APPROVAL SHEET

ASJ SERIES

Alloy Shunt Resistors

Version	Date	Description of amendment	Draft	Checked
A1.0	2022-03-01	First edition	邹文鉴	胡紫阳
A1.1	2022-09-29	Reducing the low-temperature drift parameter by ±20 ppm/℃	邹文鉴	胡紫阳
A1.2	2024-02-29	1. Added 5930-3F specifications; 2. Added loading tape winding rules for 3920 and 5930; 3. Adjusted reliability test items; 4. Revisited some dimension diagrams.	范维龙	王佳苗
A1.3	2026-01-14	The solvent resistance test in the reliability test item of the template upgrade has been removed	范荣丰	邓小辉

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1.Product Description

Product name:ASJ series

Description:ASJ series Alloy Shunt Resistor provide precise current sensing with low TCR and high power, ideal for automotive and industrial applications.

1.1 Part Number Explanation

The part number of the high power precision resistor is identified by the type name, Element Material, tolerance,Dimension,TCR and resistance value.

Example: ASJ-K-3920-5F-P

Type	Element Material	Dimension (in)	Resistance Value	Tolerance	TCR (ppm/℃)
ASJ	K=Karma	3920 5930	5 Unit：mΩ	D=±0.5% F=±1% G=±2% J=±5%	P=±20 =±50

(1) **Type name:** ASJ series

(2) **Element Material:**K=Karma

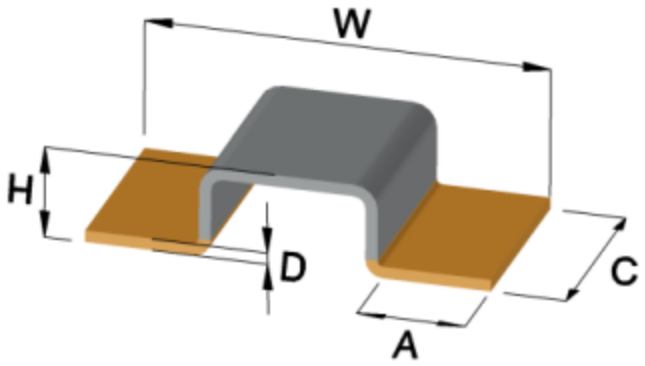
(3) **Dimension:**3920 ;5930

(4) **Resistance:**5

(5) **Tolerance**：D=±0.5%;F=±1%;G=±2%;J=±5%

(6) **TCR:**P=±20；=±50

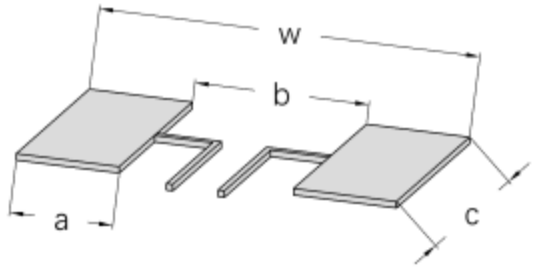
1.2 Products Dimension



(Unit： mm)

Type	Size (in)	W	A	C	H
ASJ-K-3920	3920	10±0.2	2.2±0.2	5.1±0.4	6.5±0.5
ASJ-K-5930	5930	15±0.3	4.2±0.2	7.6±0.4	

1.3 PCB-layout (Reflow-soldering)



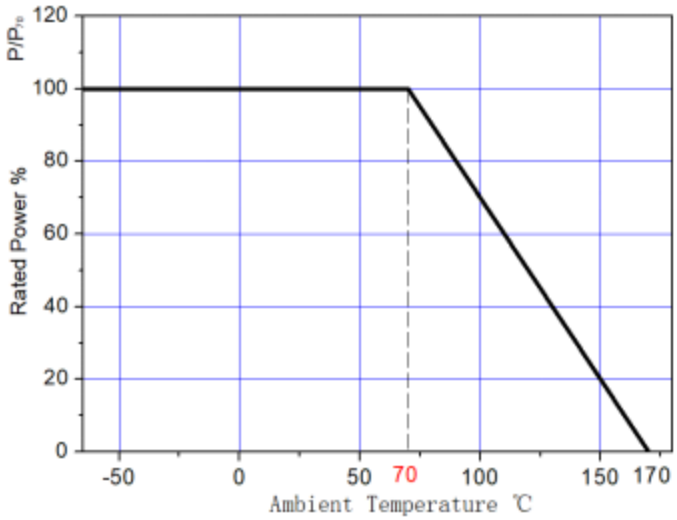
Solder pad type	w	c	a	b
ASJ-K-3920	11	6.2	2.7	5.6
ASJ-K-5930	16	8.75	5.2	5.6

2. Technical Data

Size (in)	Element Material	Resistance range (mΩ)	Resistance (mΩ)	D±0.1 (mm)	*TCR (ppm/℃)	P70 ° C (W)
3920	Karma	5~10	5	0.73	±20 or ±50	5
			5.5	0.7		5
			10	0.38		5
5930		3~7	3	0.86		7
			4	0.62		7
			5	0.49		7
			7	0.35		7

****TCR（ppm/℃）：Test was conducted with the temperature from 20℃ to 120℃, while 20℃ worked as reference.**

3. Power Derating



4. Endurance Test

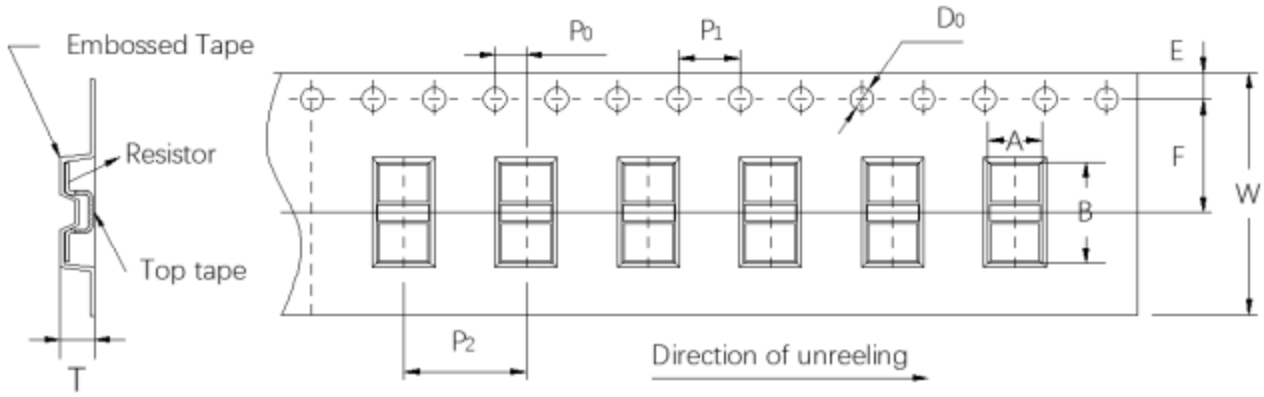
Iterms	Additional Requirements	Reference	Limits
High Temperature Exposure	1000 hrs. (T=170°C) , unpowered. Measurement at 24± 4 hoursafter test conclusion .	MIL-STD-202Method 108	±0.5%
Temperature Cycling	1000 Cycles(-55°C to +155°C) , unpowered. Minimum dwell time 15min. at each temperature extreme.maximum transition time1 min. . Measurement atleast 24hoursafter test conclusion .	JESD22-A-104	±0.5%
HumidityBias	1000hrs. (85℃/85%RH) . Note: Specify conditions: 10% of rate power. Measurement at 24± 4 hoursafter test conclusion .	MIL-STD-202Method 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 hoursafter test conclusion .	MIL-STD-202Method 108	±0.5%
Resistance to Soldering Heat	250℃±5℃ , 30s±5s	MIL-STD-202Method 210	±0.5%
Solderability	Weld bath temperature 245°C±5°C, duration5±0.5S .	J-STD-002	95% Coverage Minimum
Vibration	20 min.(5 g's) , test from10Hz-2000 Hz, 12 cycles each of 3 orientations .	MIL-STD-202Method 204	±0.5%

Board Flex Test	Apply an external force once to the circuit bo ard, bend at least Dx = 2mm, duration 60+5 S .	AEC-Q200-005	±0.5%
Terminal Strength (S MD)	Apply an external force once to the side of th e test device, the force is 17.7N (1.8kg), dur ation 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%
Flame Retardance	1) Test power: 100%, 115%, 130%, 150% (Rate power) ; 2) Test duration: 1h .	AEC-Q200-001	The temperature is not h igher than 350 ° C for m ore than 10 seconds, no flame, no explosion.

5.Marking

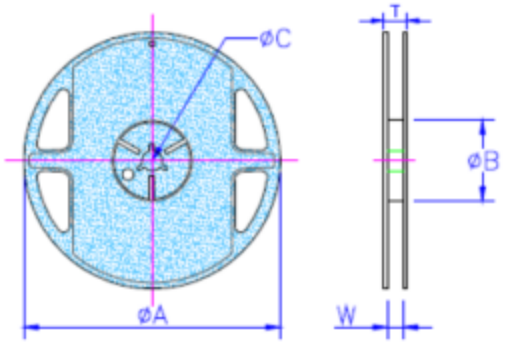
Mark	Explanation
R001 1%	R001：1mΩ (Value 阻值) 1%：±1% (Tolerance 精度)

6.Packing



Unit/mm

Size (in)	A ±0.1	B ±0.1	W ±0.3	E ±0.1	F ±0.1	P0 ±0.1	P1 ±0.1	P2 ±0.1	D0 ±0.1	T ±0.1	Quantity (pcs)
3920	5.7	10.4	24	1.75	11.5	2.0	4.0	12.0	1.5	7.0	800
5930	8.2	15.5	32	1.75	14.2	2.0	4.0	16.0	1.5	7.2	500



Size (in)	3920	5930
ΦA	330	330
ΦB	100	100
ΦC	13	13
W	24.5	32.5
T	29	37.5

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This document is a product specification. Contents are subject to change without notice.

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