

# APPROVAL SHEET

## SBB-2726-4026 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	13-Aug-2024	The specifications have been updated to include 0.4mΩ and 0.7mΩ parameters.	林明月	范维龙
A1.2	13-Oct-2024	Update some descriptions in the durability test	林明月	范维龙
A1.3	30-Oct-2024	Update the tape information in the package	林明月	邓小辉
A1.4	15-May-2025	Update the temperature cycle information in reliability, add the direction of tape winding, add the bending test condition of the plate, modify the description of flame retardancy in reliability	江志俊	邓小辉
A1.5	16-Sep-2025	1. Add the 0.8mΩ specification parameter 2. Remove the solvent resistance test	邵凤临	邓小辉

# 1. Product Description

**Product name:** SBB-2726-4026 series

**Description:** SBB-2726-4026 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

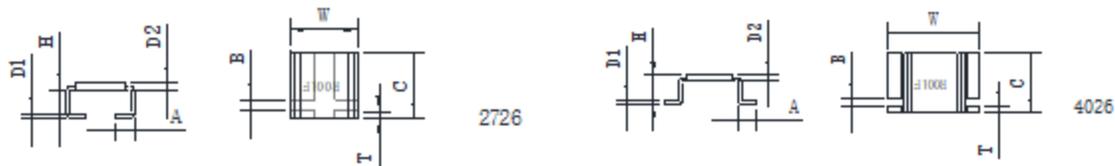
The part number of the high power precision resistor is identified by the type name, Element Material, tolerance, Dimension and resistance value.

**Example:** SBB-K-4026-1F

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

- (1) **Type name:** SBB series
- (2) **Element Material:** M=Manganin; K=Karma; S=CuMnSn
- (3) **Dimension:** 4026 ; 2726
- (4) **Resistance:** 1
- (5) **Tolerance:** D=±0.5%; F=±1%; G=±2%; J=±5%

## 1.2 Products Dimension



Type	Size	W (mm)	A (mm)	C (mm)	B (mm)	T (mm)	H (mm)	D1 (mm)
SBB-S/M/K	2726	$6.9 \pm 0.2$	$1.9 \pm 0.2$	$6.6 + 0.35 / - 0.2$	$1.0 \pm 0.1$	$0.7 \pm 0.1$	$2.4 \pm 0.2$	$0.4 \pm 0.1$
SBB-S/M/K	4026	$10.1 \pm 0.3$	$2.0 \pm 0.2$	$6.6 \pm 0.3$	$1.0 \pm 0.15$		$3.0 \pm 0.5$	

## 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	4	5.5	0.9	0.8	5.6



## 2. Technical Data

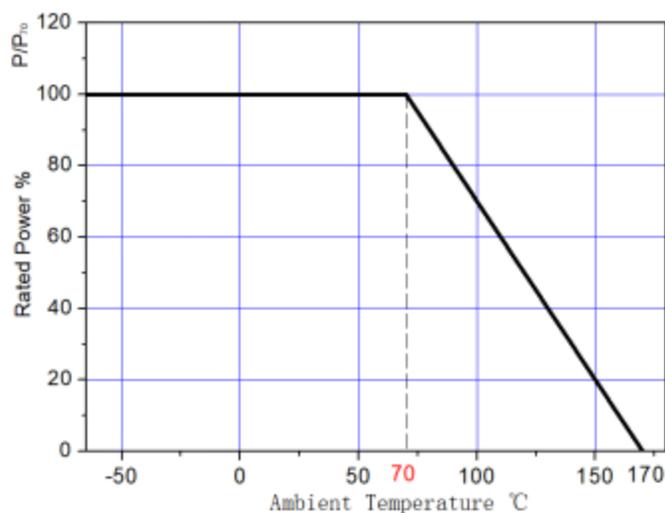
Size	Element Material	Resistance (mΩ)	D2±0.1 (mm)	TCR (ppm/°C)	P70 °C (W)
2726	S	0.2	1.20	± 75	12
	M	0.3	1.20		11
		0.4	0.85		10
		0.5	0.67		9
		0.7	0.50		8

	K	1	0.33	± 50	6
		2	0.50		6
		3	0.34		5
		4	0.25		4
		5	0.2		3
4026	S	0.2	1.20	± 75	12
	M	0.3	1.20		11
		0.4	0.85		10
		0.5	0.67		9
		0.7	0.50		8
		0.8	0.43		7
		1	0.33	6	
	K	2	0.50	± 50	6
		3	0.34		5
		4	0.25		4
		5	0.2		3

\* TCR (ppm/°C) : Test conditions at 20°C~120°C

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

### 3. Power Derating





## 4. Endurance Test

Items	Additional Requirements	Reference	Limits
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  Method JA-104	±0.5%
High Temperature Exposure	1000 hrs. (T=170°C) , unpowered.  Measurement at 24±4 hoursafter test conclusion .	MIL-STD-202  Method 108	±0.5%
Biased Humidity	1000hrs. (85°C/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-202  Method 108	±0.5%
Solderability	Weld bath temperature 245°C±5°C,duration5±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	MIL-STD-202  Method 204	±0.5%



	<p>corners of</p> <p>opposite sides. Parts mounted within 2" from any</p> <p>secure point. Test from 10-2000 Hz.</p>		
Resistance to Soldering Heat	250°C±5°C , 30s±5s	MIL-STD-202 Method 210	±0.5%
Short Time Overload	Apply 5 times the rated power for 5 seconds and release the load for about 30 minutes, then measure its resistance variance rate.	MIL-STD-202 Method 301	±0.5%
Mechanical Shock	<p>1) Pulse waveform: Half-Sine pulse.</p> <p>2) Accelerate peak: 100g.</p> <p>3) Pulse duration: 6ms.</p> <p>4) Orientation &amp; Shock time: ±X, ±Y, ±Z; 3 times each orientation, total 18 times</p>	MIL-STD-202H Method 213	±0.5%
ESD	<p>1) Direct Contact (DC): ±6kV;</p> <p>2) Air Discharge (AD): ±12kV, ±16kV, ±25kV ;</p>	AEC-Q200-002 REV-B,	±0.5%
Board Flex Test	<p>1) PCB board size(H×W×T): 100mm × 40mm</p> <p>×1.6mm.</p> <p>2) Press tool: r = 340mm, Width = 20mm.</p> <p>3) Deformation displacement: 2mm.</p> <p>4) Duration: 60 (+5) s</p>	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 current: 100%, 115%, 130%, 150% (Rate current) ;	AEC-Q200-001	The following constitutes a failure:1)A flame over 3.0 seconds durat

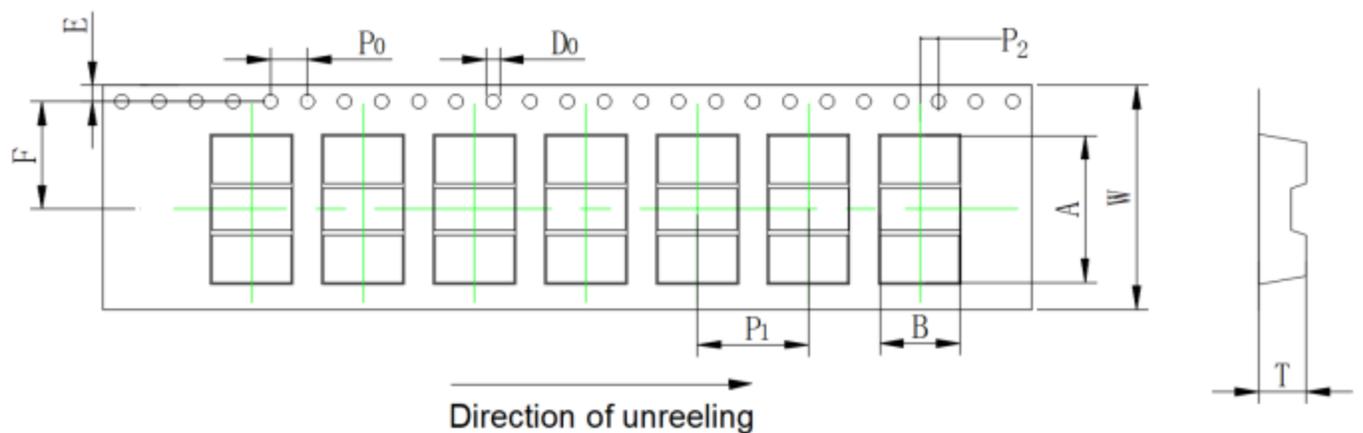
	2) Test duration: 1h .	ion;2)An explosion:3) A temperature above 350'c sustained for over 10 seconds.
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## 5. Marking

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

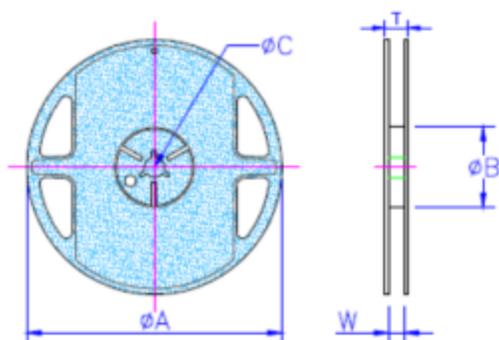
## 6. Packing

### 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)
In	7.5	8	16	1.75	7.5	4	12	2	1.5	3.75	1000
Out	7.5	12.4	24	1.75	11.5	4	12	2	1.5	3.5	1000



Size	In	Out
$\phi A$	330	330
$\phi B$	100	100
$\phi C$	13	13
W	16.5	24.5
T	21	29

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