

分流贴片电阻-ASR系列

Alloy Shunt Resistors – ASR Series

特征 Features

精度±5%、±2%、±1%和±0.5%	Tolerance ±5%, ±2%, ±1% and ±0.5%
使用温度-65°C~170°C	Operating Temperature range -65°C~170°C
电子束焊接结构	Electron beam welding
耐冲击	Ideal for pulse application
电感小于 3 纳亨	Low Inductance < 3nH
符合RoHS 要求	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	F	
Yezhan Type	Element Material	Dimension	Resistance Value(mΩ)	Tolerance	Other
ASR	S: CuMnSn M: Manganin K: Karma F: FeCrAl	3: 2512 5: 3920 7: 5930		J: ±5% G: ±2% F: ±1% D: ±0.5%	

说明 Notice

适用范围 Scope

本承认书适用于深圳市业展电子有限公司 制造之[分流贴片电阻器]。

This specification is available for Alloy Shunt Resistors manufactured by Shenzhen Yezhan Electronics Co., Ltd.

标准试验状态 Standard measuring conditions

温度 $20\pm 2^{\circ}\text{C}$ 、湿度 $65\pm 5\%$ 。但在温度 $5\sim 35^{\circ}\text{C}$ 、湿度 $45\sim 85\%$ 之情况下，仍可给予判定。

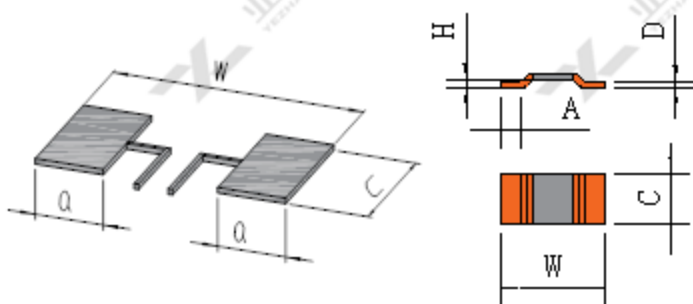
Temperature $20\pm 2^{\circ}\text{C}$, Humidity $65\pm 5\%$. Being no doubt about the judgment, measurements can be made within the following Temperature $5\sim 35^{\circ}\text{C}$, Humidity $45\sim 85\%$.

产品尺寸和PCB板布局 product dimensions and pcb-layout (Reflow-soldering)

(Unit: mm)

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

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



Size	Element Material	Resistance (mΩ)	Rthi (°C/W)	D±0.1 (mm)	TCR (ppm/°C)	P70 °C (W)
2512	S	0.2	3	1.4	±175	6
		0.3	5	1.5	±175	6
	M	0.5	6	0.93	±115	6
		1	10	0.45	±100	5
		1.2	-	1.08	±70	6
	K/F	1.5	-	0.86	±70	5
		2	15	0.65	±70	5
		2.5	-	0.5	±70	4
		3	24	0.43	±70	4
		4	27	0.31	±70	3
5		40	0.28	±70	3	
3920	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	0.56	±50	6
		2.5	-	0.47	±50	5
		3	22	0.37	±50	5
		4	24	0.28	±50	5
		5	-	0.28	±50	4

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Size	Element Material	Resistance (mΩ)	Rthi (°C/W)	D±0.1 (mm)	TCR (ppm/°C)	P70 °C (W)
5930	S	0.1	2	2.0	±200	15
	M	0.2	3	1.5	±100	15
		0.5	3.5	0.6	±75	10
		0.75	6	0.41	±75	10
	K/F	1	7	0.86	±50	9
		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 conditions at 20°C~120°C.

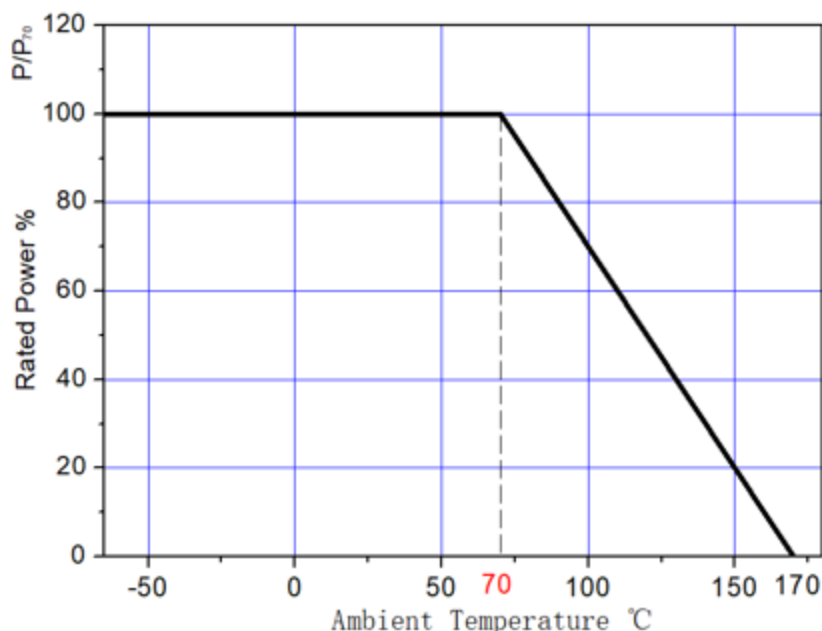
备注Note:

1. 部分产品的温漂可低至20ppm/°C 以内, 参看ASHP系列。

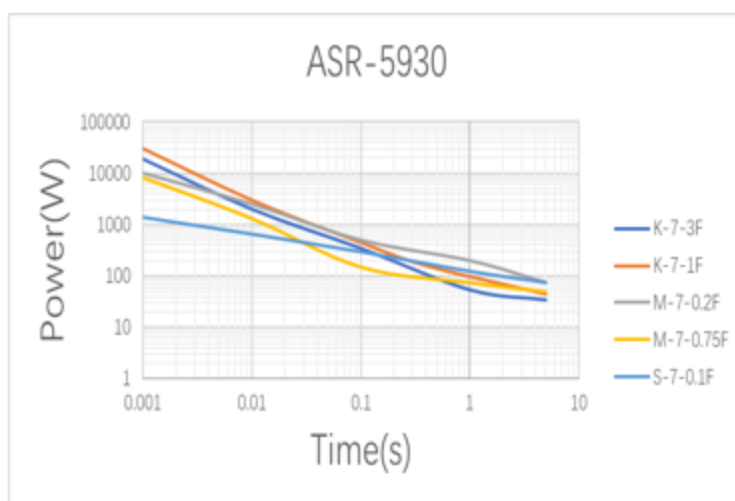
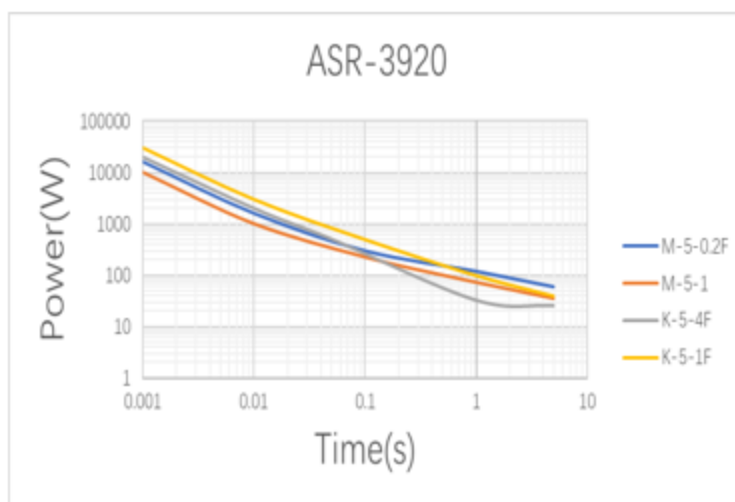
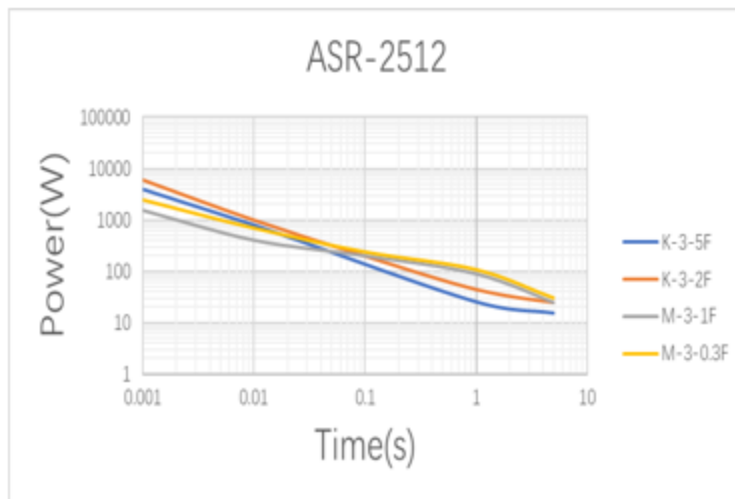
The TCR of some products can be down to ≤ 20 ppm/°C, refer to ASHP Series.

工作特性 Performance Data

降功率曲线 Power Derating



脉冲曲线 Pulse curve



» 耐久性测试 Endurance Test

Items	Additional Requirements	Reference	Limits
Temperature Cycling	1000 Cycles(-55°C to +125°C)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	100hrs.@T=170°C.Unpowered.	MIL-STD-202 Method 108	±0.5%
Biased Humidity	1000hrs 85°C/85%RH. Note:Specified conditions:10% of operating power.	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125°C at rated power.	MIL-STD-202 Method 108	±0.5%
Solderability	245°C±5°C,5s±0.5s	J-STD-002C	95% Coverage Minimum
Vibration	5 g's for 20 min, 12 cycles each of 3 orientations. Note: Use 8"X5" PCB .031" thick 7 secure points on one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	MIL-STD-202 Method 204	±0.5%
Resistance to Soldering Heat	260°C±5°C, 10s±1s	MIL-STD-202 Method 210	±0.5%
Short Time Overload	5×Rated power for 5 s	MIL-STD-202 Method 301	±0.5%
Mechanical Shock	1) Pulse waveform: Half-Sine pulse. 2) Accelerate peak: 100g. 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%
Board Flex	1) PCB board size(H×W×T): 100mm ×40mm ×1.6mm. 2) Press tool: r = 340mm, Width = 20mm. 3) Deformation displacement: 2mm. 4) Duration: 60 (+5) s.	AEC-Q200-005 REV A,	±0.5%
Terminal Strength	1) Press tool: A pointed thruster with a radius of 0.5 mm. 2) Shear force: 17.7N. 3) Duration: 60 (+1) seconds.	AEC-Q200-006 REV A	±0.5%

Items	Additional Requirements	Reference	Limits
Flame Retardance	1) Test current: 100%, 115%, 130%, 150% (rated current). 2) Test duration: 1h. The following constitutes a failure: 1) A flame over 3.0 seconds duration; 2) An explosion; 3) A temperature above 350°C sustained for over 10 seconds.	AEC-Q200-001 REV B	>10s for 350°C
Resistance to Solvents	1) Solvent a: 1 part (by volume) of isopropyl alcohol reagent grade and 3 parts (by volume) of a mixture of 80% (by volume) of kerosene and 20% (by volume) ethylbenzene. 2) Solvent c: 9 parts (by volume) of D-limonene and 1 part of surfactant. 3) Solvent d: 42 parts (by volume) of water 1 part (by volume) of propylene glycol monomethyl ether 1 part (by volume) of monoethanolamine.	MIL-STD-202H 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.

印字标识 Marking

R001 1%

R001: 1mΩ阻值 Value 1%: ±1%精度 Tolerance

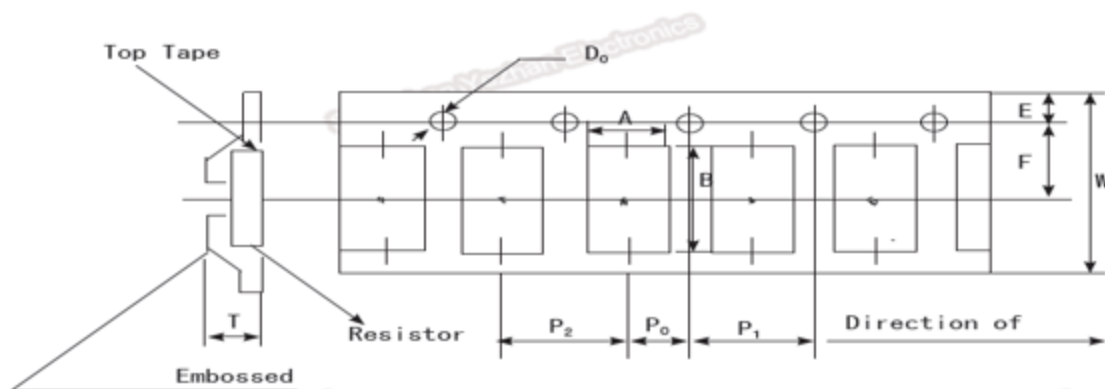
0m45 1%

0m45: 0.45mΩ阻值 Value 1%: ±1%精度 Tolerance

包装 Packaging

Embossed plastic Tape Specifications

(Unit: mm)



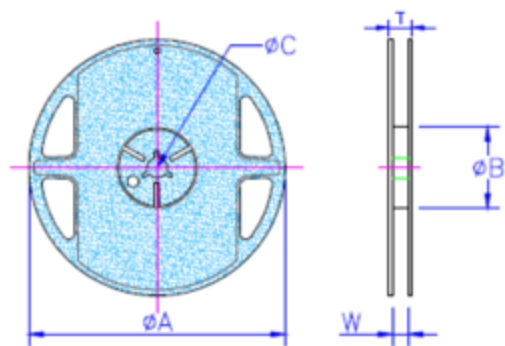
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Size	A±0.1	B±0.1	W±0.3	E±0.1	F±0.1	P ₀ ±0.1	P ₁ ±0.1	P ₂ ±0.1	D ₀ ±0.1	T±0.1	*Quantity (pcs)
2512	3.5	6.7	12	1.75	5.5	2	4	4	1.50	依据产品厚度	3000
2512-0.2/0.3	3.7	6.9	16	1.75	7.5	2	4	8	1.50		1000
3920	5.8	10.5	24	1.75	11.5	2	4	12	1.50		2500
5930	8.6	16	24	1.75	11.5	4	4	12	1.50		2000

*特殊包装数量 Special quantity

P/N	2512-0.2	2512-0.3	2512-0.5	3920-0.2	3920-0.3	5930-0.1	5930-0.2
*Quantity (pcs)	1000	1000	2000	2000	2000	1000	1500



Size	2512	2512	3920	5930
φA	178	178	330	330
φB	60	60	100	100
φC	13	13	13	13
W	12.5	16.5	24.5	24.5
T	21	21	29	29

» 版本信息 Version History

版本 Version	日期 Date	修订描述 Description of amendment	拟定 Draft	审核 Checked
A1.0	04-May-2021	首版发行	邹文鉴	胡紫阳
A1.1	10-Sep-2021	1. 2512-2 包装数量从2000 变更为3000 2. 更新封面	邹文鉴	胡紫阳
A1.2	1-Mar-2022	1. 更新2512/3920/5930 热内阻数据	邹文鉴	胡紫阳
A1.3	14-Jul-2022	1. 增加 3920-0.7/5930-1.5 mΩ 产品型号	邹文鉴	胡紫阳
A1.4	22-Nov-2022	1. 增加 2512-1.2/1.5/2.5,3920-0.4/1.5/2.5/5,5930-2.5 mΩ 产品型号	邹文鉴	胡紫阳