产品承认书
SPECIFICATION FOR APPROVAL

客户名称:
CUSTOMER

我司料号:
OUR PART NO. XRIM201610SR33MBCA

我司品名:
OUR PART NAME Miniaturized integrated inductor

送样日期:
DATE SAMPLES

数 量:
QUANTITY 0PCS

制造确认 MANUFACTURER APPROVE		
拟制 DRAWN	审核 CHECKED	确认 APPROVED
HuFangting	Rao ping	Li Zhengxiong

客户确认 CUSTOMER APPROVE

客户名称 CUSTOMER NAME:

客户料号 CUSTOMER P/N:

规格型号 DESCRIPTION: **measure 201610 Inductance：0.33uH**

检查結果： ☐ 合格 ☐不合格 签名及盖章:

INSPECT RESULT ACCEPT REJECT SIGNATURE AND STAMP

说明 REMARK:

如对本承认书内容有异议请提出或标记发送至我司，本承认书在未收到异议回复时于本承认书提供一周后生效。

If you have any objection to the contents of this acknowledgement, please put forward or mark it and send it to our company. This acknowledgement will take effect one week after it is provided if you do not receive an objection reply.

东莞市祥如电子有限公司

Dongguan xiangru electronics co.，ltd

Tel：**0769-86346548** Fax：**0769-86346358**

email：**dgxiangru@126.com**

1. Scope

Featurs

1.1 Metal material for large current and low loss.
1.2 High performance (Isat) realized by metal dust core.
1.3 Low loss realized with low Rdc.
1.4 Closed magnetic circuit design reduces leakage flux.
1.5 Vinyl thermal spray, better surface compactness.
1.6 Environmental requirements must comply with the QESP-44 document
1.7 100% lead (Pb) free meet RoHS2.0 and Halogen， Reach and other legal and regulatory requirements standard.

Application

2.1 DC/DC converters.
2.2 Pad,Smart phone.
2.3 Portable gaming devices, Smart wear, Wi-Fi module.
2.4 Notebooks, VR, AR.
2.5 LCD displays, HDDs, DVCs, DSCs, etc.
2.6 Baseband power supply, Amplifier, Power management, Module power supply, Camera power manageme.

2. Ordering Procedure

XRIM	2016	10	S	R33	M	B	C	A
①	②	③	④	⑤	⑥	⑦	⑧	⑨

①Series Name: Mini Molding Power Inductors

②External Dimensions(L×W):2016=2.0*1.6 mm

③External Dimensions(H):10=1.0mm

④Size Tolerance:S=±0.2mm

⑤Inductance value:R33=0.33uH

⑥Tolerance: M=±20%

⑦Coating color:B=Black

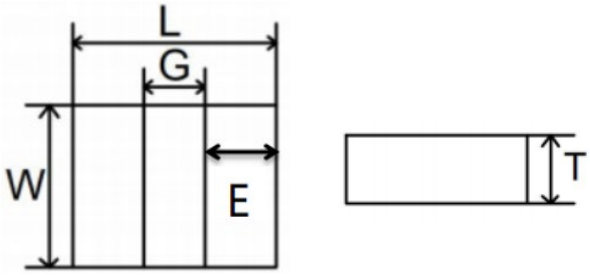
⑧Product type:C=Common

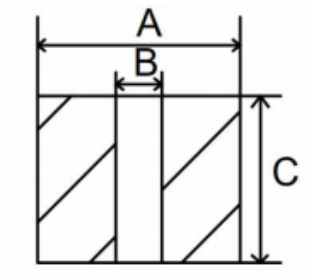
⑨Special define:A=Routine

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

3. SHAPE AND DIMENSIONS

Outline Dimensions **Recommend Land Pattern Dimensions**





Units:mm

Series	L	G	W	E	T	A	B	C
XRIM201610S	2.0±0.2	0.6±0.2	1.6±0.2	0.70±0.2	1.00Max.	2.10	0.50	1.70

4. Marking

No Marking

5. Specifications

P/N	L0(μH) @(0A) 1MHz	Rdc(mΩ)		Heat rating current Irms(A)		Saturation current Isat(A)	
		Typical	Max	Typical	Max	Typical	Max
XRIM201610SR33MBCA	0.33	17	22	5.7	5.3	7.0	6.5

Test remarks

Note 1.: All test data is referenced to 25 ℃ ambient.

Note 2.: Test Condition:1MHz, 1.0Vrms.

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

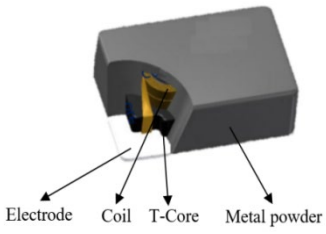
Note 4.: Isat:DC current (A) that will cause L0 to drop approximately 30%.

Note 5.: Operating Temperature Range -55℃ to + 125℃.

Note 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.

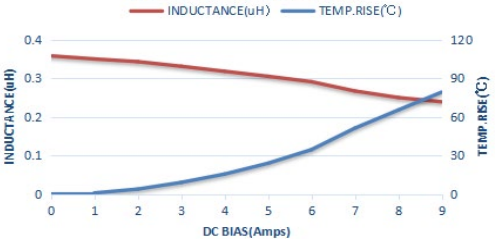
Note 7.: The rated current as listed is either the saturation current or the heating current depending on which value is lower.

6. Structure



7. Current Characteristic

XRIM201610SR33MBCA



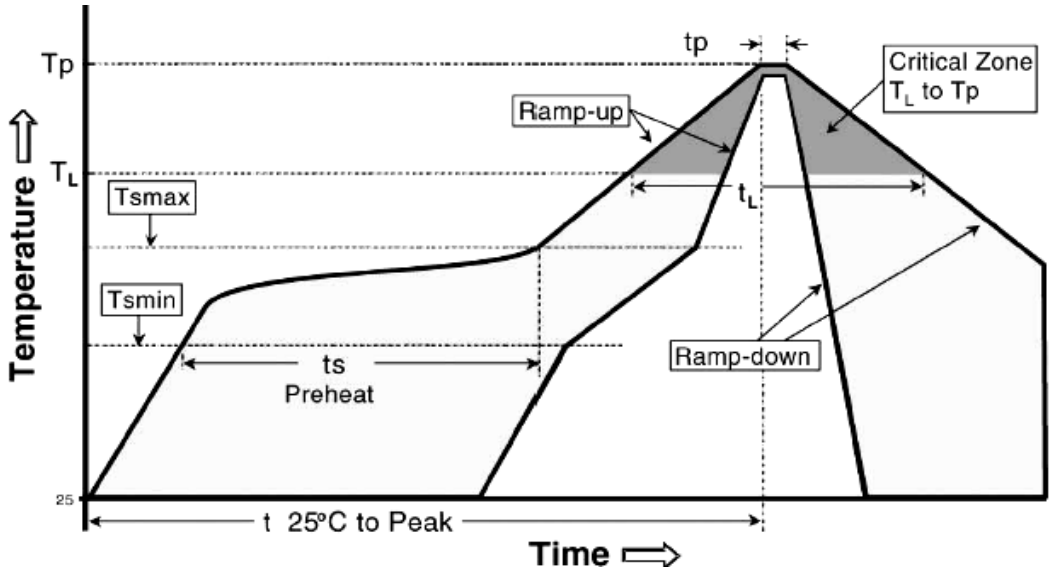
8. Reliability

Item	Requirements	Test Methods and Remarks
Insulation Resistance	≥100MΩ	100 VDC between inductor coil and The middle of the top surface of the body for 60 seconds.
Solderability	90% or more of electrode area shall be coated by new solde.	Dip pads in flux . Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free). Solder Temperature: 245±5℃. Immersion Time: (5±1) s.
Resistance to Soldering Heat	No visible mechanical damage. Inductance change: Within ±10%.	Dip pads in flux. Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free). Solder Temperature: 260±5℃. Immersion Time: 10±1sec.
Adhesion of teral electrode	Strong bond between the pad and the core, without come off PCB.	Inductors shall be subjected to (260±5)℃ for (20±5)s Soldering in the base whit 0.3mm solder. And then aplombelectrode way plus tax 12 N for (10±1) seconds.
High temperature	No case deformation or change in appearance. Inductance change: Within ±10%	Temperature: 125±2℃. Time : 1000 hours. Measurement at 24±4 hours after test conclusion.
Low temperature	No visible mechanical damage. Inductance change: Within ±10%	Temperature: -55±2℃. Time : 1000 hours. Measurement at 24±4 hours after test conclusion.
Thermal shock	No visible mechanical damage. Inductance change: Within ±10%	The test sample shall be placed at (-55±3)℃ and (125±3)℃ for (30±3) , different temperature conversion time is 2~3 utes. The temperature cycle shall be repeated 32 cycles. Placed at room temperature for 2 hours, within 48±4 hours of testing.
Temperature characteristic	Inductance change Pc-b,Pc-d: Within ±10%	a：+20 ℃ （30~45） → b: -40 ℃ （30~45） → c: +20 ℃ （30~45） → d: +125 ℃ （30~45） → e: +20 ℃ （30~45） $P_{c\text{-}b}=\frac{L_b-L_c}{L_c}\times 100\%$; $P_{c\text{-}d}=\frac{L_d-L_c}{L_c}\times 100\%$
Static Humidity	No visible mechanical damage. Inductance change: Within ±10%	Inductors shall be subjected to (95±3)%RH . at(60±2)℃ for (1000±4) h. Placed at room temperature for 2 hours, within 48 hours of testing.
Life	No visible mechanical damage. Inductance change: Within ±10%	Inductors shall be store at (85±2)℃ for (1000±4) hours with Irms applied. Placed at room temperature for 2 hours, within 48 hours of testing

9. 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 (Ts_{min}) Temperature Max (Ts_{max}) Time (Ts_{min} to Ts_{max}) (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.

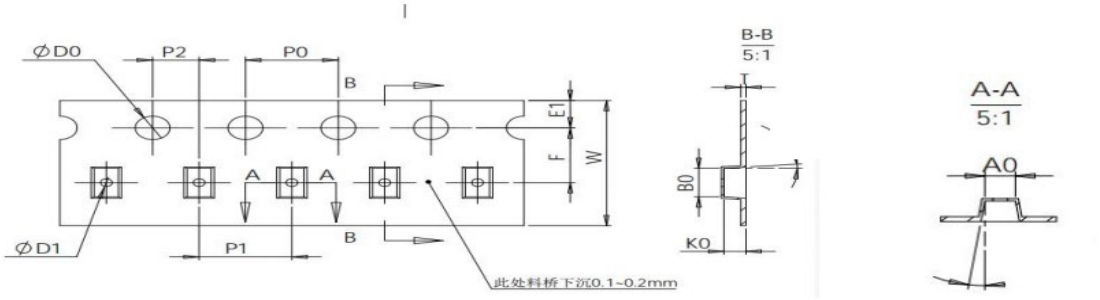
Allowed Re-flow times : 2 times

Remark : To avoid discoloration phenomena of chip on terminal electrodes, please use N_2 Re-flow furnace .

10. Packing

10.1 Dimension of plastic taping: (Unit: mm)

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

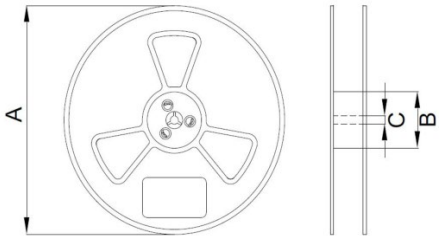


Series	W	A0	B0	D0	D1	E
Tolerance	/	/	/	+0.1/-0	±0.20	±0.10
201610	8.0±0.10	1.95±0.10	2.35±0.10	1.5	1.0	1.75

Series	F	K0	P0	P2	P1	T	Number of packages
Tolerance	±0.10	/	±0.10	±0.10	±0.10	±0.05	
201610	3.5	1.15±0.10	4.0	2.0	4.0	0.25	3K

10.2 Dimension of Reel：(Unit: mm)

Type	A ±2.0	B ±2.0	C ±2.0
All	178	60	13



11. Note

11.1 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 of products will be degraded stored over 1 year old.

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

11.3 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 Cl_2, H_2S, NH_3, SO_2, NO_2, etc.

11.4 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.

12. Record

Version	Description	Page	Date	Amended by	Checked by
A0					

A0	First version	1~5	Nov.4.2023	Haiyang.Tang	Congdian.Lu