DMBJ东莞市振宝佳电子有限公司

承　认　书

APPROVAL SHEET

客　　户
CUSTOMER: _____

客 户 料 号
CUSTOMER P/N: _____

物 料 名 称
MODEL NO： 一体成型电感

料 号
P/N： SM系列

文 件 编 号
FILE NO： 26.02

客户 Customer		制造 Manufacturer	
检验 Check by		拟制 Draft by	LIAO CHUN LING
审核 Checked by		审核 Checked by	YUAN JIA HONG
批准 Approval by		确认 Approve by	HE SHAO LIN
签章/ SIGNATURES:		签章/ SIGNATURES:	

●Features

- High rated current
- Frequency up to 3 MHz
- 125℃ maximum total temperature operation
- Low core loss
- Ultra low buzz noise due to molding construction
- Halogen Free & ROHS compliant



●Applications

- Laptops and PCs
- Switch and servers
- Base stations
- DC/DC converters
- Battery powered devices
- SSD modules

●Ordering Procedure

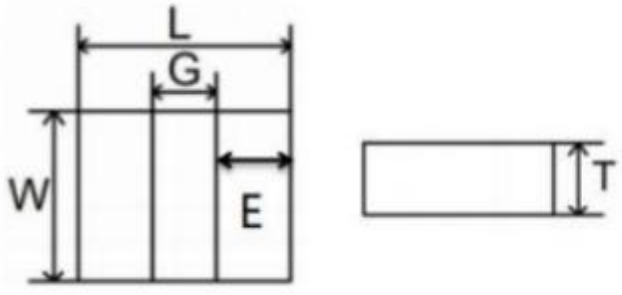
ZBJ	5050	20	S	1R0	M	B	C	A
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Companyname:DongguanZhenbaojiaElectronicsCo.,Ltd.
② External Dimensions(L×W):5050=5.2*5.0 mm
③ External Dimensions(H):20=2.0mm
④ Size Tolerance: S=±0.2mm
⑤ Inductance value:1R0= 1.0uH
⑥ Tolerance:M=±20%
⑦ Coating color:B=Black G=Gray
⑧ Product type:C=Common
⑨ Special define:A=Routine

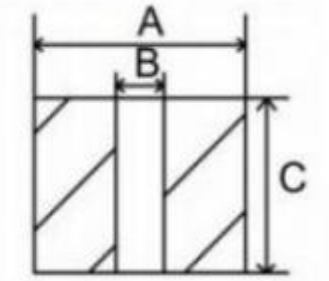
For special characteristics, please refer to the specific values in Item 5 "Specifications".

● Dimensions (unit:mm)

Outline Dimensions



PCB Pattem



Series	L	G	W	E	T	A	B	C
ZBJ505020S	5.2±0.2	2.0±0.2	5.0±0.2	1.60±0.2	2.00Max.	5.50	1.60	5.30

●Electrical characteristics

P/N	L0(μH) @(0A) 1MHz	Rdc(mΩ)		Heat rating current Irms(A)		Saturation current Isat(A)	
		Typical	Max	Typical	Max	Typical	Max
ZBJ505020SR33MBCA	0.33	3.2	3.7	20	17	24	21
ZBJ505020SR68MBCA	0.68	4.4	5.5	15	14	20	17
ZBJ505020S1R0MGCA	1.0	7	8.4	14.0	13.0	16.0	14.0
ZBJ505020S1R5MGCA	1.5	13	17	13.0	10.0	12.0	10.0
ZBJ505020S2R2MGCA	2.2	24	29	7.0	6.5	9.5	8.5
ZBJ505020S3R3MGCA	3.3	38	43	7.0	6.0	10.0	8.0

●Marking:

Note 1.：The inductor is marked with a 3-digit code Example – – 1.0 μH → 1R0

Note 2.：The point on the top surface represents winding direction of choke

●Test remarks

1、All test data is referenced to 25 ℃ ambient.

2、Test Condition:1MHz, 1.0Vrms.

3、Irms（Max）:DC current (A) that will cause an approximate △T of 40 ℃ .

4、Isat(Max):DC current (A) that will cause L0 to drop approximately 30%.

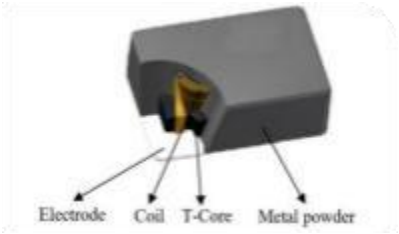
5、Operating Temperature Range -55℃ to + 125℃ .

6、The part temperature (ambient + temp rise) should not exceed 125 under ℃ the worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.

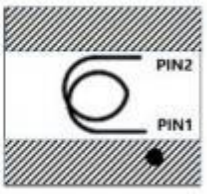
7、The rated current as listed is either the saturation current or the heating current depending on which value is lower.

8、Maximum withstand voltage 40V

●Structure

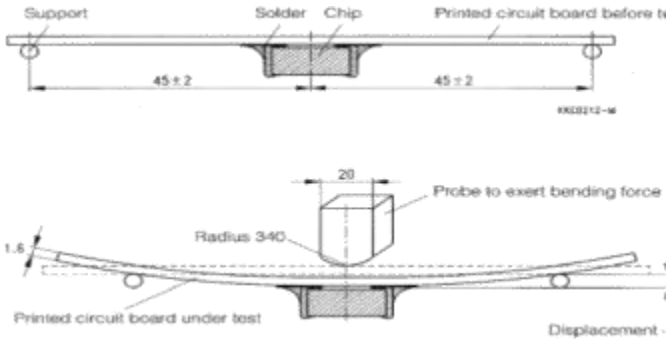
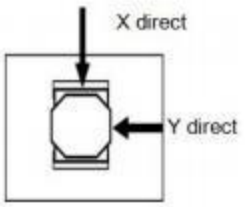






●Reliability

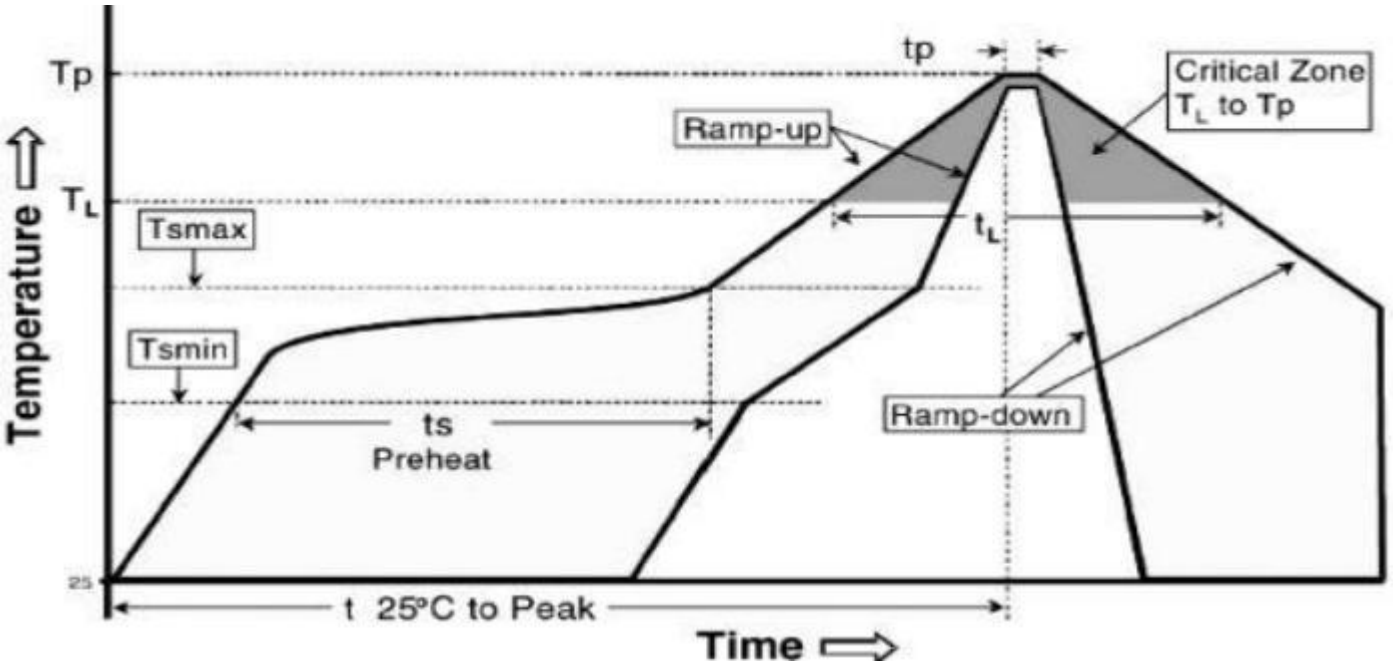
Item	Specification and Requirement	Test Method
Solderability	**1.** No case deformation or change in apperarance 2. New solder coverage More than 90%	1.Preheat：125℃±5℃ ， 60S±2S 2.Tin: lead-free. 3.Temperature:245℃±5℃， flux 3.0S±0.5S.
Mechanical shock	1. No case deformation or change in apperarance 2. △L/Lo≦ ±10%	1. Acceleration： 100G 2. Pulse time:：6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in apperarance 2. △L/Lo≦ ±10%	1. The test samples shall be soldered to the board. Then it shall be submitted to below test conditions. Fre. Range: 10~55Hz Total Amplitude: 1.5mm Sweeping Method: 10Hz to 55Hz to 10Hz Time: For 2 hours on each X,Y,Z axis. 2. Recovery: At least 2 hours of recovery under the standard condition after the test, followed by the measurement within 24 ±2 hours.
Thermal Shock	Inductance change: Within ± 10% Without distinct damage in appearance	1. First -55℃ for 30 minutes，last 125℃ for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 2 minutes. 3. Measured at room temperature after placing for 24±2 hours
Humidity Resistance	Inductance change: Within ± 10% Without distinct damage in appearance	1.Reflow 2 times, 2.85℃,85%RH, 1000 hours 3.Measured at room temperature after placing for 24±2 hours
Low temperature storage	Inductance change: Within ± 10% Without distinct damage in appearance	1. Temperature：-55 ± 2℃ 2. Time：1000 hours 3. Measured at room temperature after placing for 24±2 hours

High temperature storage	Inductance change: Within ± 10% Without distinct damage in appearance	1. Temperature：+125 ± 2℃ 2. Time：1000 hours 3. Measured at room temperature after placing for 24±2 hours
Board Flex	Inductance change: Within ± 10% Without distinct damage in appearance	1、Run through IR reflow for 2 times； 2、Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down 3、The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum. 4、The duration of the applied forces shall be 60±5 sec. The force is to be applied only once to the board. 
Terminal Strength	No removal or split of the termination or other defects shall occur.	1、The test samples shall be soldered to the board 2、Push the product vertically from the side of the sample using the thrust tester. 3、Automotive electronics：17.7N，60S±1s，X，Ydirect. 

● Soldering Condition

(This is for recommendation, please customer perform adjustment according to actual application)

Recommend Reflow Soldering Profile：(solder ： Sn96.5 / Ag3 / Cu0.5)



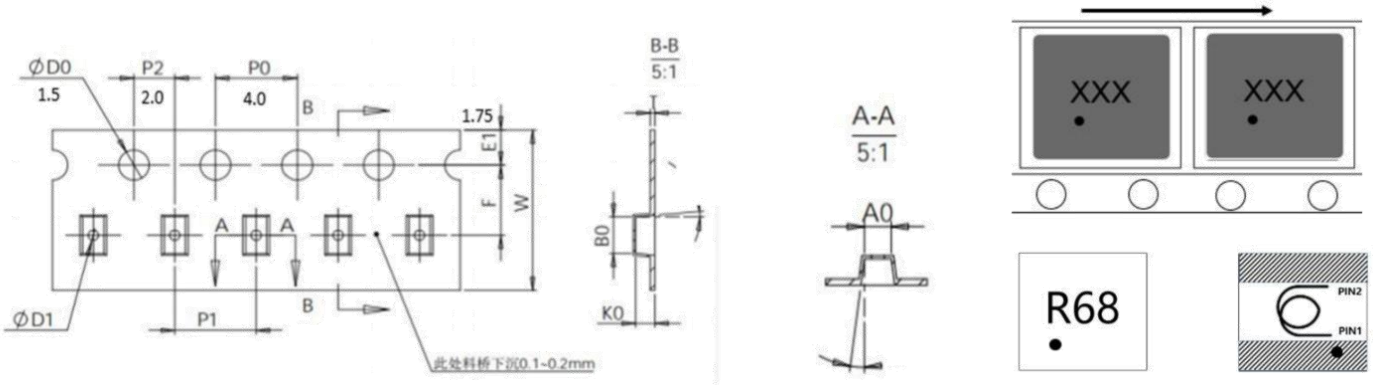
Profile Feature	Lead (Pb)-Free solder
Preheat： Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (T_{smin} to T_{smax}) (ts)	 150℃ 200℃ 60 - 120 seconds
Average ramp-up rate： (Ts max to Tp)	 3℃ / second max.
Time maintained above ： Temperature (T_L) Time (t_L)	 217℃ 60- 150 seconds
Peak Temperature (Tp)	260℃
Time within $^{+0}_{-5}$℃ of actual peak Temperature (tp)[2]	10 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8minutes max.

Allowed Re-flow times ：2 times
Remark ：To avoid discoloration phenomena of chip on terminal electrodes, please use N2 Re-flow furnace .

●Packing

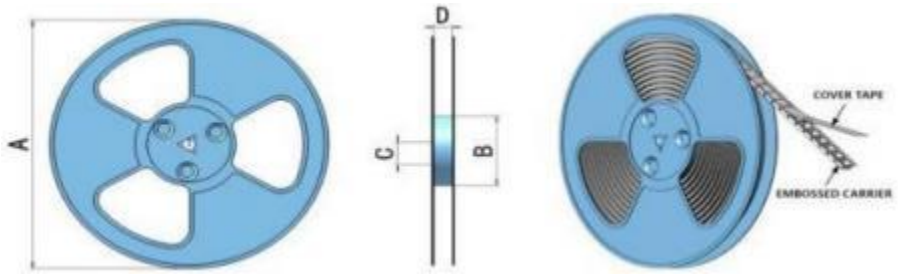
● Dimension of plastic taping: (Unit: mm)

The following dimensions are related to the actual fit of the machine， for reference only.



Series/mm	W	A0	B0	D1	F	K0	P1	T
公差	/	/	/	±0.20	±0.10	/	±0.10	±0.05
505020	12.0±0.30	5.20±0.10	5.40±0.10	1.5	5.5	2.25±0.10	8.0	0.35

● Dimension of Reel ：(Unit: mm)



Series/mm	A	B	C	D	QTY/Reel
公差	±2.0	±1.0	±1.0	±1.0	/
505020	330	100	13.5	12.5	2000pcs

● Note

1、Huacui recommend products store in warehouse with temperature between 15 to 35℃ under humidity between 25 to 75%RH. Even under storage conditions recommended above, solder ability ofproducts will be degraded stored over1 year old.

2、Cartons must be placed in correct direction which indicated on carton, otherwise the reel or wire will be deformed.

3、Storage conditions as below are inappropriate:

a. Stored in high electrostatic environment

b. Stored in direct sunshine, rain, snow or condensation.

c. Exposed to sea wind or corrosive gases, such as Cl2, H2S, NH3, SO2, NO2, etc.

4、The products are used in circuit board thickness greater than 1.6mm. If customers use less than the thickness of the circuit board that you should confirm with the company, in order to recommend a more suitable product.