

规格确认书

SPECIFICATION

客 户

CUSTOMER:

客 户 料 号

CUSTOMER P/N:

物 料 名 称

MODEL NO :

料 号

P/N :

文 件 编 号

FILE NO :

小尺寸模压片式功率电感

Mini Molded Chip Power Inductors

RMIC 系列

RMIC series

23-07

日期 : 2023-07-06

DATE : July 06, 2023

承办人 : 刘俊

ISSUEDER : Liu Jun

客户确认 APPROVED BY

签名 :

SIGN :

日期 :

DATE :

结论 RESULT :

确认后请回传 PLEASE RETURN BY ONE COPY

●特征

通过材料特性和结构设计实现高饱和电流。

低直流电阻，实现高转换效率和较低的温升。

磁屏蔽结构，实现 EMC 保护的高分辨率。

无卤素、无铅、符合 RoHS 标准。

工作温度范围-40℃至+125℃

●用途

RMIC 系列通用于便携式 DC-DC 转换线。

智能手机、PAD。

DC/DC 转换器。

薄型电源模块。

●FEATURES

High saturation current realized by material properties and structure design.

Low DC resistance to achieve high conversion efficiency and lower temperature rising.

Magnetically shielded structure to accomplish high resolution in EMC protection.

Halogen free,Lead Free,RoHS Compliance.

Operating temperature range -40℃ to +125℃

●Applications

RMIC series is generic applied in portable DC to DC converter line.

Smart phone,PAD.

DC/DC converter.

Thin-type power supply module.

●品名系统

RMIC 252012 P - 4R7 M L
① ② ③ ④ ⑤ ⑥

① 产品代号: 小尺寸模压片式功率电感。

② 尺寸规格: 201610=2.0x1.6x1.0(mm)
252010=2.5x2.0x1.0(mm)
252012=2.5x2.0x1.2(mm)

③ 材质: P=铁粉 S=合金

④ 电感量标称值: 4R7=4.7μH

⑤ 电感量公差: M=±20% N=±30%

⑥ 电极类型。

●Product Identification

RMIC 252012 P - 4R7 M L
① ② ③ ④ ⑤ ⑥

① Product symbol : Mini Molded Power Inductor

② Dimension: 201610=2.0x1.6x1.0(mm)
252010=2.5x2.0x1.0(mm)
252012=2.5x2.0x1.2(mm)

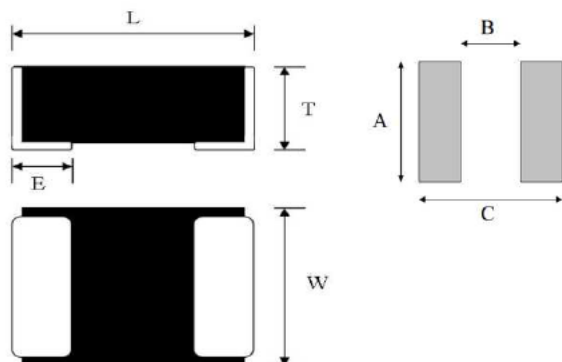
③ Material: P=Iron powder S=Alloy powder

④ Inductance: 4R7=4.7μH

⑤ Tolerance: M=±20% N=±30%

⑥ Electrode type.

●结构及尺寸



●Structure And Dimensions

Unit: mm

L	W	T	E
2.5±0.2	2.0±0.2	1.0 max.	0.6±0.3

A	B	C
2	1.2	2.8

●规格

Specifications

RMIC252012P系列 (TYPE)

Part Number	Initial inductance	DC Resistance		Saturation Current ³		Heat Rating Current ⁴	
	1MHz,1mA	Typ.	Max.	Typ.	Max.	Typ.	Max.
Units	μH	mΩ		A		A	
Symbol	L	DCR		Isat		Irms	
RMIC252012P-R47ML	0.47	21	25	5.3	4.95	4.6	4.18
RMIC252012P-R68ML	0.68	29	35	5	4.63	3.7	3.36
RMIC252012P-1R0ML	1	41	49	4.4	4.04	3.5	3.18
RMIC252012P-1R5ML	1.5	64	77	3.2	2.91	2.5	2.27
RMIC252012P-2R2ML	2.2	85	98	3	2.73	2.27	2.06
RMIC252012P-4R7ML	4.7	196	235	1.9	1.58	1.55	1.4

Note 1:Customized design is available,please contact us.

Note 2:All test referenced to 26C ambient

Note 3:Inductance tolerance +/-20%

Note 4:Inductance is measured with Agilent LCR meter 4285A.Test frequency at 1MHz.

Note 5:DC resistance is measured with HIOKI micro-ohm meter RM3542-01.

Note 6:Isat means that DC current will cause a 30%inductance reduction form initial value.

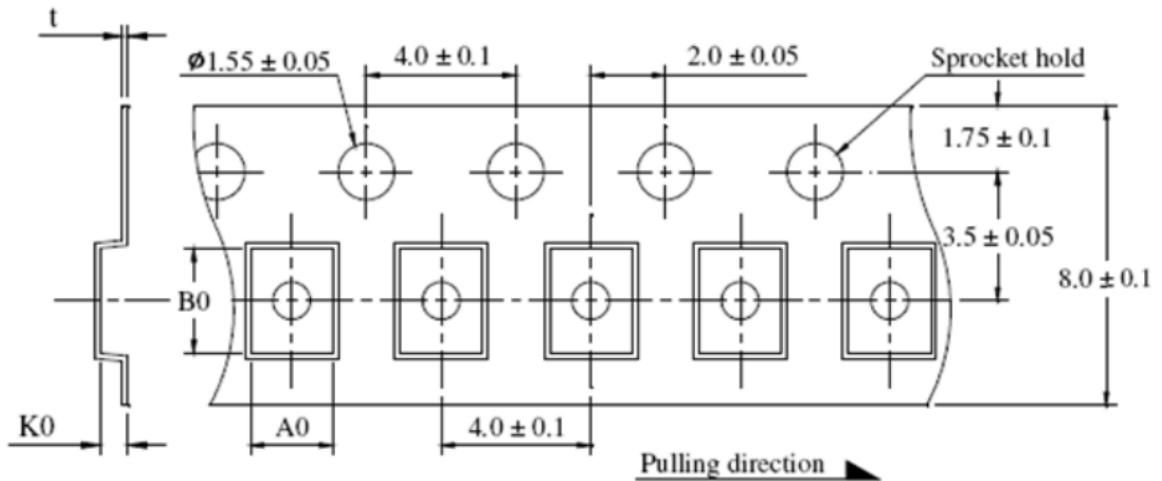
Note 7:Irms means that DC current will cause coil temp.rising to 40C whichever is smaller.

● Reliability and Test Condition

Test item	Test condition	Criteria
Resistance to Solder Heat	1. Solder temperature : $260 \pm 5^{\circ}\text{C}$ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Inductance value should be within ± 20 % of the initial value
Adhesive Test	1. Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate 2. Apply force(F) : 5 N 3. Test time : 10 sec	1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N
Temperature Cycle	1. Temperature: $-50 \sim 125^{\circ}\text{C}$ For 30 minutes each 2. Cycle: 500 cycles 3. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value
Dry Heat Test	1. Temperature: $85 \pm 2^{\circ}\text{C}$ 2. Testing time: 500 hrs 3. Applied current: Full rated current 4. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value
Humidity Test	1. Temperature: $60 \pm 2^{\circ}\text{C}$ 2. Humidity: 90-95 % RH 3. Applied current: Full rated current 4. Testing time: 500 hrs 5. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value

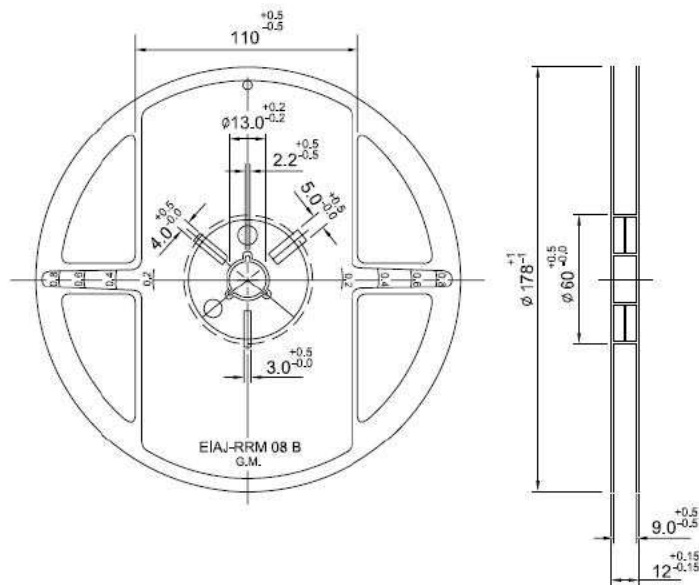
● Taping Package and Label Marking

1. Carrier tape dimensions



	A0	B0	K0	t
mm	2.25 ± 0.05	2.80 ± 0.1	1.35 ± 0.1	0.22 ± 0.05

2. Taping reel dimensions



PART SIZE (EIA SIZE)	2520 (1008)
Qty.(pcs)	3,000
BOX	5 reels / inner box

3. Taping specifications

There shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the head of taping.

4. Label Marking

The label specified as follows shall be put on the side of reel.

(1) Part No.

(2) Quantity

(3) Lot No.

* Part No. And Quantity shall be marked on outer packaging.

5. Quantity of products in the taping package

(1) Standard quantity : 3000pcs/Reel

(2) Shipping quantity is a multiple of standard quantity.

● Precautions for Handling

1. Precaution for handling of substrate

Do not exceed to bend the board after soldering this product extremely.
(reference examples)

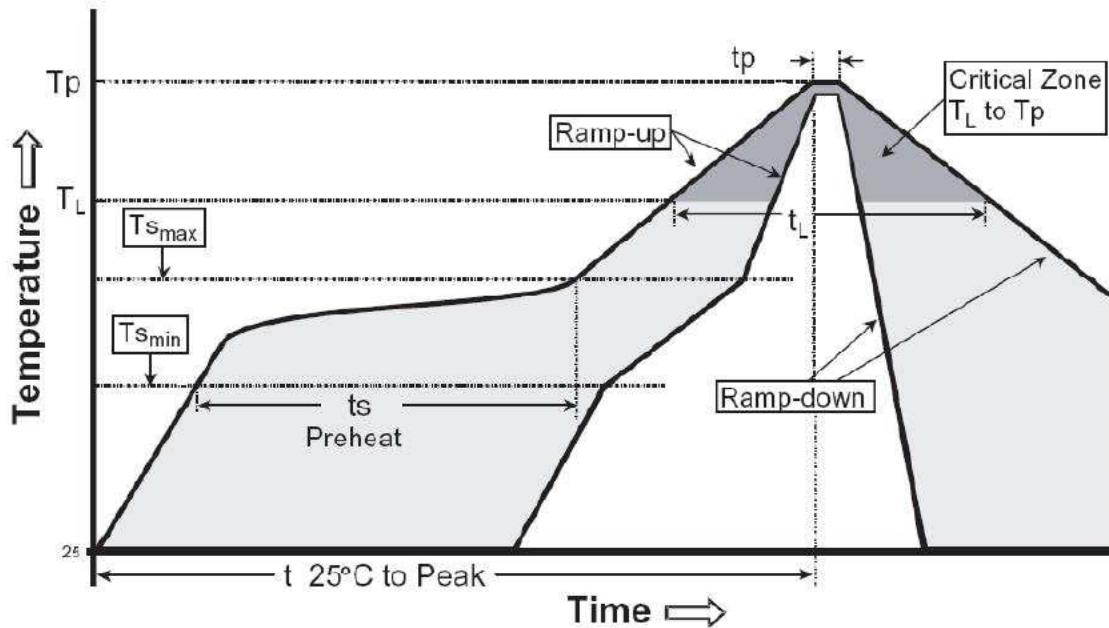
- Mounting place must be as far as possible from the position, which is close to the break line of board, or on the line of large holes of board.
- Do not bend extremely the board, in mounting another components.
If necessary, use back-up pin (support pin) to prevent from bending extremely.
- Do not break the board by hand. We recommend to use the machine or the jig to break it.

2. Precaution for soldering

Note that this product will be easily damaged by rapid heating, rapid cooling or local heating.

Do not give heat shock over 100°C in the process of soldering. We recommend to take preheating and gradual cooling.

3. Recommendable reflow soldering



Reference IPC-020c-5-1

Profile Feature	Pb free Assembly
Average Ramp Rate (T_s max to T_p)	3 °C/second max
Preheat - Temperature Min (T_{smin}) - Temperature Min (T_{smax}) - Time(t_{smin} to t_{smin})	150°C 200°C 60-180 seconds
Time maintained above: - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_p)	260°C +0/-5 °C
Time within 5 °C of actual Peak Temperature (T_p)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25°C to Peak Temperature	8 minutes max

4. Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

- (1) The tip temperature must be less than 280°C for the period within 3 seconds by using soldering gun under 30 W.
- (2) The soldering gun tip shall not touch this product directly.

5. Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

6. Taping Package Storage Condition

Storage Temperature : 5 to 40 °C

Relative Humidity: < 65%RH

Storage Time : 12 months max