⊕ Feature

- Low profile very effective in space-conscious applications.
- Low resistance and high energy storage.

⊕ Applications

VTR, OA equipment, digital camera, LCD TV, notebook PC, portable communication equipments, DC/DC converters, power supply etc.

⊕ Product Identification :

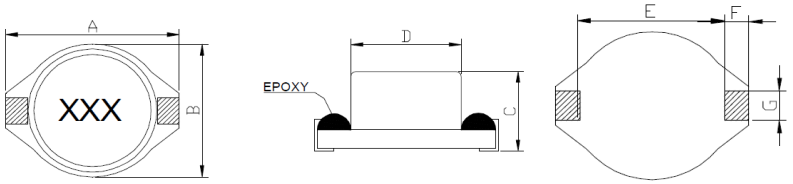
□□□ □□□□ □ - □□□ □

1 2 3 4 5

Series name	Dimensions(WxLxH)		Internal code
SPA	1608	6.6*4.45*2.92mm	A
	3316	12.95*9.4*5.21mm	:
	5022	18.54*15.24*7.62mm	M= Mn-Zn Type
			S = Standard

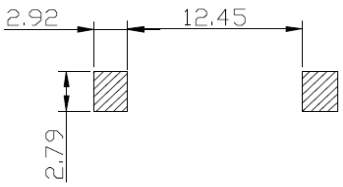
Inductance		Tolerance	
1R0	1 µH	J	5%
100	10 µH	K	10%
101	100 µH	M	20%
102	1000 µH	N	30%

⊕ Shapes And Dimensions



⊕Recommended PCB Pattern

(in mm)



Part No.	Dimensions(mm)							
	A	B	C	D	E	F	G	
SPA5022M-101M	18.54	15.24	7.62	12.70	12.70	2.54	2.54	
	Max.	Max.	Max.	±0.3	Ref	Ref	Ref	

⊕ Electrical Characteristics :

Part No.	Inductance (µH)	Rated Current (A)	DCR (mΩ)	Test Frequency (Hz / V)
SPA5022M-101M	100 ± 20%	2.4 Max.	207 Max.	100K / 0.1

※Rated Current：Lower Inductance by 20 %)

⊕ Equivalent Circuit Schematic :

⊕ Material List :

No.	Location	Material
1	Core	DR+SRI Ferrite core
2	Wire	Grade1 P180
3	Clip	SC5022-1 電木+P1
4	Epoxy	G500HF
5	Solder	Sn99.3 Cu0.7

1.Operating temperature -40℃ ~ +125℃

2.Storage conditions -40℃ ~ +125℃

旭創科技
RSiN Technology

Shielded Power Inductor \ SPA Type

TEST DATA FOR PREPRODUCTION SAMPLES

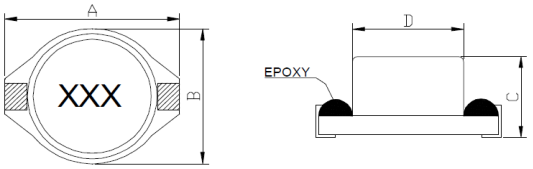
Customer		Test Date	2015-8-26		
RSiN Part No.	SPA5022M-101M	Sample Quantity	10	PCS	
Lot No		Test Temp	25℃	Test Humidity	62%

MEAS Item	L (0A) (μH)	L (2.4A) (μH)	下降率	DCR (mΩ)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)		
SPEC	100	L(0A)*20%	20%	207.00	18.54	15.24	7.62			-	-
Upper	120	-	20%	207.00	18.54	15.24	7.62	-	-	-	-
Lower	80	64	-	-	-	-	-	-	-	-	-
Tolerance	20%	Min	Max	Max	Max	Max	Max				
Test Freq.	100KHz / 0.1V									-	-
1	100.60			165.40	18.16	14.12	6.88				
2	10.1.8			166.30	18.15	14.12	6.87				
3	10.1.4			165.60	18.15	14.12	6.86				
4	99.80			165.40	18.16	14.12	6.86				
5	102.60			165.40	18.18	14.11	6.87				
6	102.80			166.20	18.16	14.13	6.86				
7	101.30			165.40	18.20	14.12	6.86				
8	102.50			165.30	18.18	14.13	6.87				
9	102.40			165.10	18.16	14.11	6.88				
10	101.80			165.40	18.18	14.12	6.85				
Average	101.73			165.55	18.17	14.12	6.87				
Max	102.80	0.00	0.00%	166.300	18.20	14.13	6.88			0.00	0.00
Min	99.80	0.00	0.00%	165.100	18.15	14.11	6.85			0.00	0.00
Range	3.00	0.00	0.00%	1.200	0.05	0.02	0.03			0.00	0.00
StDevP	1.01	#DIV/0!	#DIV/0!	0.369	0.02	0.01	0.01			######	######

Test Instrument

LCR	VR 1153 LCR+DCR METER.
DCR	VR 1153 LCR+DCR METER.
R.Curremt	VR 7210 IDC METER +
	VR 1153 LCR+DCR METER

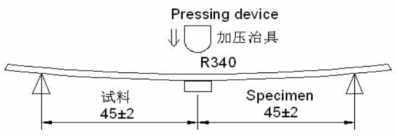
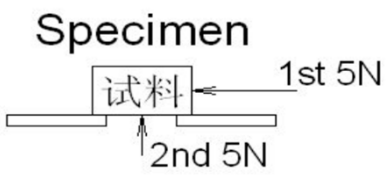
Configuration



Coil Spec：

Drawn by	Checked by	Approved by
davy	amanda	Vincent

⊕ General Characteristics

項目 Item	Conditions	Specification
温度特性 Temperature drift	在温度-40 ~ + 125℃之间测试。 To be measured in the range of -40℃ to 125℃.	Inductance temperature coefficient 2000 ppm/℃ or less
保存温度范围 Storage Temperature	在包装的状态下。 With taping.	- 40℃ ~ + 125℃
使用温度范围 Operating Temperature	包括制品的发热温度。 Including self temperature rise.	- 40℃ ~ + 125℃
弯曲测试 Bending test	试件焊接在基板上，按箭头方向以大约0.5mm/秒的速度加压，直到基板变形幅度到3mm 保持30 秒。 Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30± 5s.  基板Board: 40*100mm 厚Thickness: 1.0mm	Change from an initial value L : within±10%
固着强度 Adhesion strength	按箭头方向用R0.5 的加压棒在试件中施加一定的静力并保持60±5秒. A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure. 	Change from an initial value L : within±10%

耐振性 Vibration	振动频率10～55～10Hz, 振幅1.5mm, 分X,Y,Z方向各振动1 小时（共3 小时）。 The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.	Change from an initial value L : within±10%
耐冲击性 Mechanical shock	利用橡胶块式落下冲击试验机，分别在3 个互相垂直的方向以981m/S2 的冲击加速度落下。 Peak acceleration: 981 m/S2 Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.	Change from an initial value L : within±10%
自然落下试验 Free fall test	试件安装在基板上，并固定在重500 克的盒中，由1 米高自由落体，3 个互相垂直的方向各3 次。 The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.	Change from an initial value L : within±10%
焊锡付着性 Solder ability	试验品的电极深布松香后， 在5 ～ 10 秒内焊锡，焊锡槽温度245±5℃，时间：3±0.5 秒。 Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5℃ for 3±0.5 seconds.	90%以上的面积要被覆盖。 New solder shall cover 90% minimum of the surface immersed.
耐电压 Dielectric strength	在电极与磁材之间加入直流电压100V 通电时间1 分钟。 100V DC shall be applied for 60s between the terminal and the core.	没有损害。 Without damage.

焊锡耐热性 Resistance to soldering heat	试验方法Test method 热风炉焊接Reflow soldering method 预热Preheat 150~180℃ 90±30s 峰值温度Peak temp 250(+ 5,-0)℃ (230℃min , 30±10s) 试验板的厚度0.8mm 上按上面条件通过两次热风炉。 The specimen shall be subjected to the reflow process under the above condition 2 times.Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. 测定Measurement 常温常湿中放置于1 小时以上测试。 The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.	Change from an initial value L : within±10%
绝缘抵抗 Insulation resistance	在电极与磁材之间加入直流电压100V。 100V DC shall be applied between the terminal and the core.	100mΩ 以上 100mΩ or more.
耐寒性 Low temperature	在温度-40±3℃中放置500±12 小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of -40±3℃ for 500 ±12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement Measurement shall be made within 1h.	Change from an initial value L : within±10%
耐热性 Dry heat	在温度125±2℃中放置500±12 小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of 125 ± 2℃ for 500± 12h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

耐湿性 Dump heat	在温度60±2℃，湿度90～95%中放置500±12小时后，常温常湿中放置1 小时以上2 小时以内测试。 The specimen shall be stored at a temperature of 60±2℃ with relative humidity of 90 ~ 95% for 500 ± 2h. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%
温度循环 Temperature cycle	以温度-40℃中放置30 分钟，在125℃放置30 分钟，中间转换时间不超过2 分钟为一个循环。完成500 个循环后，常温常湿中放置1小时以上2小时以内测试。 The specimen shall be subjected to 500 continuous cycles of temperature change of -40℃ for 30 min and 125℃ for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.	Change from an initial value L : within±10%

标准状态Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions in making measurements and test as follows;

Ambient temperature : 5℃ to 35℃, Relative humidity: 45% to 85%, Air pressure: 86kPa to 106kPa

If more strict measurement is required, measurement shall be made within following limits;

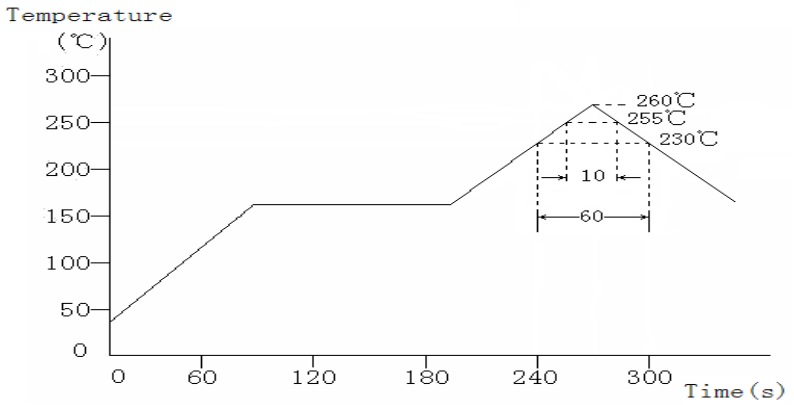
Ambient temperature : 20±2℃, Relative humidity: 65±5%, Air pressure: 86kPa to 106kPa

禁用物质Prohibited Subtances

我公司保证我司的产品和生产过程符合"ROHS 规则"，所有产品中使用的材料均是化学物质生产规则中登记的材料。

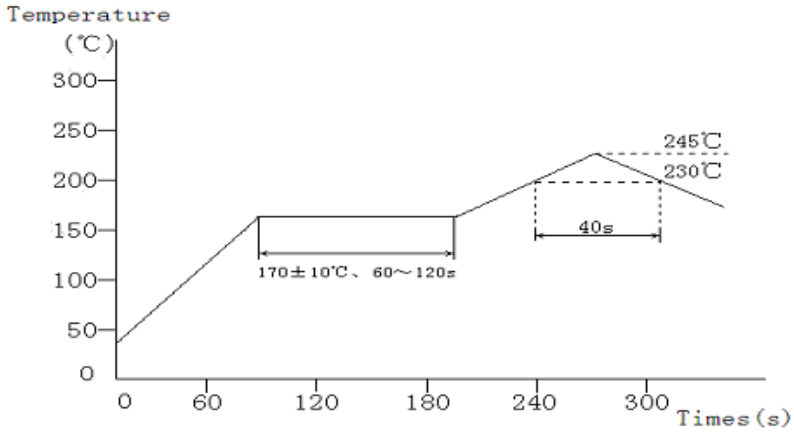
We confirm that our products and our production process accord with "rule of RoHS". All materials used in this product are registered material under the law concerning the examination and Regulation of Manufacture of Chemical Substances.

⊕ Reflow Soldering Heat Endurance



No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.
Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.
The reflow test profile may vary with the testing instruments.

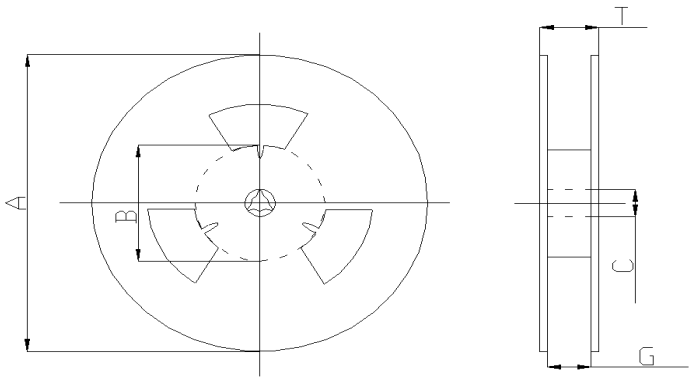
⊕ Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

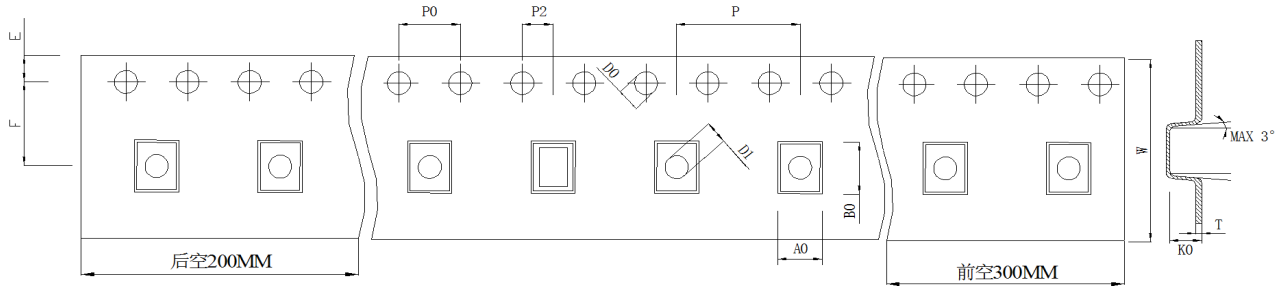
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

⊕Reel Dimension(m/m)



Item	A(mm)	B(mm)	C(mm)	G(mm)	T(mm)
13"x32	330	100	13	32.5	37.1

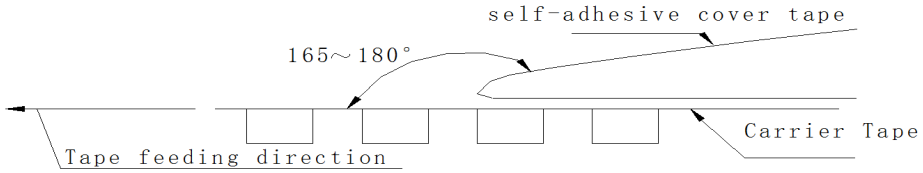
⊕2. Taping Dimension(m/m)



Item	W	A0	B0	K0	E	F	P	P0
32mm	32.0±0.3	15.4±0.1	18.8±0.1	7.5±0.1	1.75±0.1	14.2±0.1	20.0±0.1	4.0±0.1
	P2	D0	D1	T				
	2.0±0.1	1.5±0.1	1.5±0.3	0.4±0.05				

⊕Tape Peel off Strength

The force to tear off cover tape: 10~130g.f



⊕ Packaging Carton

Reel Packing Unit	Inner Box Packing	Carton Packing Unit
250 PCS / REEL	500 PCS / Box	1000 PCS / Box