APPROVAL SHEET

SBBP SERIES

4-Terminal Shunt Resistor

Version	Date	Description of amendment	Draft	Checked
A1.0	30-Mar-2022	First edition	邹文鉴	胡紫阳
A1.1	7-Jun-2022	Add 0.2, 0.6, 0.75,0.9, 4, and 5 mΩ product models	邹文鉴	胡紫阳
A1.2	3-Nov-2022	Added TCR suffix identifier I: 0~+20 F: -40~0	邹文鉴	胡紫阳
A1.3	2-Jan-2024	1. Add the 0.7mΩ product model 2. Update the temperature drift test conditions for K material	郑杰龙	邹文鉴

Tel. +86-755-83727115 Fax: +86-755-26619489 Email: rachel@yezhan.com.cn

1.Product Description

Product name:SBBP series

Description:SBBP 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,TCR and resistance value.

Example: SBBP-K-1F-y-I

Type	Element Material	Resistance Value	Tolerance	Other	TCR (ppm/℃)
SBBP	M=Manganin K=Karma	1 Unit：mΩ	D=±0.5% F=±1% G=±2% J=±5%	y：Out（外折） n：In（内折）	F=-40~0 I=0~+20 =standard TCR

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

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

(3) **Resistance:**1

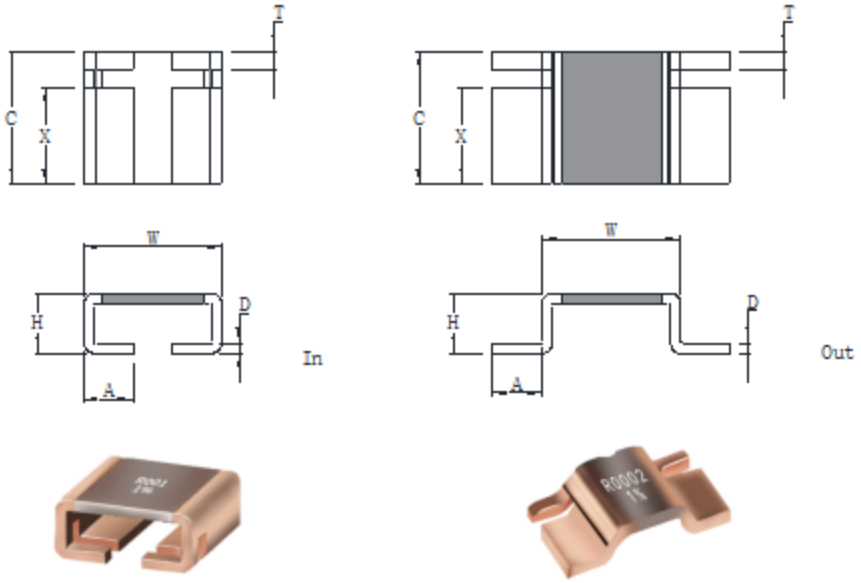
(4) **Tolerance**：D=±0.5%;F=±1%;G=±2%;J=±5%

(5) **Other:**y=Out(外折)；n=In(内折)

(6) **TCR:**F=-40~0;I=0~+20;=standard TCR

Tel. +86-755-83727115 Fax: +86-755-26619489 Email: rachel@yezhan.com.cn

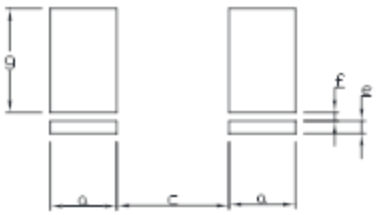
1.2 Products Dimension



Type	Size	W (mm)	A (mm)	C (mm)	X (mm)	T (mm)	H (mm)	Tolerance (mΩ)
SBBP-M/K	In	6.9±0.3	2.5±0.2	6.6±0.3	4.8	0.9±0.1	3±0.5	0.2-5
SBBP-M/K	Out							

1.3 PCB-layout (Reflow-soldering)

Solder pad type	a	c	e	f	g
In	2.9	1.9	0.9	0.8	5.6
Out	4	5.5	0.9	0.8	5.6

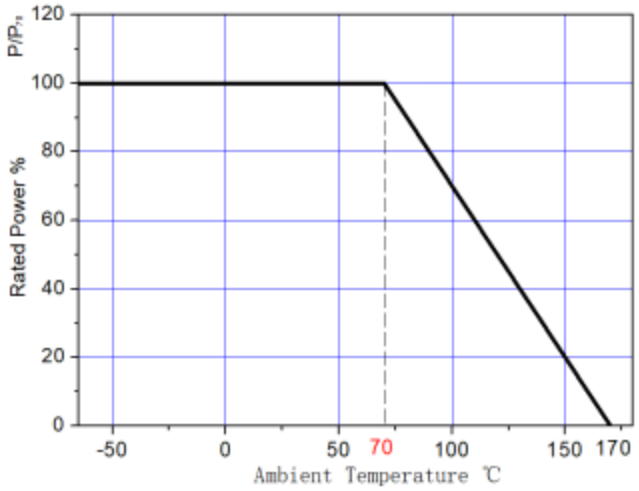


2. Technical Data

Size	Element Material	Resistance (mΩ)	D±0.1 (mm)	TCR (ppm/℃)	P70 °C (W)
In	S	0.2	0.40	±40	12
	M	0.3	0.40		11
		0.5	0.67		9
		0.6	0.57		8
		0.7	0.48		7
		0.75	0.45		7
		0.9	0.37		7
		1	0.33		7
	K	1	0.40	±20	7
		2	0.51		6
		3	0.34		5
		4	0.40		4
		5	0.40		3
Out	S	0.2	0.40	±40	12
	M	0.3	0.40		11
		0.5	0.67		9
		0.6	0.57		8
		0.7	0.48		7
		0.75	0.45		7
		0.9	0.37		7
		1	0.33		7
	K	1	0.40	±20	7
		2	0.47		6
		3	0.34		5
		4	0.40		4
		5	0.40		3

*** S/M material TCR test conditions at 20℃~120℃,K material TCR test conditions at -55℃~170℃.**

3. Power Derating



4. Endurance Test

Iterms	Additional Requirements	Reference	Limits
Temperature Cycling	1000 Cycles(-55℃ to +125℃)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	100hrs.@T=170℃.Unpowered.	MIL-STD-202 Method 108	±0.5%
Biased Humidity	1000hrs 85℃/85%RH。 Note:Specified conditions:10% of operating power.	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125℃ at rated power.	MIL-STD-202 Method 108	±0.5%

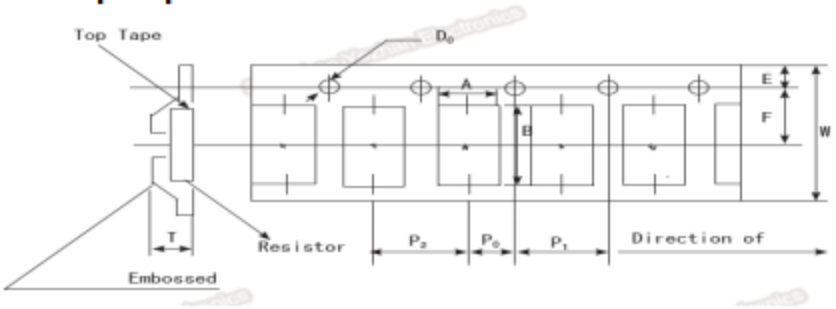
Solderability	245℃±5℃,5s±0.5s	J-STD-002C	95% Coverage Minimum
Resistance to Soldering Heat	260℃±5℃，10s±1s	MIL-STD-202 Method 210	±0.5%
Short Time Overload	5×Rated power for 5 s	MIL-STD-202 Method 301	±0.5%

5.Marking

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

6.Packing

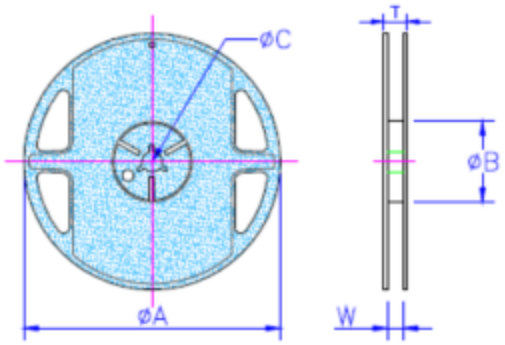
Embossed plastic Tape Specifications



Tel. +86-755-83727115 Fax: +86-755-26619489 Email: rachel@yezhan.com.cn

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	7.35	6	12	12	1.5	3.8	1000
Out	7.5	12.1	24	1.75	12.2	6	12	12	1.5	3.5	1000



Size	In	Out
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.

Tel. +86-755-83727115 Fax: +86-755-26619489 Email: rachel@yezhan.com.cn