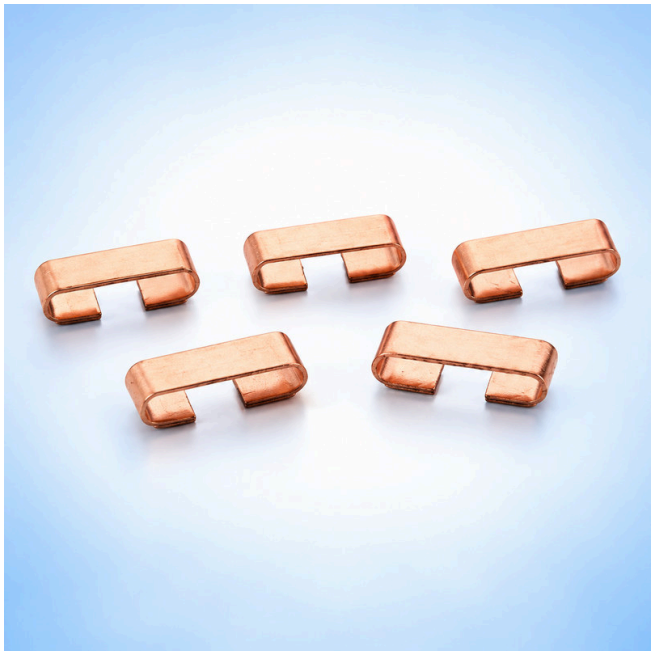
SBN SMD Alloy Shunt Resistors

Features

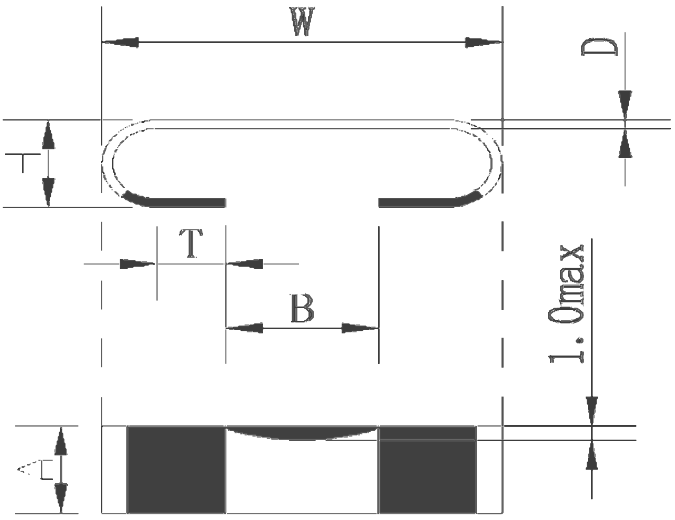
- Tolerance: ±5%, ±2%, ±1%
- Operating temperature: -65°C~170°C
- Electron-beam welding; pulse applications
- RoHS; AEC-Q200; customizable

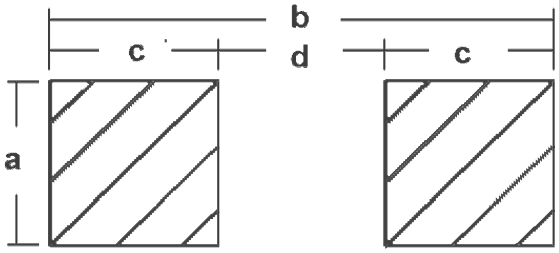


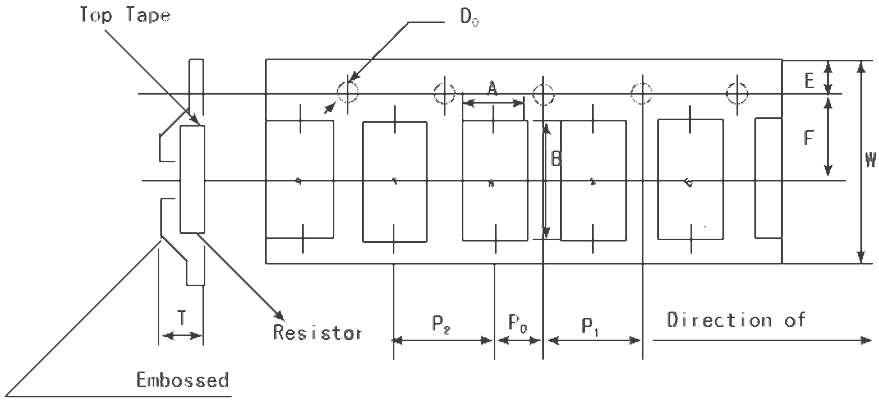
Applications

Frequency-conversion and servo drives; high-current battery management; automotive electronic control and oil-pump drives; DC/DC and DC/AC power modules; automatic control; industrial instruments.

Dimensions and Recommended Pads • mm







Marking

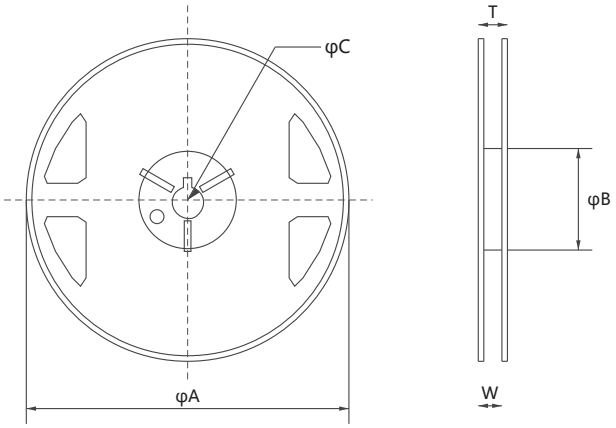
R001 F: R001=1mΩ; F=±1%.

Type	Size	Resistor (mΩ)	W (mm)	H (mm)	T (mm)	B (mm)	A (mm)	D (mm)
SBN-K/M/F Series	4312	2-50	11±0.5	2.7-4.0	2.8±0.3	4.2±0.5	3.1±0.3	0.12-0.7
SBN-K/M/F Series	4320	1-25	11±0.5	2.7-4.0	2.8±0.3	4.2±0.5	6.1±0.4	0.12-0.7

Solder Pad Type	Size	Resistor (mΩ)	a (mm)	b (mm)	c (mm)	d (mm)
SBN-K/M/F Series	4312	2-50	3.6+0.2/0	13.2±0.3	5±0.1	3.2±0.1
SBN-K/M/F Series	4320	1-25	6.5+0.2/0	13.2±0.3	5±0.1	3.2±0.1

Additional drawing callout	Value (mm)
Unlettered callout	1.0max

Reel Specifications • mm



Size	φA	φB	φC	W	T
4312/4320	330	100	13	24.5	29

Endurance Tests

Test item	Test conditions	Reference	Limit
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	MIL-STD-202 Method 208H	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%

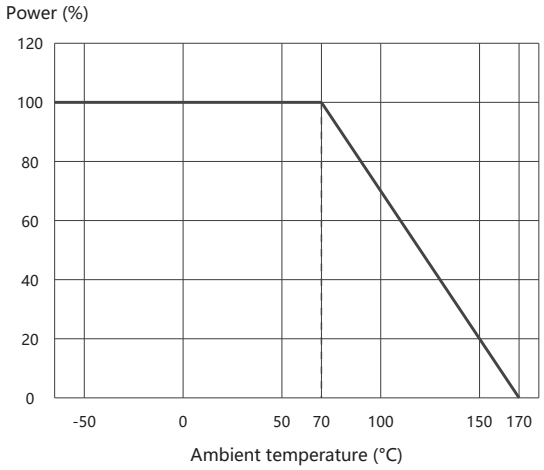
Embossed Tape Specifications • mm

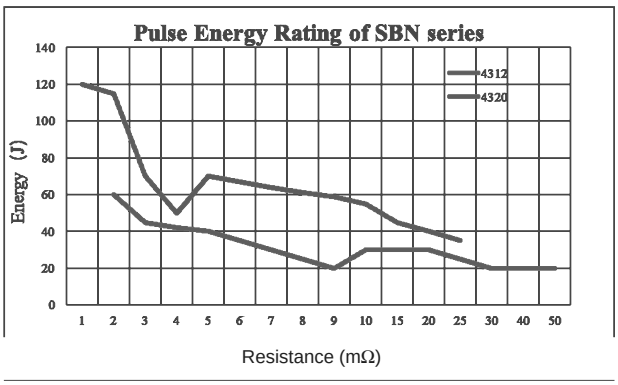
Size	A±0.1	B±0.1	W±0.3	E±0.1	F±0.1	P0±0.1	P1±0.1	P2±0.1	D0±0.1	T±0.1	Quantity (pcs)
4312	4.3	12.5	24	1.75	11.5	2	4	8	1.50	3.7	2000
4320	7.0	12.5	24	1.75	11.5	2	4	12	1.50	4.0	1000

Electrical Specifications

Size	Size	4312	4312	4320
Resistance(Unit：mΩ)	Resistance(Unit：mΩ)	2~15	16~50	1~25
Tolerance	Tolerance	±1%、±2%、±5%	±1%、±2%、±5%	±1%、±2%、±5%
Operating temperature range	Operating temperature range	-65℃ to +170℃	-65℃ to +170℃	-65℃ to +170℃
Power P70℃(Unit：W)	Power P70℃(Unit：W)	3	2	5
Temperature coefficient (Unitppm/℃)	Temperature coefficient (Unitppm/℃)	2、3mΩ：≤ 240	2、3mΩ：≤ 240	1mΩ：≤ 240
Temperature coefficient (Unitppm/℃)	Temperature coefficient (Unitppm/℃)	F/K：±40 M：±50	F/K：±40 M：±50	F/K：±40 M：±50
Material(Unit：mΩ)	M：Manganin	2~9	2~9	1~4
Material(Unit：mΩ)	F：FeCrAl	10~50	10~50	5~25
Material(Unit：mΩ)	K：Karma	10~50	10~50	5~25

Power Derating and Pulse Energy





TCR test range: 20°C~120°C.

Ordering Information

Field	Codes and description
Type	SBN
Material	M: Manganin; K: Karma; F: FeCrAl
Resistance	15(mΩ)
Tolerance	J: ±5%; G: ±2%; F: ±1%
Size	4312；t: 4320

Standard measuring conditions: 20±2°C, 65±5%RH. When the judgment is unambiguous, measurements may be made at 5~35°C and 45~85%RH.