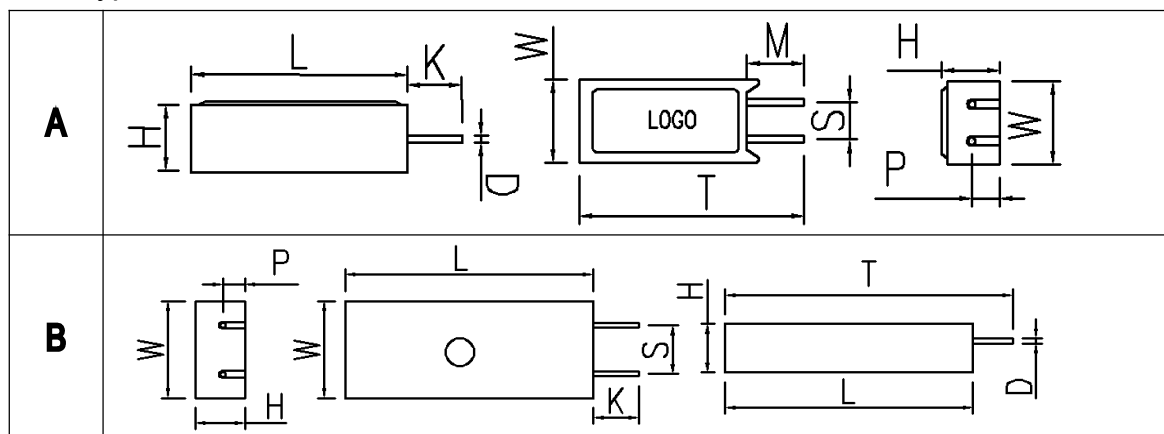
$$U_P = \sqrt{P \times R}$$

U_P: 额定电压 Rating voltage (V)

P: 额定功率 Rating Power (W)

R: 电阻值 Resistance(Ω)

■产品尺寸 Type dimension



规格 Type	尺寸 Dimension(mm)							N. W. (g)
	L±1.0	W±0.5	H±0.5	K±1.0	S±1.0	D±0.5	T-max	
1W	10	10	5.2	5	5	0.65	20	
3W	25	12	8	5	5	0.75	35	6.5
5W	25	13	9	5	5	0.75	35	7.5
7W	39	13	9	5	5	0.75	50	12.0
7WS	35	13	9	5	5	0.75	45	10.5
10W	51	13	9	5	5	0.75	60	15.0
10WS	35	16	12	5	8	0.75	45	15.8
20W/A	50	20	10	5	11	0.75	60	20.0
20W/B	50	20	10	5	10	0.75	60	21.0

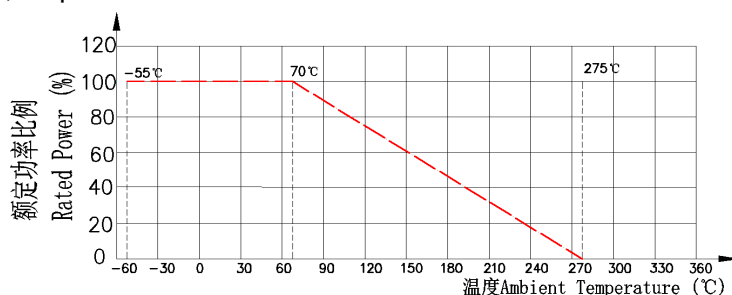
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■ 产品特性 Product parameter

● 额定功耗 Power Derating Curve:

额定功率是周围温度 70℃ 以下(推荐工作区域), 可连续使用的负载功率的最大数值, 且应使机械性能与电气性能满足. 如周围温度超过 70℃ 时, 依照下图功率衰减曲线而定。

Rated power is the highest using power under 70℃ and continuous duty. At the same time, the overload power is fit for mechanical properties and electrical properties. When the temperature is over 70℃, the power must be derated in accordance with the curve as below:



● 产品特性 Product reliable performance:

测试项目 Test Item	测试方法 Test Method	测试方法 Procedure	测试标准 Requirements										
绝缘阻值 Insulation resistance	IEC60115-1 4.6	DC500V, R>100MΩ	△R/R≤±0.5%										
绝缘耐压 Voltage proof	IEC60115-1 4.7	U _N , 60S, I≤1mA.	△R/R≤±1%										
温度系数 Temperature coefficient	IEC60115-1 4.8	$T.C.R. = \frac{R - R_0}{R_0} \times \frac{1}{T - T_0} \times 10^6$ (PPM/°C) R₀:常温下(T₀)的阻值 Resistance at room temperature(T₀); R: 测试温度(T=T₀+100)的阻值 Resistance at T=T₀+100;	根据产品额定参数 Refer to Ratings										
短时间过负载 Short Time Overload	IEC60115-1 4.13	Min($\sqrt{10 \times W \times R}$, U _R), 5s	△R/R≤±2.0%										
本体强度 Body robustness	IEC60115-1 4.15	电阻体中间，加载 10N 的压力，时间 10 秒 Central part pressurizing force:10N, 10seconds	无损伤 No damage										
端子强度 Terminal robustness	IEC60115-1 4.16	端子加载 20N 拉力，时间 10 秒； Pressurizing force: 20N, 10 seconds	无损伤 No damage										
可焊锡性 Solderability	IEC60115-1 4.17	245±5℃, 5±0.5S	≥95%										
耐焊锡热 Soldering Heat	IEC60115-1 4.18	350±5℃, 3S±0.5S	△R/R≤±0.5%										
温度循环 Temperature Cycle	IEC60115-1 4.19	如下循环 Cycle Below: <table><tr><td>温度 Temperature</td><td>25℃</td><td>125℃</td><td>25℃</td><td>-25℃</td></tr><tr><td>时间 Duration</td><td>15min</td><td>15min</td><td>15min</td><td>15min</td></tr></table>	温度 Temperature	25℃	125℃	25℃	-25℃	时间 Duration	15min	15min	15min	15min	无损坏 No damage △R/R≤±0.5%
温度 Temperature	25℃	125℃	25℃	-25℃									
时间 Duration	15min	15min	15min	15min									
耐振性 Vibration	IEC60115-1 4.22	10~55HZ/0.75mm/2H*3	无损伤 No damage										
高温存储 High Temp. Exposure	IEC60115-1 4.23	125℃, 80%, 500H	无损伤 No damage										
耐久性 Endurance	IEC60115-1 4.25	Min(U _P , U _R), 1.5H- ON, 0.5H-OFF, 1000H	△R/R≤±5%										
不燃特性 Noninflammability	UL94-V0	16*U _P ,,5min,	无燃烧现象 No flame										