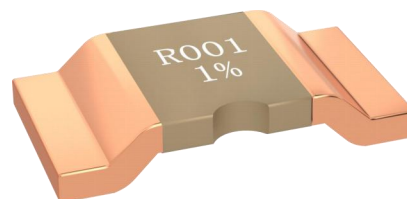


特征 Features

精度±5%、±2%、±1%和±0.5%	Tolerance ± 5%, ±2%, ± 1% and ±0.5%
使用温度-65℃ ~170℃	Operating Temperature range -65℃ ~170℃
焊接结构	Welding constructure
耐冲击	Ideal for pulse application
电感小于 3 纳亨	Low Inductance < 3nH
符合ROHS,REACH要求	REACH,RoHS compliant
特殊规格可以订做	Customizable
符合AEC-Q200	AEC-Q200 qualified



应用范围 Applications

变频驱动、伺服驱动系统	Frequency conversion drive, servo drive system
大电流电池管理系统	High current battery management system
汽车电子控制单元、汽车油泵驱动	Automobile electronic control unit automobile oil pump drive
DC/DC, DC/AC电源模块	DC/DC, DC/AC power modules
自动化控制系统	Automatic control system
工业仪器设备	Industrial instrument and equipment

订购信息 Ordering information

ASR	-K	-5	-1	
Yezhan Type	Element Material	Dimension (in)	Resistance Value(mΩ)	Tolerance (%)
ASR	S: CuMnSn M: CuMn K: Karma F: FeCrAl	3: 2512 5: 3920 7: 5930	1: 1mΩ	J: ±5 G: ±2 F: ±1 D: ±0.5

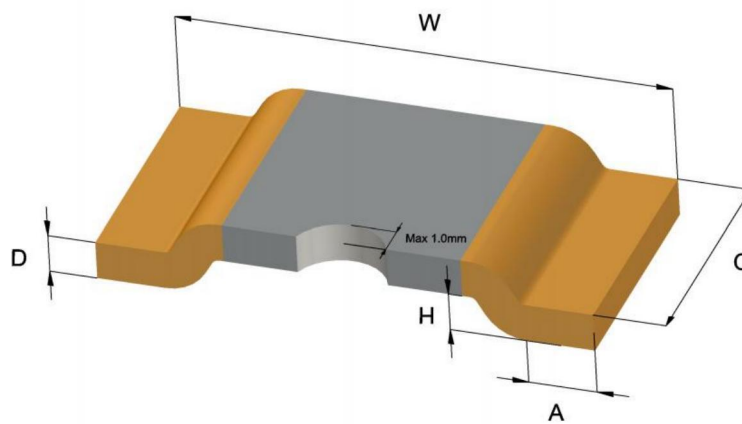
说明 Notice

■ 适用范围 Scope

■ 标准试验状态 Standard measuring conditions

■ 温度20±2℃、湿度65±5%。但在温度 5~35℃、湿度45~85%之情况下，仍可给予判定。

Temperature 20±2℃, Humidity 65±5%.Being no doubt about the judgment, measurements can be made within the following Temperature5~35℃, Humidity 45~85%.

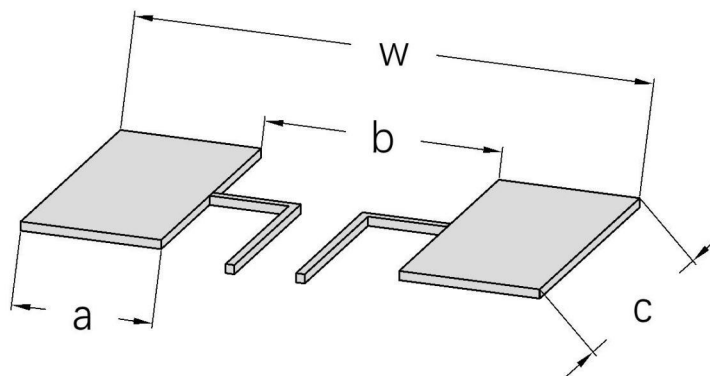
产品尺寸 Product dimensions


(Unit : mm)

Type	Size (in)	W	A	C	H
ASR-S/M/K/F-3	2512	6.3 ± 0.2	1.2 ± 0.2	3.1 ± 0.3	0.5 ± 0.1
ASR-S/M/K/F-5	3920	10.0 ± 0.2	2.2 ± 0.2	5.1 ± 0.4	
ASR-S/M/K/F-7	5930	15.0 ± 0.3	4.2 ± 0.3	7.6 ± 0.4	

PCB板布局 PCB-layout (Reflow-soldering)

(Unit : mm)



Solder pad type	w	c	a	b
ASR-S/M/K/F-3	7	3.4	1.8	3.4
ASR-S/M/K/F-5	11	6.2	2.7	5.6
ASR-S/M/K/F-7	16	8.75	5.2	5.6

技术参数 Technical Data

Size (in)	Resistance Range (mΩ)	Resistance Alloy	Resistance (mΩ)	Rthi (°C/W)	D±0.1 (mm)	*TCR (ppm/°C)	P ₇₀ °C (W)
2512	0.2~5	S	0.2	3	1.4	±175	6
		M	0.3	5	1.5	±175	6
			0.5	6	0.93	±115	6
			1	10	0.45	±100	6
		K/F	1.2	-	1.08	±70	6
			1.5	-	0.86	±70	6
			2	15	0.65	±70	6
			2.5	-	0.5	±70	4
			3	24	0.43	±70	4
			4	27	0.31	±70	4
			5	40	0.28	±70	3
3920	0.2~5	M	0.2	3	1.64	±200	12
			0.3	3.5	1.37	±150	10
			0.4	-	0.97	±100	9
			0.5	7	0.83	±70	9
			0.7	9	0.55	±70	8
			1	10	0.4	±50	7
		K/F	1	7	1.16	±50	8
			1.5	-	0.75	±50	6
			2	14.5	0.6	±50	6
			2.5	-	0.47	±50	5
			3	22	0.37	±50	5
			4	24	0.28	±50	5
			5	-	0.28	±50	5

续表

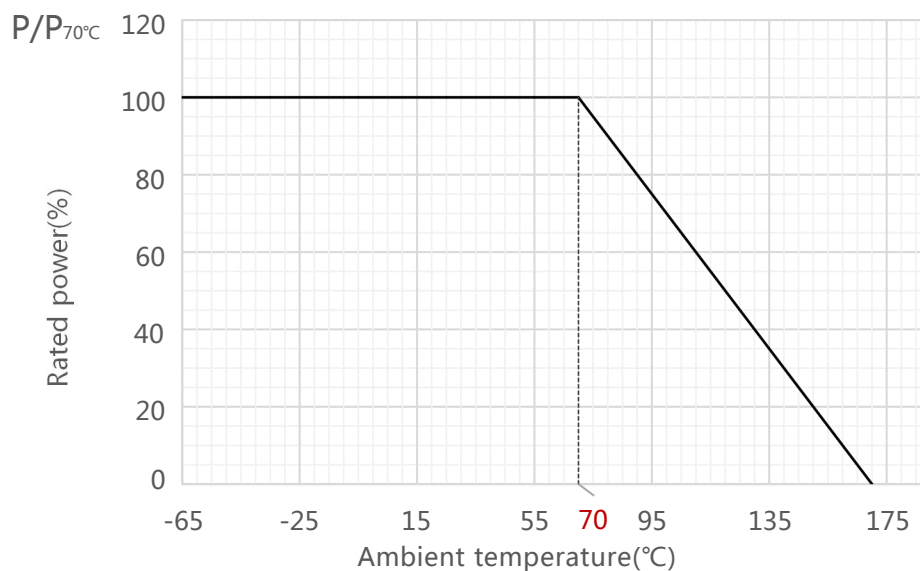
5930	0.1~3	S	0.1	2	2.0	±200	15
		M	0. 2	3	1.5	±100	15
			0.3	-	0.98	±100	10
			0.35	-	0.83	±100	10
			0.4	-	0.75	±100	10
			0. 5	3.5	0.6	±75	10
			0.6	-	0.5	±75	10
			0.75	6	0.41	±75	10
			K/F	1	7	0.86	±50
		1.5		10	0.61	±50	8
		2		13	0.4	±50	7
		2.5		-	0.34	±50	7
		3		17.5	0.29	±50	7
TCR (ppm/°C) : Test was conducted with the temperature from 20°C to 120°C , while 20°C worked as reference.							

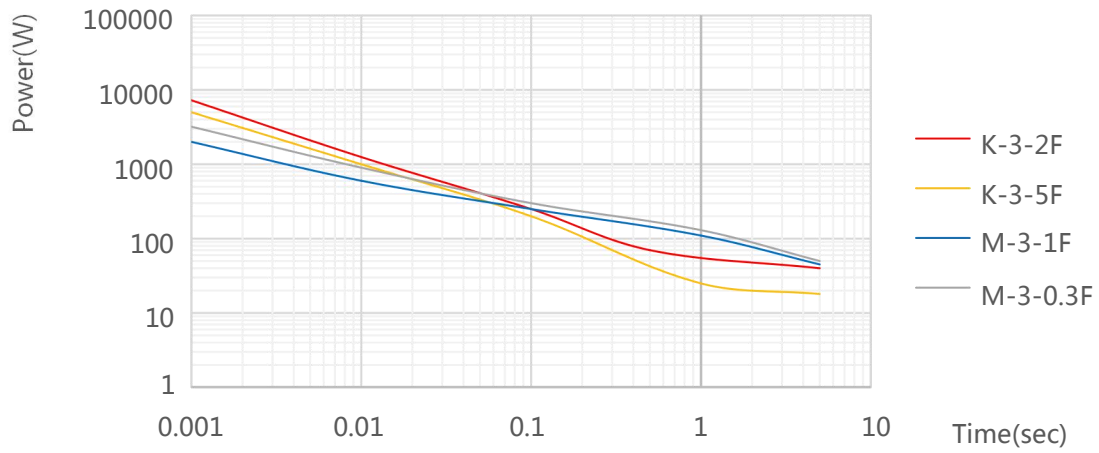
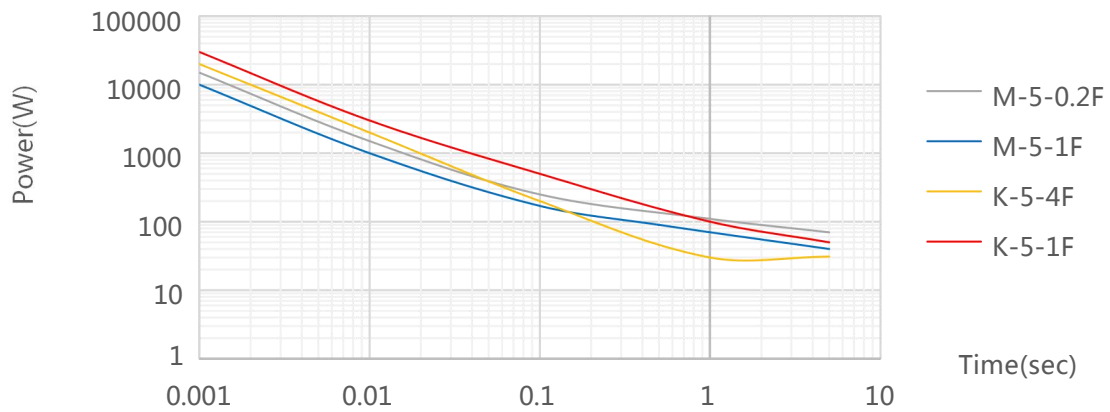
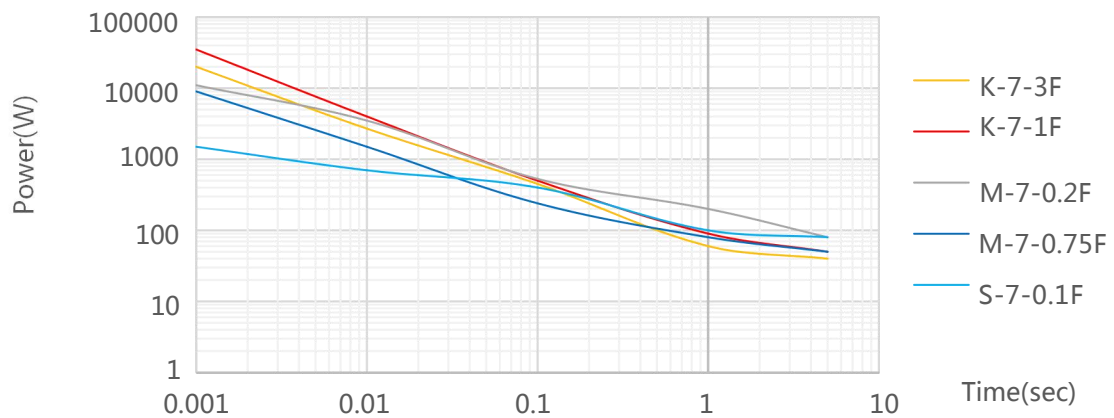
备注: K材质产品温漂低至10ppm/°C, 参看ASHP-K系列。

Note: TCR of productes with K material could be lower to 10ppm/°C, please see ASHP-K series.

工作特性 Performance Data

功率降额曲线 Power derating curve



脉冲功率曲线 Pulse power curve
ASR-2512

ASR-3920

ASR-5930


耐久性测试 Endurance Test

Items	Additional Requirements	Reference	Limits
High Temperature Exposure	1000 hrs. (T=170°C) , unpowered. Measurement at 24±4 hours after test conclusion .	MIL-STD-202 Method 108	±0.5%
Temperature Cycling	1000 Cycles(-55°C to +155°C) , unpowered. Minimum dwell time 15min. at each temperature extreme. maximum transition time 1 min. . Measurement at least 24 hours after test conclusion .	JESD22-A-104	±0.5%
Humidity Bias	1000 hrs. (85°C/85%RH) . Note: Specify conditions: 10% of rate power. Measurement at 24±4 hours after test conclusion .	MIL-STD-202 Method 103	±0.5%
High Temperature Operating Life	1000 hrs.(T=125°C). Rate power was applied to the products intermittently: 90 minutes ON and 30 minutes OFF . Measurement at 24±4 hours after test conclusion .	MIL-STD-202 Method 108	±0.5%
Resistance to Soldering Heat	250°C±5°C , 30s±5s	MIL-STD-202 Method 210	±0.5%
Solderability	Weld bath temperature 245°C±5°C, duration 5±0.5S .	J-STD-002	95% Coverage Minimum
Vibration	20 min.(5 g's) , test from 10Hz-2000 Hz, 12 cycles each of 3 orientations .	MIL-STD-202 Method 204	±0.5%
Board Flex Test	Apply an external force once to the circuit board, bend at least Dx = 2mm, duration 60±5 S .	AEC-Q200-005	±0.5%
Terminal Strength (SMD)	Apply an external force once to the side of the test device, the force is 17.7N (1.8kg), duration 60±1S .	AEC-Q200-006	±0.5%
Mechanical Shock	1) Pulse waveform: Half-Sine pulse; 2) Accelerate peak: 100g's; 3) Pulse duration: 6ms; 4) Orientation & Shock time: ±X, ±Y, ±Z, 3 times each orientation, total 18 times .	MIL-STD-202H Method 213	±0.5%
ESD	1) Direct Contact (DC): ±6kV ; 2) Air Discharge (AD): ±12kV, ±16kV, ±25kV .	AEC-Q200-002 REV-B	±0.5%
Resistance to Solvents	Note: Add Aqueous wash chemical - OKEM Clean or equivalent. Do not use banned solvents .	MIL-STD-202 Method 215	There was no missing, faded, smeared, blurred, or shifted (dislodged) with the marks. There was no crack, separation, crazing, swelling, softening, degradation on the samples.
Flame Retardance	1) Test power: 100%, 115%, 130%, 150% (Rate power) ; 2) Test duration: 1h .	AEC-Q200-001	The temperature is not higher than 350 ° C for more than 10 seconds, no flame, no explosion.

性能测试 Performance testing

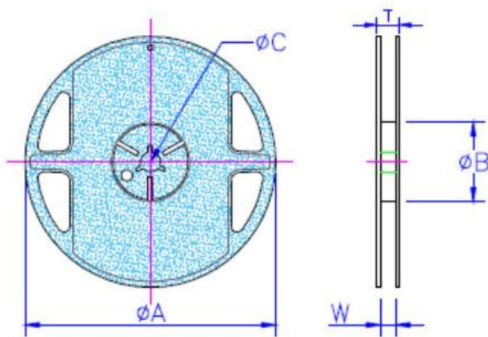
Items	Additional Requirements	Reference	Limits
Short Time Overload	Apply 5 times the rated power for 5 seconds and release the load for about 30 minutes, then measure its resistance variance rate.	MIL-STD-202 Method 301	±0.5%

印字标识 Marking

R001 R001 : 1mΩ (Value阻值) or 0m30 0m30 : 0.3mΩ (Value阻值)
 1% 1% : ±1% (Tolerance精度) 0.5% 0.5% : ±0.5% (Tolerance精度)

包装 Packaging

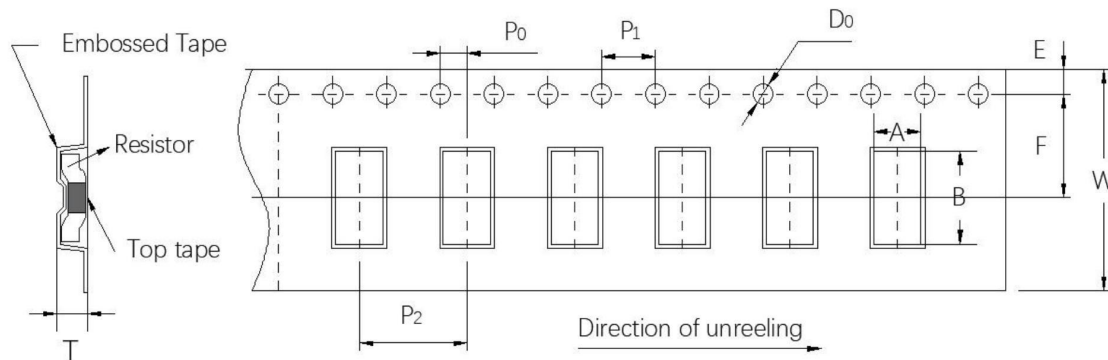
(Unit : mm)



Size	2512 W=12	2512 W=16	3920 W=24	3920 W=16	5930
ϕA	178	203	330	330	330
ϕB	60	60	100	100	100
ϕC	13	13	13	13	13
W	12.5	16.5	24.5	16.5	24.5
T	21	21	29	21	29

Embossed plastic Tape Specifications

(Unit : mm)



Size (in)	Resistance Alloy	Resistance (mΩ)	A ±0.15	B ±0.15	W ±0.3	E ±0.15	F ±0.15	P ₀ ±0.15	P ₁ ±0.15	P ₂ ±0.15	D ₀ ±0.15	Quantity (pcs)	T ±0.15
2512	S	0.2	3.6	6.7	16	1.75	7.5	2	4	8	1.5	1000	Depends on the thickness of the product
	M	0.3	3.7	6.9	16	1.75	7.5	2	4	8	1.5	1000	
		0.5	3.5	6.7	12	1.75	5.5	2	4	4	1.5	2000	
		0.6~1	3.5	6.7	12	1.75	5.5	2	4	4	1.5	3000	
	K/F	1.1~1.5	3.5	6.7	12	1.75	5.5	2	4	4	1.5	2000	
		1.5~5	3.5	6.7	12	1.75	5.5	2	4	4	1.5	3000	
3920	M	0.2	5.8	10.6	24	1.75	11.5	2	4	12	1.5	2000	
		0.3	5.6	10.65	24	1.75	11.5	2	4	12	1.5	1500	
		0.4	5.8	10.5	24	1.75	11.5	2	4	12	1.5	2500	
		0.5	5.7	10.4	16	1.75	7.5	2	4	12	1.5	2500	
		0.7~1	5.8	10.5	16	1.75	7.5	2	4	12	1.5	2500	
	K/F	1	5.8	10.5	24	1.75	11.5	2	4	12	1.5	2500	
		1.5~5	5.8	10.5	16	1.75	7.5	2	4	12	1.5	2500	
5930	S	0.1	8.5	15.7	24	1.75	11.5	2	4	12	1.5	1000	
	M	0.2	8.5	15.7	24	1.75	11.5	2	4	16	1.5	1000	
		0.3~0.35	8.5	15.7	24	1.75	11.5	2	4	16	1.5	1500	
		0.4~0.5	8.1	15.5	24	1.75	11.5	2	4	12	1.5	2000	
		0.6~0.8	8.5	15.7	24	1.75	11.5	2	4	12	1.5	2000	
	K/F	1	8.1	15.5	24	1.75	11.5	2	4	12	1.5	2000	
		2~3	8.5	15.7	24	1.75	11.5	2	4	12	1.5	2000	