

特征 Features

精度±5%、±2%、±1%	Tolerance ±5%, ±2%, ±1%
使用温度-65°C~170°C	Operating Temperature range -65°C~170°C
电子束焊接结构	Electron beam welding
耐冲击	Ideal for pulse application
符合RoHS 要求	RoHS Compliant
特殊规格可以订做	Customizable
符合AEC-Q200	AEC-Q200 qualified



应用范围 Applications

变频驱动、伺服驱动系统	Frequency conversion drive, servo drive system
大电流电池管理系统	High current battery management system
汽车电子控制单元、汽车油泵驱动	Automobile electronic control unit, automobile oil pump drive
DC/DC, DC/AC电源模块	DC/DC, DC/AC power modules
自动化控制系统	Automatic control system
工业仪器设备	Industrial instrument and equipment

订购信息 Ordering information

SBN	-K	-15	F	-t
Yezhan Type:	Element Material:	Resistance Value(mΩ)	Tolerance:	Size:
SBN	M: Manganin K: Karma F: FeCrAl		J: ±5% G: ±2% F: ±1%	:4312 t:4320

说明 Notice

适用范围 Scope

本承认书适用于深圳市业展电子有限公司 制造之[分流贴片电阻器]。

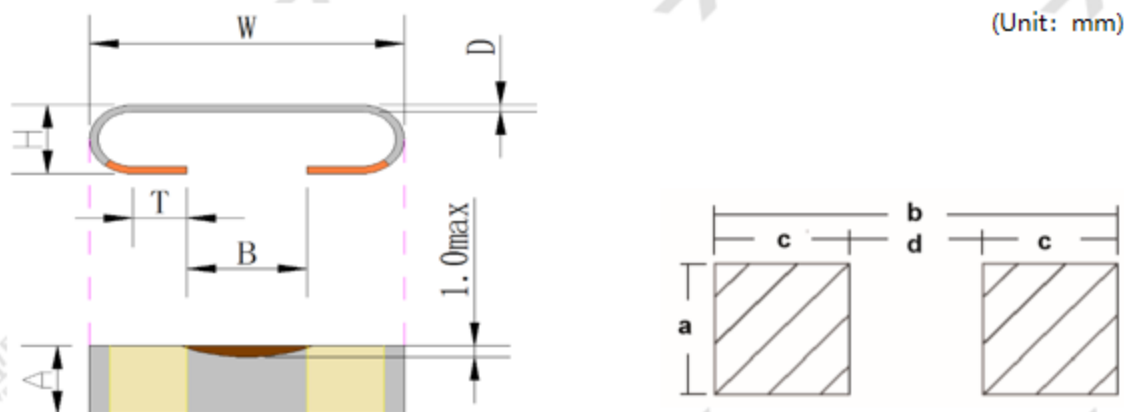
This specification is available for Alloy Shunt Resistors manufactured by Shenzhen Yezhan Electronics Co., Ltd.

标准试验状态 Standard measuring conditions

温度 $20\pm 2^{\circ}\text{C}$ 、湿度 $65\pm 5\%$ 。但在温度 $5\sim 35^{\circ}\text{C}$ 、湿度 $45\sim 85\%$ 之情况下，仍可给予判定。

Temperature $20\pm 2^{\circ}\text{C}$, Humidity $65\pm 5\%$. Being no doubt about the judgment, measurements can be made within the following Temperature $5\sim 35^{\circ}\text{C}$, Humidity $45\sim 85\%$.

产品尺寸和PCB板布局 Product Dimensions and pcb-layout (Reflow-soldering)



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
	4320	1-25					6.1±0.4	

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
	4320	1-25	6.5+0.2/0			

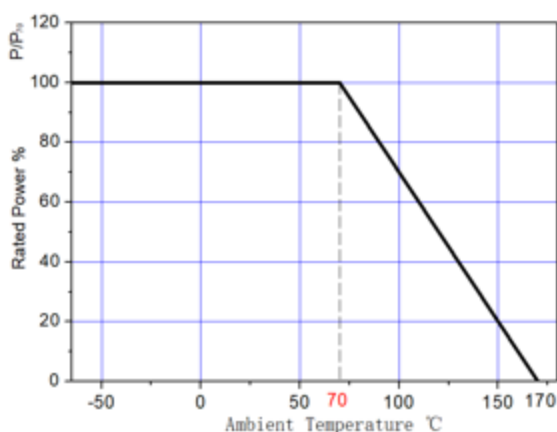
技术参数 Technical Date

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

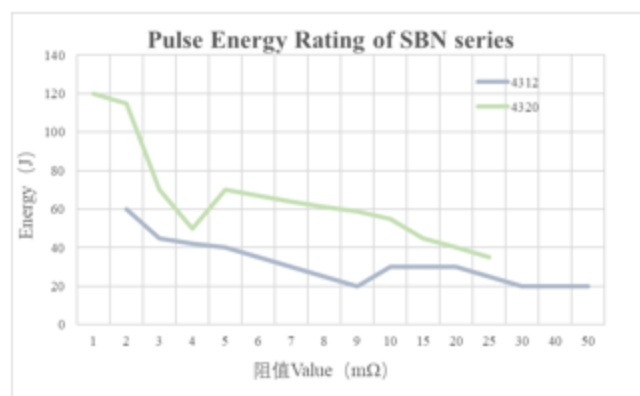
TCR (ppm/°C) : Test conditions at 20°C~120°C.

工作特性 Performance Data

降功率曲线 Power Derating



脉冲曲线 Pulse curve



耐久性测试 Endurance Test

Items	Additional Requirements	Reference	Limits
Temperature Cycling	1000 Cycles(-55°C to +125°C)	JESD22 Method JA-104	±0.5%
High Temperature Exposure	100hrs.@T=170°C.Unpowered.	MIL-STD-202 Method 108	±0.5%
Biased Humidity	1000hrs 85°C/85%RH. Note:Specified conditions:10% of operating power.	MIL-STD-202 Method 103	±0.5%
Operational Life	Condition D Steady State TA=125°C at rated power.	MIL-STD-202 Method 108	±0.5%
Solderability	245°C ±5°C,5s±0.5s	MIL-STD-202 Method 208H	95% Coverage Minimum
Resistance to Soldering Heat	260°C ±5°C, 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%

印字标识 Marking

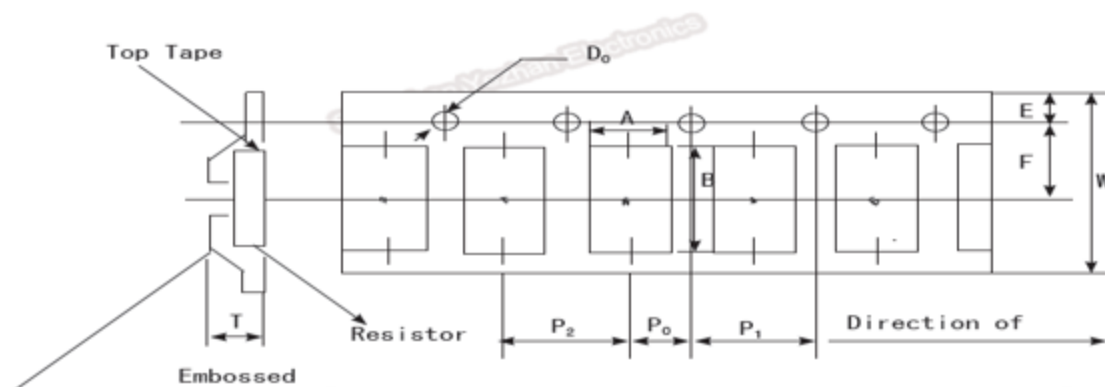
R001 F

R001: 1mΩ阻值 Value F: ±1%精度 Tolerance

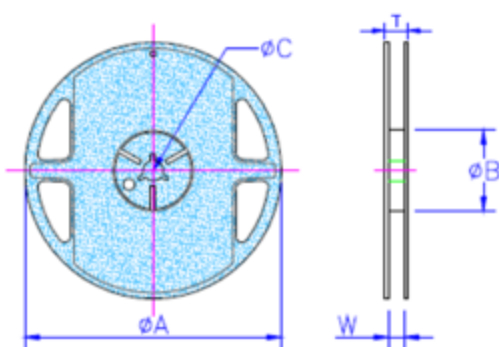
包装 Packaging

Embossed plastic Tape Specifications

(Unit: mm)



Size	A±0.1	B±0.1	W±0.3	E±0.1	F±0.1	P ₀ ±0.1	P ₁ ±0.1	P ₂ ±0.1	D ₀ ±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



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

版本信息 Version History

版本 Version	日期 Date	修订描述 Description of amendment	拟定 Draft	审核 Checked
A1.0	01-Mar-2022	首版发行	邹文鉴	胡紫阳

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