APPROVAL SHEET

ASHP-2512 SERIES

Alloy Shunt

Version	Date	Description of amendment	Draft	Checked
A1.0	2025.12.8	首版发行	邵凤临	邓小辉

Tel. +86-755-26611344 Fax: +86-755-26619489 Email: sales@thunder-resistor.com

1.Product Description

Product name:ASHP-2512 series

Description:ASHP-2512 series Alloy Shunt 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, Resistance Alloy, tolerance,TCR,Dimension and resistance value.

Example: ASHP-K-3-3F-P

Type	Resistance Alloy	Dimension	Resistance Value	Tolerance	TCR
ASHP	K=Karma	3=2512 Unit：in	3 Unit：mΩ	D=±0.5% F=±1% G=±2% J=±5%	L=±10 P=±20 Q=±30 Unit: ppm/℃

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

(2) **Resistance Alloy:**K=Karma

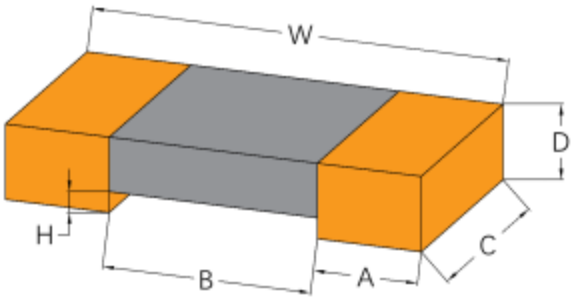
(3) **Dimension:**3=2512

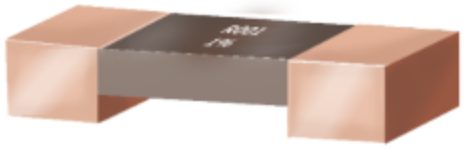
(4) **Resistance:**3

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

(6) **TCR:**L=±10;P=±20;Q=±30

1.2 Products Dimension

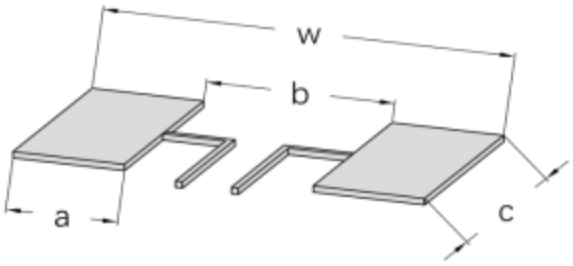




(Unit: mm)

Type	Size (in)	W	A	C	B	H
ASHP-K	2512	6.3±0.2	1.2±0.2	3.1±0.3	3.9±0.2	0.3-0/+0.3

1.3 PCB-layout (Reflow-soldering)



(Unit: mm)

Solder pad type	w	c	a	b
ASHP-K-2512	7	3.8	1.8	3.4

2. Technical Data

Size	Resistance Alloy	Resistance Range(mΩ)	Resistance Value(mΩ)	D±0.15 (mm)	*TCR (ppm/℃)	P70 ° C (W)
2512	K	3	3	0.8	±20	5

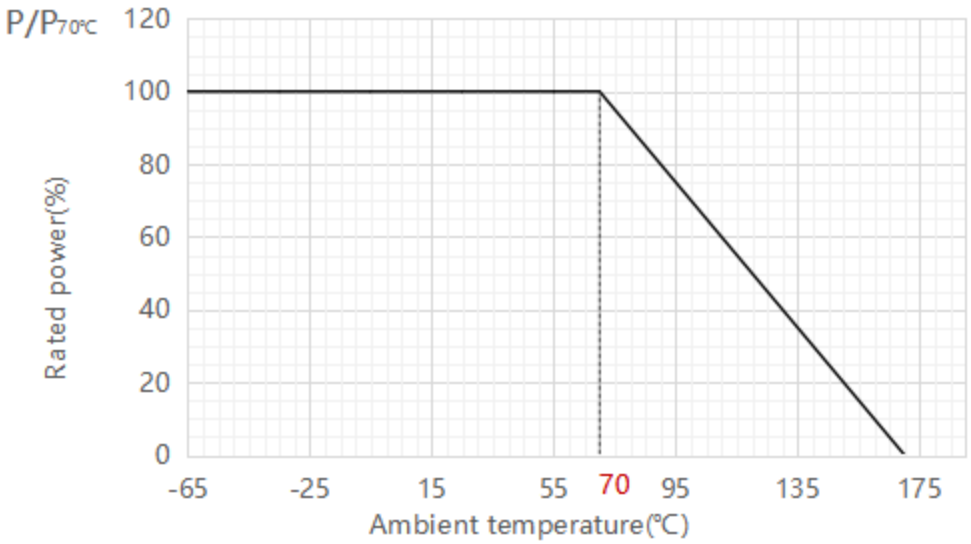
TCR（ppm/℃）： Test was conducted with the temperature from -55℃ to 170℃, while 20℃ worked as reference.

3. 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-202 Method 108	±0.5%
Temperature Cycling	1000 Cycles(-55°C to +150° 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 operating power.Measurement at 24±4 hoursafter 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 hoursafter test conclusion .	MIL-STD-202 Method 108	±0.5%
Resistance to Soldering Heat	250℃±5℃ , 30s±5s	MIL-STD-202 Method 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-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%
Flame Retardance	1) Test power: 100%, 115%, 130%, 150% (Rate current) . 2) Test duration: 1h .	AEC-Q200-001	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.

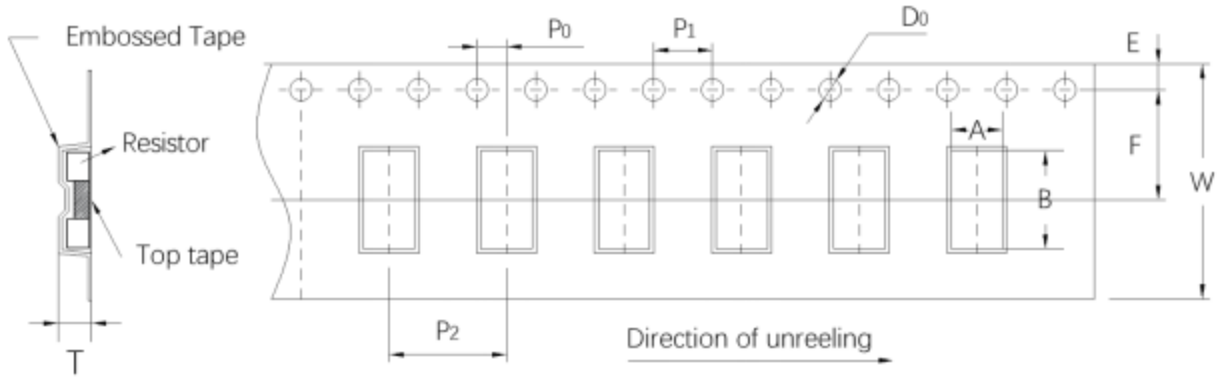
4.Power Derating Curve



5.Marking

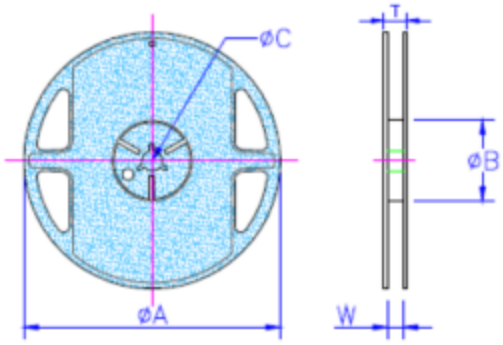
Mark	Explanation
R003	R003：3mΩ (Value 阻值)
1%	1%：±1% (Tolerance 精度)

6.Packing



Unit/mm

Size	A± 0.15	B± 0.15	W± 0.3	E± 0.1	F± 0.1	P0± 0.1	P1± 0.1	P2± 0.1	D0± 0.1	T±0.2	Quantity (pcs)
2512	3.5	6.7	12	1.75	5.5	2	4	4	1.50	取决于产品 D 尺寸的高度。	3000



Size	2512
ΦA	178
ΦB	60
ΦC	13
W	12.5
T	21

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

Tel. +86-755-26611344 Fax: +86-755-26619489 Email: sales@thunder-resistor.com