

DATA SHEET

HIGH CURRENT ZERO OHM JUMPER

PA series

sizes 0100/ 0201/ 0402/ 0603/ 0805/ 1206/ 2010/ 2512

RoHS compliant & Halogen free



SCOPE

This specification describes PA0100~2512 series jumper with metal alloy layer.

APPLICATIONS

- Consumer goods
- Computer
- Telecom / Datacom
- Industrial / Power supply
- Alternative Energy
- Car electronics

FEATURES

- PA Jumper resistors are designed to be used as a zero ohm jumper
- AEC-Q200 qualified
- Halogen-free Epoxy
- RoHS compliant
- Reduce environmentally hazardous wastes
- High component and equipment reliability
- Non-forbidden materials used in products/production
- High current capability
- Moisture sensitivity level: MSL 1

ORDERING INFORMATION - GLOBAL PART NUMBER

Global part numbers are identified by the series, size, tolerance, packing type, temperature coefficient, taping reel and resistance value.

GLOBAL PART NUMBER

PA XXXX X X X XX OR L
(1) (2) (3) (4) (5) (6) (7)

(1) SIZE

0100 / 0201 / 0402 / 0603 / 0805 / 1206 / 2010 / 2512

(2) TOLERANCE

-

(3) PACKAGING TYPE

R = Paper taping reel (PA0100~1206)
 K = Embossed taping reel (PA2010~2512)

(4) TEMPERATURE COEFFICIENT OF RESISTANCE

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(5) TAPING REEL

07 = 7 inch dia. Reel
 7W = 7 inch dia. Reel, (0402 only)
 47 = 7 inch dia. Reel, (0805 only)

(6) RESISTANCE VALUE

OR = 0 Ω

(7) DEFAULT CODE

Letter L is the system default code for ordering only. (Note)

Resistance rule of global part number

Resistance code rule	Example
OR (0 Ω)	OR = 0 Ω

ORDERING EXAMPLE

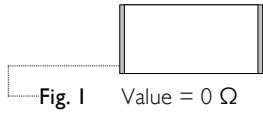
The ordering code for a PA0603 chip resistor, value 0 Ω, supplied in 7-inch tape reel with 5Kpcs quantify is: PA0603-R-070RL.

NOTE

1. All our RChip products are RoHS compliant. "LFP" of the internal 2D reel label mentions "Lead-Free Process"

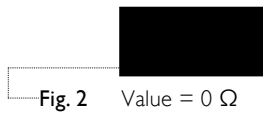
MARKING

PA0201



No Marking

PA0100 / 0402 / 0603 / 0805 / 1206 / 2010 / 2512

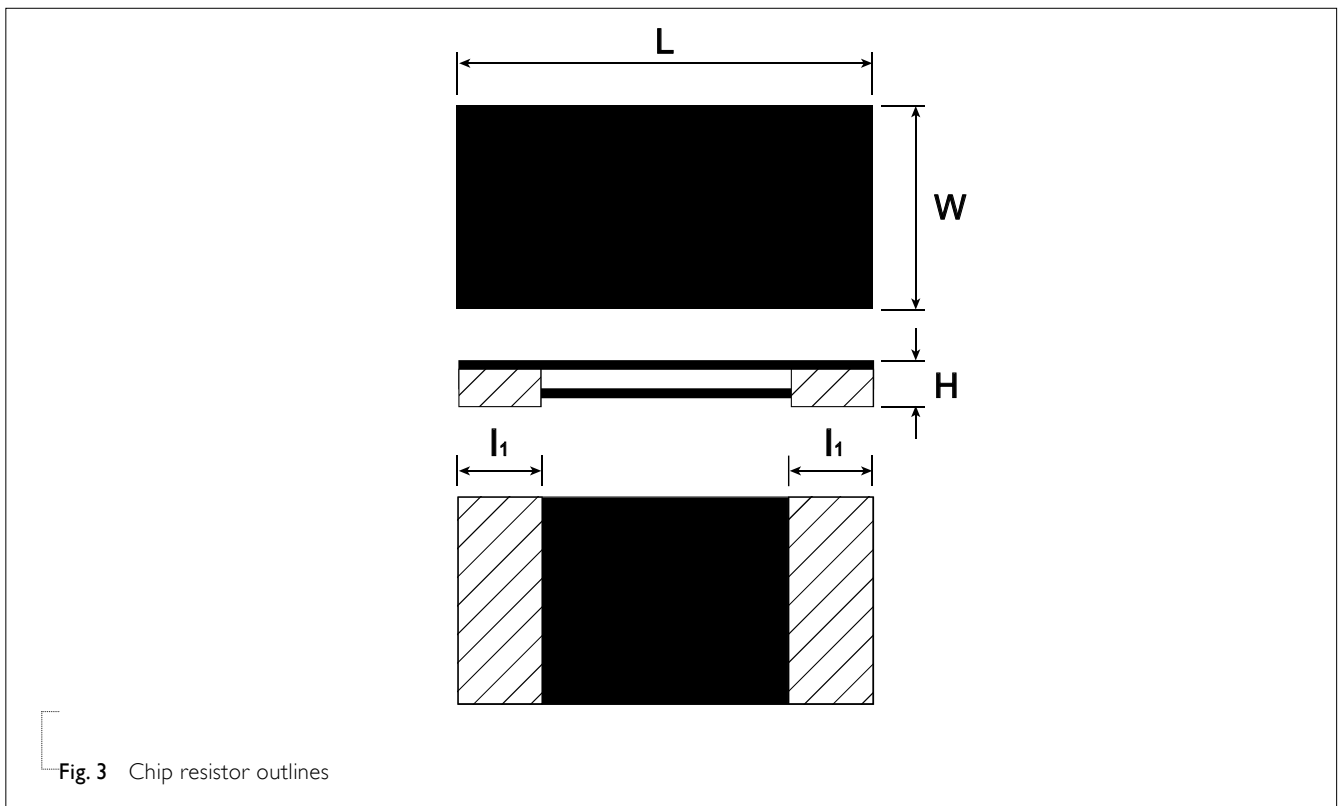


No Marking

CONSTRUCTION

The advanced resistive material is adopted to get the low resistance and is covered with a protective coat. Finally, the three external terminations (Cu / Ni / matte Tin) are added, as shown in Fig. 3.

Outlines



DIMENSION

Table 1 For outlines, please refer to Fig. 3

TYPE	L (mm)	W (mm)	H (mm)	l ₁ (mm)
PA0100	0.40±0.03	0.20±0.03	Max. 0.15	0.10±0.03
PA0201	0.60±0.03	0.31±0.04	Max. 0.35	0.15±0.06
PA0402	1.00±0.10	0.55±0.10	Max. 0.35	0.25±0.10
PA0603	1.60±0.20	0.8+0.10/-0.20	0.45±0.15	0.38±0.12
PA0805	2.00±0.15	1.20±0.15	Max. 0.40	0.35±0.25
PA1206	3.05±0.20	1.52±0.20	0.50±0.20	0.70±0.20
PA2010	5.08±0.20	2.54±0.20	0.40±0.15	0.70±0.20
PA2512	6.35±0.20	3.05±0.15	0.45±0.15	1.40±0.20

Note:

1. For relevant physical dimensions, please refer to construction outlines.
2. Please contact with sales offices, distributors and representatives in your region before ordering.

ELECTRICAL CHARACTERISTICS

Table 2

	PA0100	PA0201	PA0402	PA0603	PA0805	PA1206	PA2010	PA2512
Global part number (code 09-10)	07	07	07	7W	07	47	07	07
Resistance Value, Max. (mΩ)	≤2mΩ	≤5mΩ	≤1mΩ	≤0.2mΩ	≤0.2mΩ	≤0.2mΩ	≤0.2mΩ	≤0.2mΩ
Jumper Criteria								
Rated Current (A)	8	4.5	11	23	50	50	70.7	100
Rated Power (W)	1/8	1/10	1/8	1/10	1/2	1/2	1	2
Operating Temperature Range	-55°C to +125°C			-55°C to +155°C		-55°C to +170°C		

Note: Please contact with sales offices, distributors and representatives in your region before ordering.

FUNCTIONAL DESCRIPTION

OPERATING TEMPERATURE RANGE

PA0100 to PA0402: -55°C to +125°C
 PA0603/ PA0805: -55°C to +155°C
 PA1206/PA2010/PA2512: -55°C to +170°C

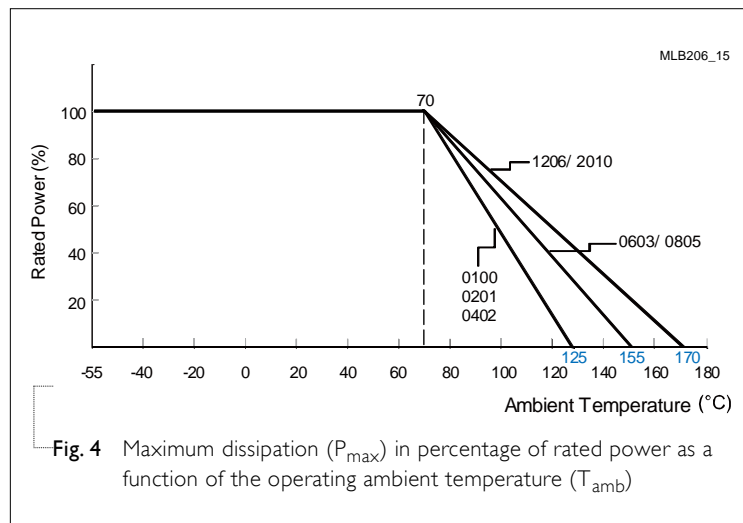


Fig. 4 Maximum dissipation (P_{max}) in percentage of rated power as a function of the operating ambient temperature (T_{amb})

PACKING STYLE AND PACKAGING QUANTITY

Table 3 Packing style and packaging quantity

PACKING STYLE	REEL DIMENSION	PA0100	PA0201	PA0402	PA0603	PA0805	PA1206	PA2010	PA2512
Paper taping reel (R)	7" (178 mm)	20,000	10,000	10,000	5,000	5,000	4000	---	---
Embossed Taping Reel (K)	7" (178 mm)	---	---	---	---	---	---	4000	4000

PAPER TAPE

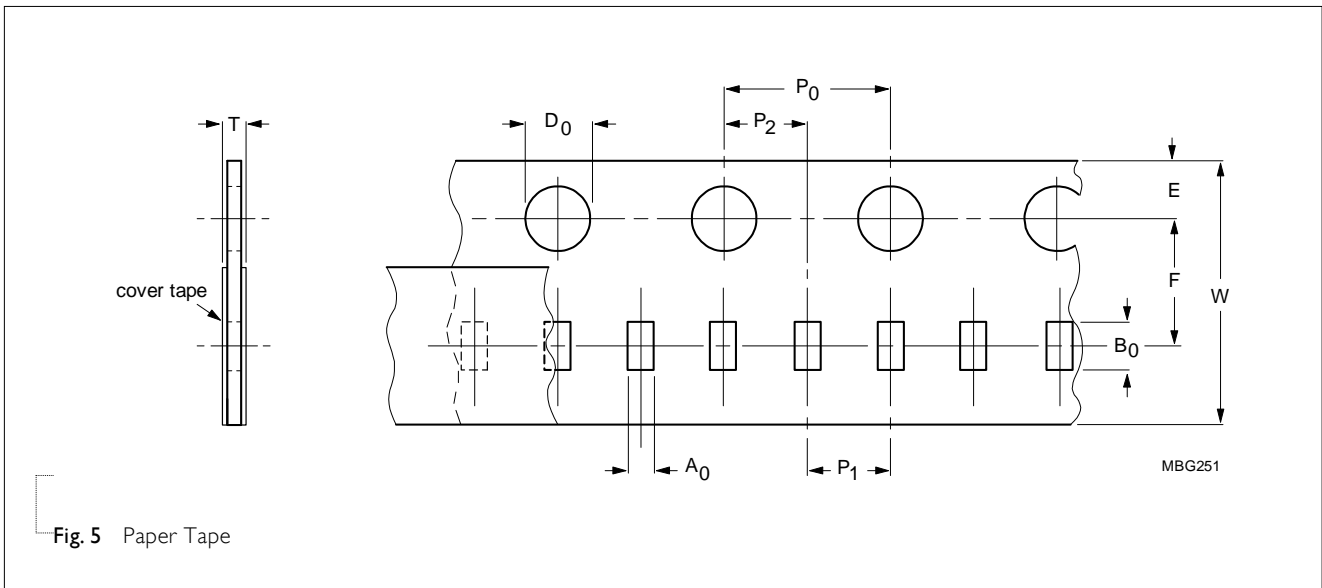


Fig. 5 Paper Tape

Table 4 Dimensions of paper tape for relevant chip resistors size

SIZE	SYMBOL										Unit: mm
	A ₀	B ₀	W	E	F	P ₀	P ₁	P ₂	ØD ₀	T	
PA0100	0.24±0.03	0.45±0.03	8.00±0.20	1.75±0.10	3.50±0.05	4.00±0.05	2.00±0.10	2.00±0.05	1.50±0.10	0.31±0.10	
PA0201	0.38±0.10	0.68±0.10	8.00±0.10	1.75±0.10	3.50±0.10	4.00±0.10	2.00±0.10	2.00±0.10	1.55±0.05	0.42±0.10	
PA0402	0.59±0.10	1.20±0.10	8.00±0.10	1.75±0.10	3.50±0.10	4.00±0.10	2.00±0.10	2.00±0.10	1.55±0.05	0.45±0.10	
PA0603	1.10±0.10	1.90±0.10	8.00±0.10	1.75±0.10	3.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.55±0.05	0.43±0.10	
PA0805	1.62±0.10	2.35±0.10	8.00±0.10	1.75±0.10	3.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.55±0.05	0.43±0.10	
PA1206	1.90±0.20	3.50±0.20	8.00±0.20	1.75±0.10	3.50±0.50	4.00±0.10	4.00±0.10	2.00±0.05	1.50±0.10	0.75+0.20/-0	

EMBOSSED TAPE

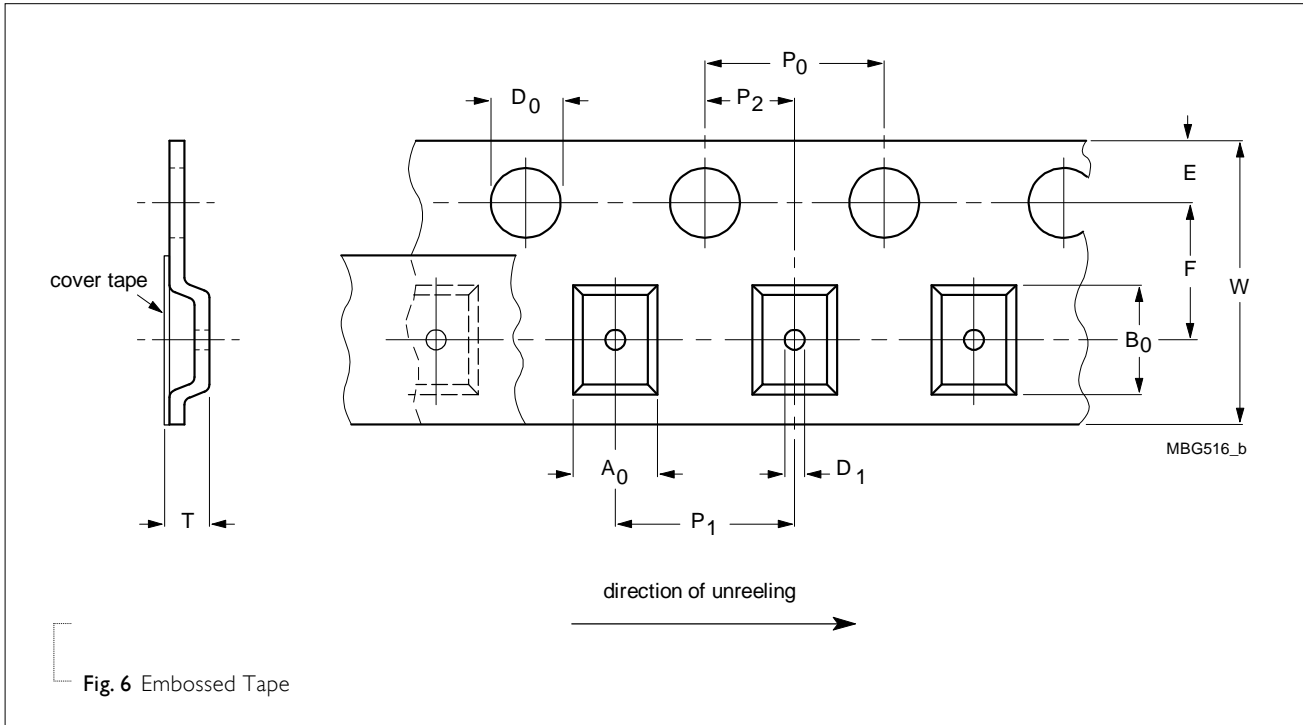


Fig. 6 Embossed Tape

Table 5 Dimensions of embossed tape for relevant chip resistors size

SIZE	SYMBOL										Unit: mm
	A ₀	B ₀	W	E	F	P ₀	P ₁	P ₂	ΦD ₀	ΦD ₁	
PA2010	2.80±0.15	5.40±0.15	12.0±0.30	1.75±0.10	5.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	0.80±0.15
PA2512	3.40±0.15	6.70±0.15	12.0±0.30	1.75±0.10	5.50±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	0.80±0.15

REEL SPECIFICATION

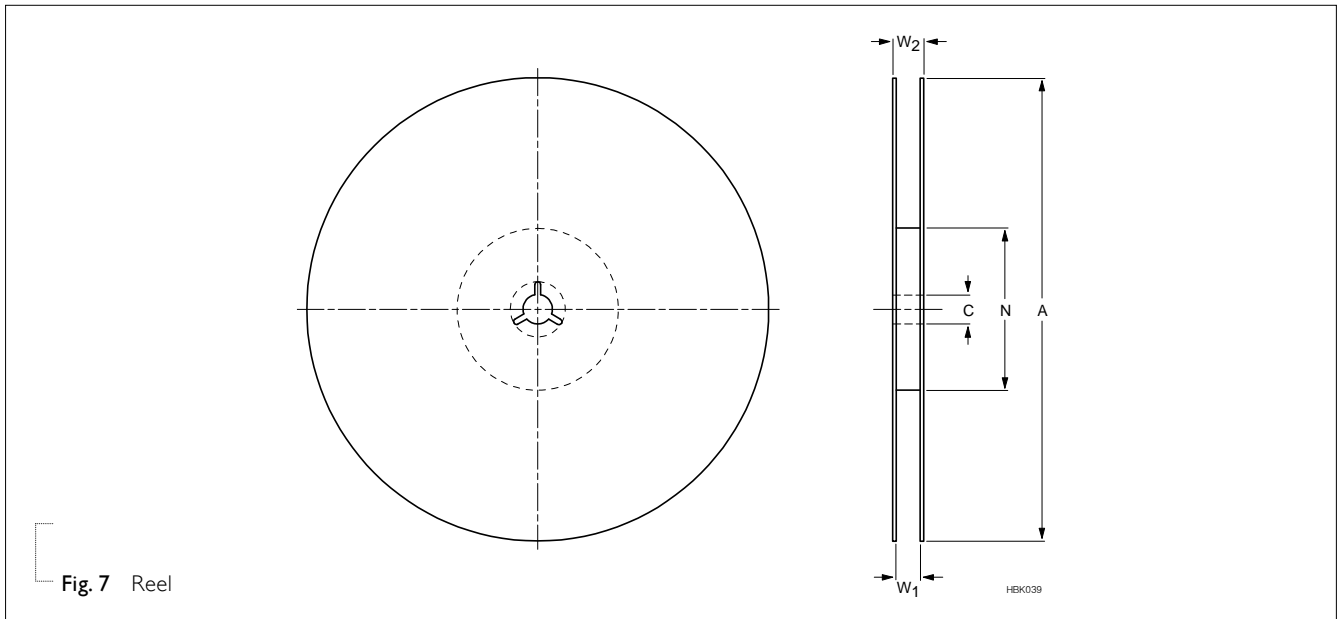


Fig. 7 Reel

Table 6 Dimensions of reel specification for relevant chip resistors size

SIZE	QUANTITY PER REEL	REEL SIZE		SYMBOL	Unit: mm				
		8 mm TAPE WIDE	12 mm TAPE WIDE		A	N	C	D	W ₁
PA0100	20,000	7" (Ø 178 mm)	---	180.0+0/-3.0	60.0+1/-0	13.0± 0.2	21.0± 0.8	9.0± 0.3	11.4± 1.0
PA0201	10,000	7" (Ø 178 mm)	---	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	9.0± 0.5	12.0± 0.2
PA0402	10,000	7" (Ø 178 mm)	---	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	9.0± 0.5	12.0± 0.2
PA0603	5,000	7" (Ø 178 mm)	---	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	9.0± 0.5	12.0± 0.2
PA0805	5,000	7" (Ø 178 mm)	---	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	9.0± 0.5	12.0± 0.2
PA1206	4,000	7" (Ø 178 mm)	---	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	9.0± 0.5	12.0± 0.2
PA2010	4,000	---	7" (Ø 178 mm)	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	13.6± 0.5	16.5± 0.5
PA2512	4,000	---	7" (Ø 178 mm)	178.0± 1.0	60.0+1/-0	13.5± 0.5	21.0± 0.8	13.6± 0.5	16.5± 0.5

LEADER/TRAILER TAPE SPECIFICATION

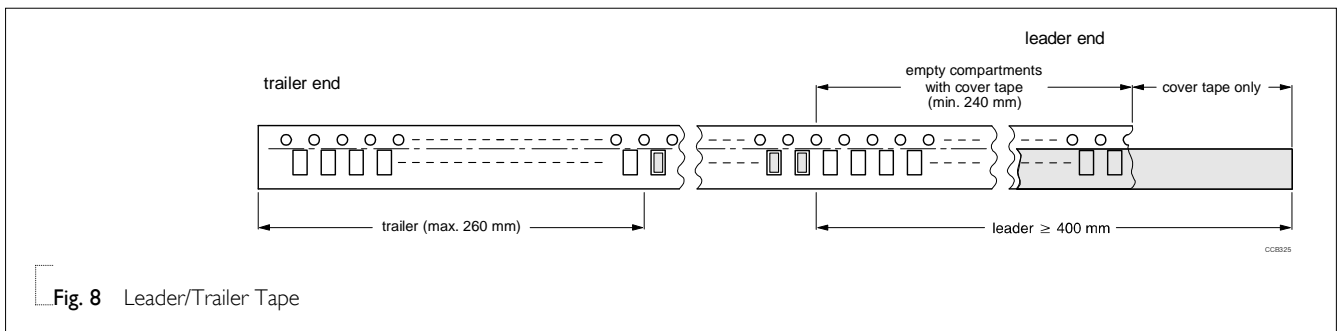


Fig. 8 Leader/Trailer Tape

FOOTPRINT AND SOLDERING PROFILES

For recommended soldering profiles, please refer to data sheet “Chip resistors mounting”.

FOOTPRINT

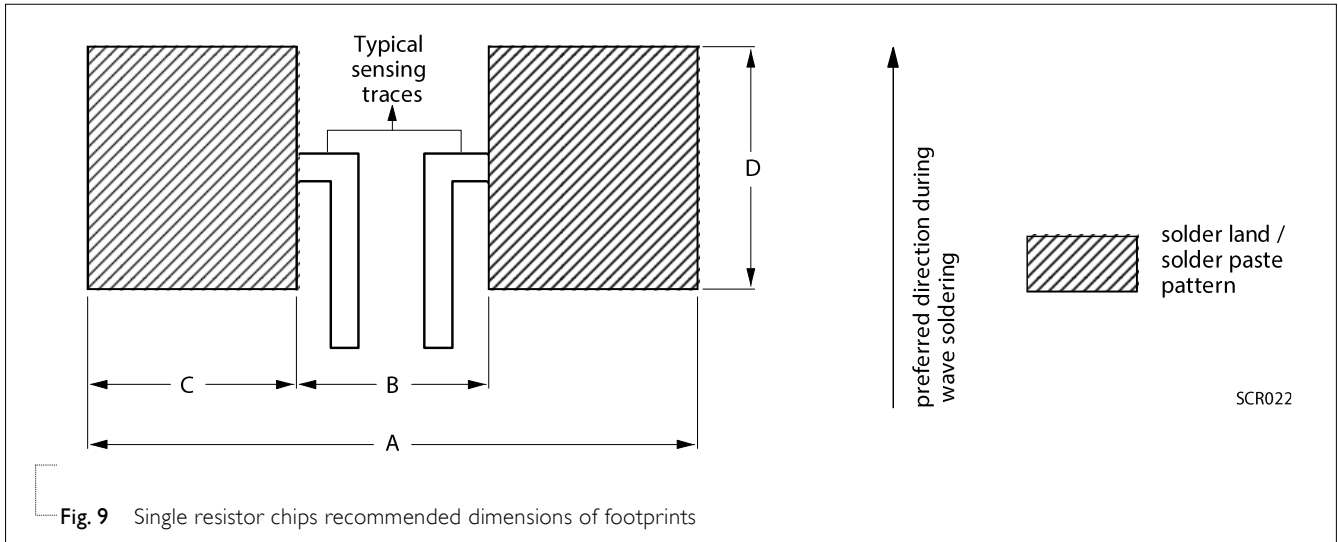


Table 7 Footprint dimensions

SIZE	A	B	C	D	Unit: mm
PA0100	0.5~0.8	0.16~0.2	0.17~0.3	0.2~0.4	
PA0201	1.0	0.3	0.35	0.4	
PA0402	2.0	0.4	0.8	0.6	
PA0603	2.2	0.8	0.7	0.9	
PA0805	3.4	0.8	1.3	1.3	
PA1206	4.0	1.0	1.5	1.8	
PA2010	6.0	3.5	1.25	3.0	
PA2512	6.75	3.15	1.8	3.45	

TESTS AND REQUIREMENTS

Table 8 Test condition, procedure and requirements

TEST	TEST METHOD	PROCEDURE	REQUIREMENT
Life/ Endurance	MIL-STD-202 Method 108	1,000 hours at 70±2°C applied rated current	0100 : < 2mΩ
	IEC 60115-1 7.1	1.5 hours on, 0.5 hour off, still air required	0201: < 5mΩ 0402: < 1mΩ (07) < 0.2mΩ (7W) Others : < 0.2mΩ
High Temperature Exposure/ Endurance at upper category temperature	MIL-STD-202 Method 108	1,000 hours, unpowered at	0100 : < 2mΩ
	IEC 60068-2-2	0100/ 0201/ 0402 : 125±5°C 0603/ 0805 : 155±5°C 1206/2010/2512 : 170±5°C	0201: < 5mΩ 0402: < 1mΩ (07) < 0.2mΩ (7W) Others : < 0.2mΩ
Short time overload	IEC 60115-1 8.1	5 times rated power for 5 seconds.	0100 : < 2mΩ 0201: < 5mΩ 0402: < 1mΩ (07) < 0.2mΩ (7W) Others : < 0.2mΩ
Board Flex/ Bending	AEC-Q200-005	Device mounted on PCB test board as described, only 1 board bending required Bending for 0100 : 5mm 0201 : 3 mm 0402 and above: 2mm Bending time: 60+5 seconds Ohmic value checked during bending	0100 : < 2mΩ 0201: < 5mΩ 0402: < 1mΩ (07) < 0.2mΩ (7W) Others : < 0.2mΩ
Solderability	J-STD	1) Baking 4 hours @155 °C dry heat, dipping at @245±3 °C for 5±0.5 second 2) Baking 4 hours @155 °C dry heat, dipping at @260±3 °C for 30±0.5 second	Good tinning (≥95% covered); no visual damage.
- Resistance to Soldering Heat	MIL-STD-202 Method 210	Specimen passed 3 times reflow temperature at 260°C, with solder	0100 : < 2mΩ 0201: < 5mΩ 0402: < 1mΩ (07) < 0.2mΩ (7W) Others : < 0.2mΩ No visible damage

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 3	Jan. 20, 2025	-	- Add sizes of PA2512
Version 2	Nov. 27, 2023	-	- Upgrade PA0805 & PA0402 specification and add the coding remark in table 2.
Version 1	Jan. 27, 2021	-	- Add sizes of PA0100, PA1206 and PA2010
Version 0	Oct. 05, 2018	-	- Metal low ohmic jumper - PA series

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