产品特点与应用 Features and applications



- **高功率、耐冲击及功耗小；**

  High power, shock resistant, low power loss;

- **耐高温、低温漂及高精度稳定性强；**

  High temperature endurance, ultra-low TCR, high precision & superior stability;

- **工作温度范围：-65℃ ~ +170℃；**

  Operating temperature range: -65℃ ~ +170℃;

- **无铅，符合 ROHS 要求，可非标定制；**

  Lead free, ROHS compliant, Customizable;

- **符合 AEC-Q200 特性测试。**

  AEC-Q200 qualified.

主要应用于 Applications：

- **电子电路中的电流采样和过流保护；**

  Current sampling and overcurrent protection in electronic circuits;

- **新能源汽车控制电路和充电桩电路/传统汽车控制电路；**

  New energy vehicle control circuit and charging station circuit/ traditional vehicle control circuit;

- **变频器及伺服电机控制电路；**

  Inverter and servo motor control circuit;

- **开关电源、测量及测试仪器；**

  Switching power, measuring and testing instruments;

- **锂电池、太阳能及通讯电源等控制电路；**

  Control circuits for lithium batteries, solar energy, and communication power sources;

- **家用电器等多个领域。**

  Household appliances, etc.

EU3921 合金电阻产品规格书

EU3921 Alloy Resistor specification

规格型号 Part Number Information

EU 39 0M50 P1 F 7 T

【1】【2】【3】【4】【5】【6】【7】

1	2	3	4	5	6	7
系列 Categor	尺寸 Size	电阻值 Resistance	功率 Power	精度 Tolerance	温度系数 TCR	包装 Package
EU	3921	0m10=0.1 mΩ 0m50=0.5 mΩ R001=1 mΩ R010=10 mΩ	P1=1W P9=9W PA=10W PF=15W	D=±0.5% F=±1% G=±2% J=±5%	1=±10-19 ppm/℃ 2=±20-29 ppm/℃ 5=±50-59 ppm/℃ 7=±70-79 ppm/℃ A=±100-109ppm/℃ G=±170-179ppm/℃	B=散装 bulk T=卷盘 reel P=托盘 tray

电气特性 Electrical characteristics

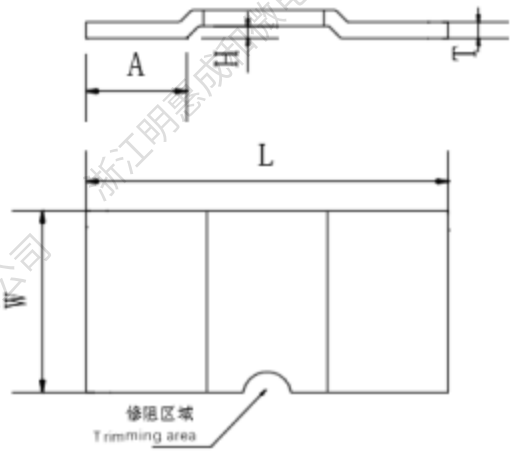
系列 Category	尺寸 Size	电阻(mΩ) Resistance	材料 Material	P70℃ Power (W)	温度系数（ppm/℃） TCR
EU	3921	0.1	MnSn	12	±300
		0.2		12	±175
		0.25		9	±175
		0.3	Mn	12	±175
		0.4		9	±175
		0.5		12	±175
		0.7		9	±175
		1		9	±75
		1	Fe	9	±75
		1.5		5	±75
		2		5	±75
		3		5	±75
		4		5	±75
		5		5	±75

浙江明惠成和微电子有限公司

EU3921 合金电阻产品规格书

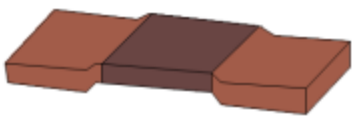
EU3921 Alloy Resistor specification

外形尺寸 Outline dimension



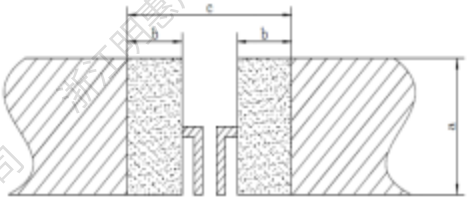
系列 Category	尺寸 Size	电阻(mΩ) Resistance	L(mm)	W(mm)	H(mm)	A(mm)	T(mm)
EU	3921	0.1	10.00±0.20	5.20±0.20	0.5±0.13	3.30±0.20	1.42±0.10
		0.2	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	1.35±0.10
		0.25	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	1.05±0.10
		0.3	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	1.35±0.10
		0.4	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	1.05±0.10
		0.5	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.86±0.10
		0.7	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.60±0.10
		1	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.43±0.10
		1.5	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.92±0.10
		2	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.72±0.10
		3	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.48±0.10
		4	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.34±0.10
		5	10.00±0.20	5.20±0.20	0.5±0.13	2.00±0.20	0.25±0.10

标识方式 Marking



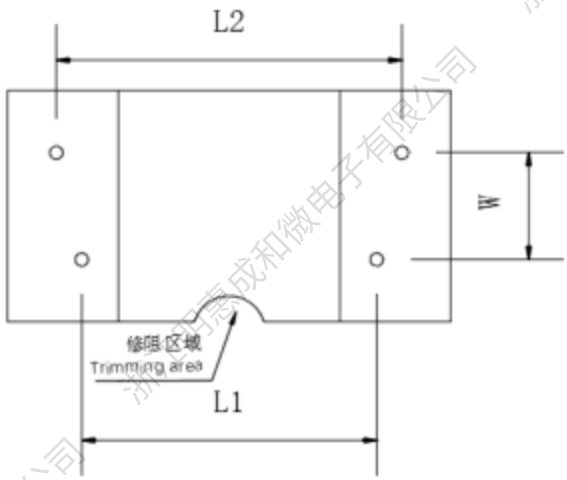
No marking

焊盘尺寸 Pad Size



系列 Category	尺寸 Size	c/mm	b/mm	a/mm
EU	3921 ＞0.1mΩ	11	2.7	6.2
	3921-0.1mΩ	11	4.0	6.2

测试点位置 Test Point



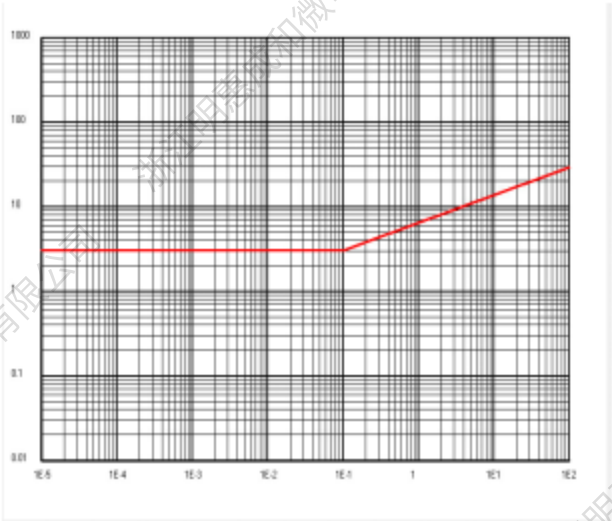
系列 Category	尺寸 Size	电阻(mΩ) Resistance	L1(mm) 电压脚 Voltage pin	L2(mm)电流脚 Current pin	W(mm)
EU	3921	>0.1	7.5	8.7	1.8
		0.1	5.1	7.8	2.4

试验和要求 Tests and Requirements

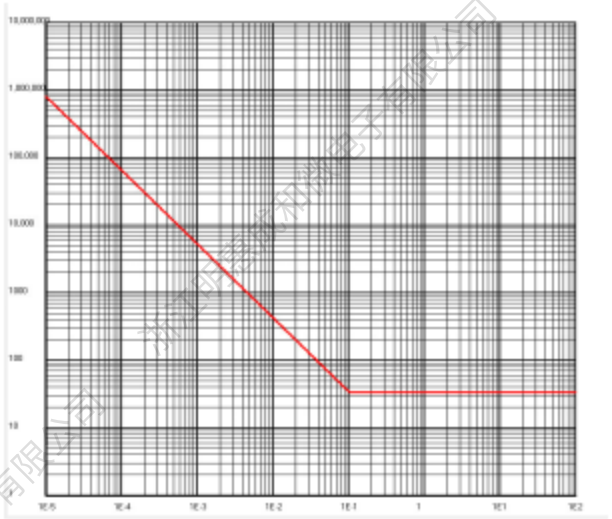
NO.	测试项目 Test Item	条件 Test Condition	阻值变化极限 Limit	参考标准 Reference
1	阻值 Resistance	在室温 25℃±5℃下测量电阻值 Measured at room temperature 25℃±5℃	在规定值内 Within Spec.	IEC60115-1 6.1
2	温度系数 TCR	测量点 25℃和+125℃ Measurement 25℃,+125℃, reference+25℃	在规定值内 Within Spec.	MIL-STD-202 Method 304
3	短时过载 Short time overload	5 倍额定功率，5s 5 times of the rated power for 5 seconds	|ΔR|≤±（1%+0.0005Ω）	IEC60115-1 8.1

4	高温存储 High Temperature Exposure	1000 小时 170℃，不加载 1000 hours@170℃，Un-powered	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 Method 108
5	温度循环 Temperature cycling	-55℃(15 min)+155℃(15min)，1000 循环 Dwell Time 15 minutes,1000 cycles	|△R|≤±（1%+0.0005Ω）	JESD22 Method JA-104
6	负荷寿命 Operational Life	70℃± 2℃，额定功率通电 1.5H，断电 0.5H,1000H 70℃± 2℃,1000 hours at 70±2℃, applied rated power, 1.5 hours on, 0.5 hour off	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 Method 108
7	耐溶剂性 Resistance to Solvents	超声波异丙醇 5min Immerse into isopropyl alcohol for 5 minutes with ultrasonic at room temperature	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 215
8	基板弯曲 Board Flex	弯曲距离：2mm,60+5s Distance:2mm,60+5s holding time	|△R|≤±（1%+0.0005Ω）	AEC-Q200-005
9	终端强度 Terminal Strength	侧面施加力 17.7N，60+1s Terminal Strength Applied a force to the sied of a device gradually，17.7N ,60S+1s	|△R|≤±（1%+0.0005Ω）	AEC-Q200-006
10	机械冲击 Mechanical Shock	100 g's，6 ms，半正波: 12.3ft/s Half-sine; Velocity change: 12.3ft/s 各方向 3 次（18 次） 3 shocks in each direction along the 3 mutually perpendicular axes(totally 18 times)	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 Method 213
11	震动试验 Vibration	10 Hz 到 2000 Hz，20min, 3 轴，12 周期 5g's for 20 minutes, 10Hz~2000Hz, 12cycles each of 3 orientations	|△R|≤±（0.5%+0.0005Ω）	MIL-STD-202 Method 204
12	耐焊接热 Resistance to Soldering Heat	Reflow 260℃ 3 次 times	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 Method 210
13	可焊性 Solderability	Reflow 260℃ 1 次 times	覆盖率≥95% 95% Coverage Minimum	J-STD-002
14	高温高湿 Biased Humidity	+85℃, 85% RH, 10%额定功率, 1000 h 10 % of rated power, 1000h	|△R|≤±（1%+0.0005Ω）	MIL-STD-202 Method103

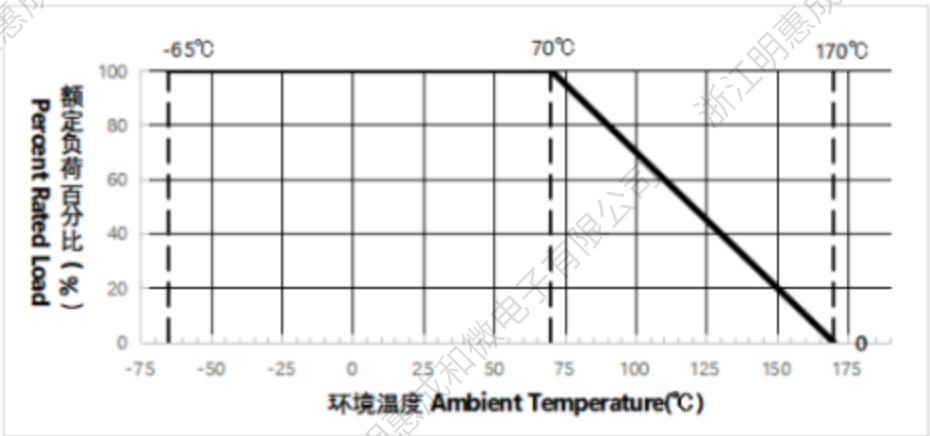
脉冲能量图 EUlse Energy Pattern



脉冲功率图 EUlse Power Diagram

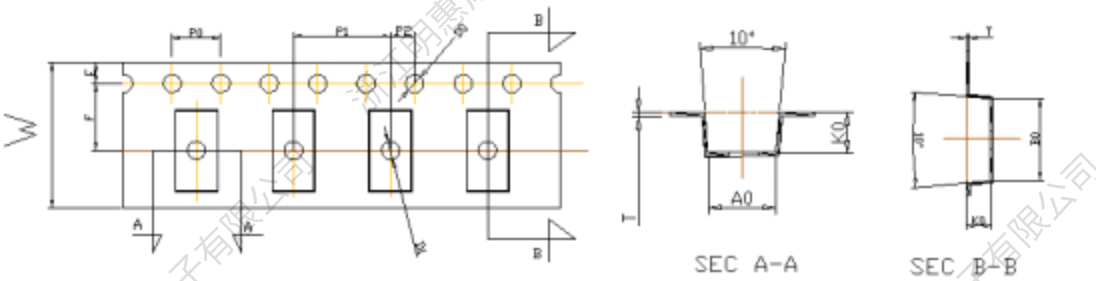


降耗曲线 Derating Curves of Dissipation



包装 Packaging

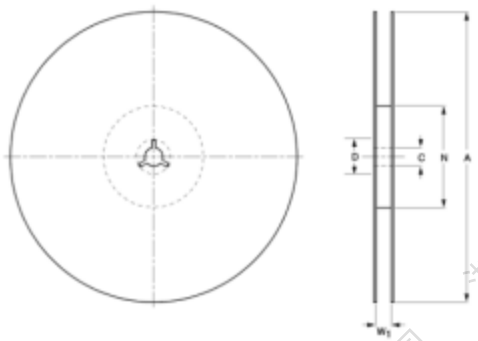
1.载带尺寸 Embossed Tape Dimensions



系列 Category	尺寸 Size	A0(mm)	B0(mm)	W(mm)	E (mm)	F (mm)	T(mm)
EU	3921	5.65±0.10	10.50±0.10	24.00±0.30	1.75±0.10	11.50±0.10	0.30±0.05
		P0(mm)	P1(mm)	P2(mm)	D0(mm)	D1(mm)	K0(mm)
		4.00±0.10	12.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	1.50±0.10

系列 Category	尺寸 Size	A0(mm)	B0(mm)	W(mm)	E (mm)	F (mm)	T(mm)
EU	3921	5.50±0.10	10.30±0.10	24.00±0.30	1.75±0.10	11.50±0.10	0.30±0.05
		P0(mm)	P1(mm)	P2(mm)	D0(mm)	D1(mm)	K0(mm)
		4.00±0.10	12.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	2.00±0.10

2.卷盘尺寸 Reel Dimensions



系列 Category	尺寸 Size	A(mm)	N(mm)	C(mm)	D(mm)	W1 (mm)
EU	3921	330.0±2.0	100.0±1.0	13.5±0.5	21±0.8	24.2+2/-0

3. 包装数量 Quantity of Package

系列 Category	尺寸 Size	电阻(mΩ) Resistance	卷盘尺寸 Reel size	数量(pcs) Quantity(pcs)
EU	3921	0.1	330.0±2.0	2000
		0.2		2500
		0.25		
		0.3		
		0.4		
		0.5		3000
		0.7		
		1		
		1.5		
		2		
		3		
		4		
		5		

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