APPROVAL SHEET

SBB-t9 SERIES

4-Terminal Shunt Resistor

Version	Date	Description of amendment	Draft	Checked
A1.0	01-Aug-2022	First edition	邹文鉴	胡紫阳
A1.1	26-Oct-2022	Add models with 0.2 and 0.3 mΩ resistance	邹文鉴	胡紫阳
A1.2	29-Nov-2022	Add 2726 packages	邹文鉴	胡紫阳
A1.3	30-Oct-2024	The durability test update includes partial descriptions and revised information on the product packaging carrier tape.	林明月	邓小辉

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1.Product Description

Product name:SBB-t9 series

Description:SBB-t9 series 4-Terminal 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,Other,Dimension and resistance value.

Example: SBB-M-0.5F-y-t9

Type	Element Material	Resistance Value	Tolerance	Dimension	Other
SBB	M=Manganin K=Karma S=CuMnSn	0.5 Unit：mΩ	D=±0.5% F=±1% G=±2% J=±5%	y=4026 n=2726	t9

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

(2) **Element Material:**M=Manganin;K=Karma;S=CuMnSn

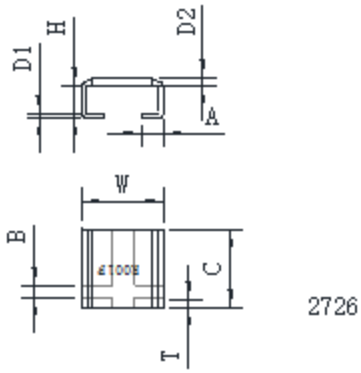
(3) **Dimension:**y=4026;n=2726

(4) **Resistance:**0.5

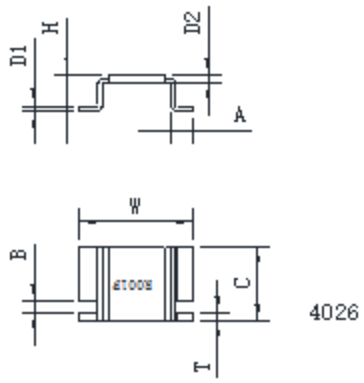
(5) **Tolerance：** D=±0.5%;F=±1%;G=±2%;J=±5%

(6) **Other:**t9

1.2 Products Dimension



2726

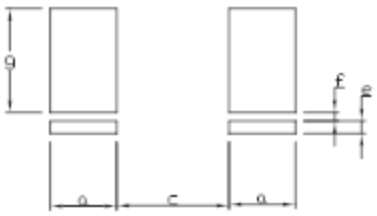


4026

Type	Sizee	W (mm)	A (mm)	C (mm)	B (mm)	T (mm)	H (mm)	D1 (mm)
SBB-t9	2726	6.9±0.2	1.9±0.2	6.6+0.35/-0.2	1.0±0.1	0.7±0.1	2.4±0.2	0.4±0.1
	4026	10.1±0.3	2.0±0.2	6.6±0.3	1.0±0.15		3.0±0.5	

1.3 PCB-layout (Reflow-soldering)

Solder pad type	a	c	e	f	g
2726	2.9	2	0.9	0.8	5.6
4026	2.55	5.5	0.9	0.8	5.6



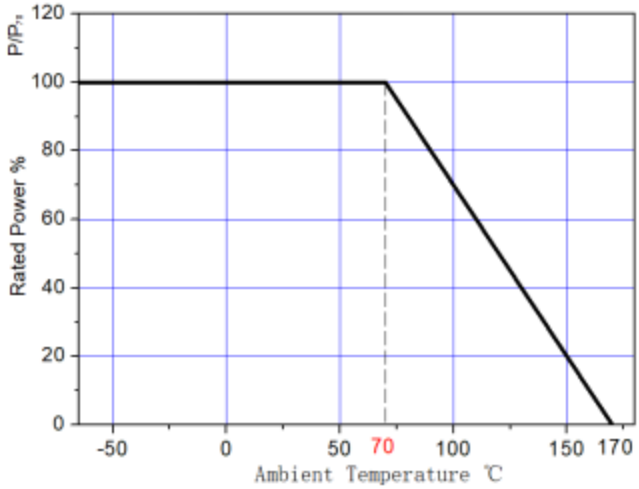
2. Technical Data

Size	Element Material	Resistance (mΩ)	D2±0.1 (mm)	TCR (ppm/℃)	P70 °C (W)
2726	S	0.2	1.20	±75	5
	M	0.3	1.20		
		0.5	0.67		
		0.7	0.48		
		1	0.33		
	K	2	0.50	±50	4
		3	0.34		
		4	0.25		3
		5	0.20		
4026	S	0.2	1.20	±75	5
	M	0.3	1.20		
		0.5	0.67		
		0.7	0.48		
		1	0.33		
	K	2	0.50	±50	4
		3	0.34		
		4	0.25		3
		5	0.20		

*** TCR（ppm/℃）：Test conditions at 20℃~120℃**

***Note: 1.The TCR of some products can be down to 20 ppm/℃，refer to SBBP Series .**

3. Power Derating



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4. Endurance Test

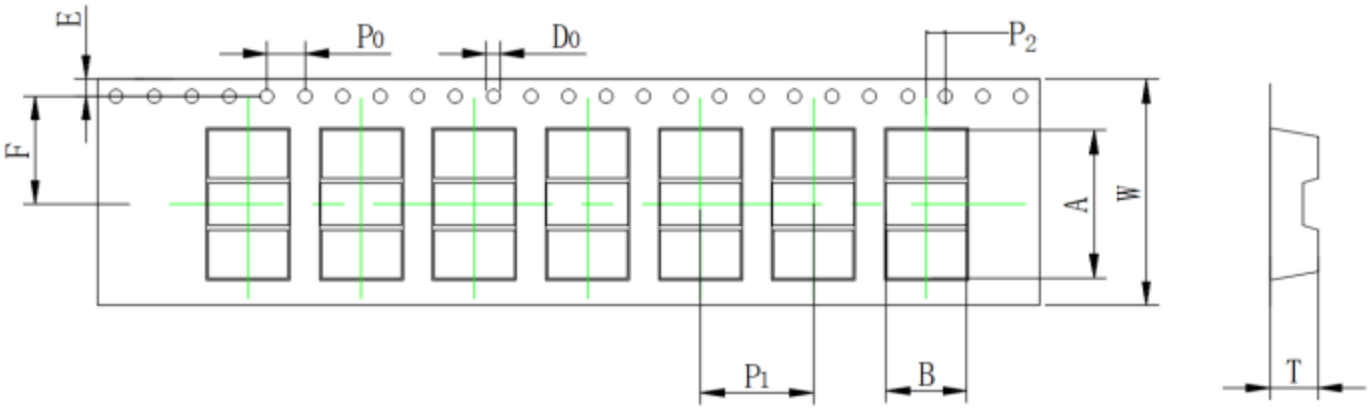
Iterms	Additional Requirements	Reference	Limits
Mechanical Shock	1) Pulse waveform: Half-Sine pulse. 2) Accelerate peak: 100g. 3) Pulse duration: 6ms. 4) Orientation & Shock time: ±X, ±Y, ±Z; 3 times each orientation, total 18 times	MIL-STD-202H Method 213	±0.5%
ESD	1) Direct Contact (DC): ±6kV; 2) Air Discharge (AD): ±12kV, ±16kV, ±25kV;	AEC-Q200-002 REV-B,	±0.5%
Board Flex 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%
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.
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.

5.Marking

Mark	Explanation
R001F	R001：1mΩ (Value 阻值) F：±1% (Tolerance 精度)
0m50F	0m50：0.5mΩ (Value 阻值) F：±1% (Tolerance 精度

6.Packing

Embossed plastic Tape Specifications



Unit/mm

Size	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)

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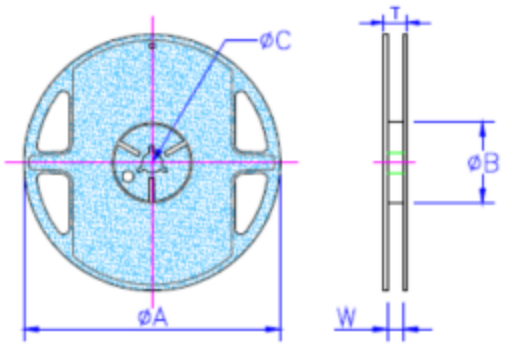
2726	7.5	8	16	1.75	7.5	4	12	2	1.5	3.75	1000
4026	7.5	12.4	24	1.75	11.5	4	12	2	1.5	3.5	1000



Size	2726	4026
ΦA	330	330
ΦB	100	100
ΦC	13	13
W	16.5	24.5
T	21	29

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

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