TO：	文 件 编 号	HXA-L13-02(01)
	发 行 日 期	2015 年 12 月 12 日

承 认 规 格 书

种　　类：功　率　电　感

系 列 号：HXB1311N-Series

客户料号：

客 户 承 认 栏	
承 认 日 期	年　　月　　日

（贵司承认后请签署一份返回华信安电子，谢谢！）

厦门华信安电子科技有限公司技术质量部

承　认	确　认	作　成
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Http：www.xmisnd.com

Power Inductor

HXB1311N-SERIES

ECN HISTORY LIST

REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
1.0	15/12/12	新 發 行	龙梅	梁峰	王亮
備 註					

Power Inductor

HXB1311N-SERIES

1. Features

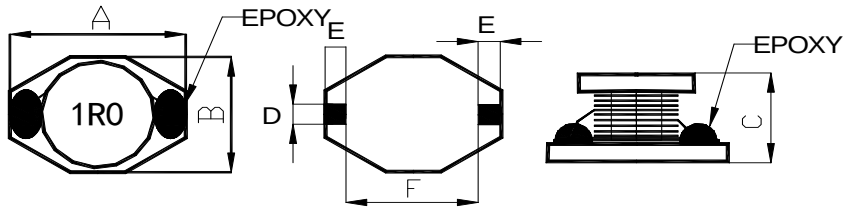
1. This specification applies Low Profile Power Inductors.
2. 100% Lead(Pb) & Halogen-Free and RoHS compliant.

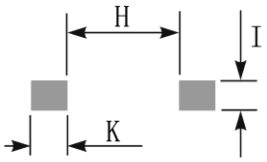
Halogen-free

Pb-free

2. Dimension

Recommendend Land pattern





Series	A(mm)	B(mm)	C(mm)	D(mm	E(mm)	F(mm)
HXB1311N	13.5MAX	9.5MAX	11.43MAX	2.54	2.54	7.62

H(mm)	I(mm)	K(mm)
7.3	2.8	2.9

3. Part Numbering

HXB	1311	N	-	1R0	M
A	B	C		D	E

A: Series
B: Dimension
C: Control S/N
D: Inductance 1R0=1.0uH
E: Inductance Tolerance M=±20%

4. Specification

ISND Part Number	Inductance (uH)	Tolerance (%)	Test Frequency (Hz)	DCR (Ω) Max	I sat (A)	I rms (A)
HXB1311N-2R2M	2.2	±20%	0.25V100K	0.015	12	7.8
HXB1311N-3R3M	3.3	±20%	0.25V100K	0.018	11	7.2
HXB1311N-4R7M	4.7	±20%	0.25V100K	0.020	10	6.15
HXB1311N-6R8M	6.8	±20%	0.25V100K	0.028	9.5	4.4
HXB1311N-100M	10	±20%	0.25V100K	0.040	8.0	5.3
HXB1311N-150M	15	±20%	0.25V100K	0.050	7.0	4.5
HXB1311N-220M	22	±20%	0.25V100K	0.072	5.5	3.5
HXB1311N-330M	33	±20%	0.25V100K	0.085	4.0	2.9
HXB1311N-470M	47	±20%	0.25V100K	0.120	3.8	2.5
HXB1311N-680M	68	±20%	0.25V100K	0.180	3.0	2.3
HXB1311N-101M	100	±20%	0.25V100K	0.235	2.5	1.9
HXB1311N-151M	150	±20%	0.25V100K	0.350	2.0	1.5
HXB1311N-221M	220	±20%	0.25V100K	0.450	1.6	1.4
HXB1311N-331M	330	±20%	0.25V100K	0.730	1.2	1.0
HXB1311N-471M	470	±20%	0.25V100K	0.980	1.0	0.8

Note:

Isat : Based on inductance change (ΔL/L0 : ≦-20%) @ ambient temp. 25℃

Irms : Based on temperature rise (ΔT : 40℃ typ.)

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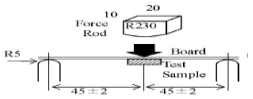
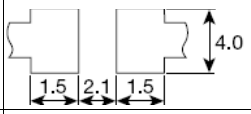
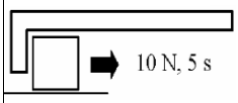
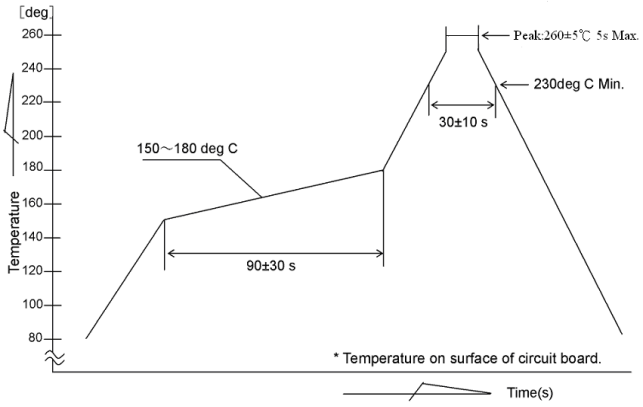
5. Reliability and Test Condition

Item	Performance	Test Method and Remarks
Operating Temperature	- 40 ~ +125℃.	Including self-generated heat
Storage Temperature	-40 ~ +85℃. - 5 to 40℃ for the product with taping.	
Rated current	Within the specified tolerance	
Inductance (L)		LCR Meter: HP 4285A or equivalent, 100kHz, 0.25V
DC Resistance		DC Ohmmeter: HIOKI3227 or equivalent
Temperature characteristics	Inductance change：Within±20%	Measurement of inductance shall be taken at temperature rang within–40℃ to +85℃. With reference to inductance value at+20 ℃,change rate shall be calculated. Measurement of inductance shall be taken at temperature rang within–40℃ to +125℃. With reference to inductance value at+20 ℃,change rate shall be calculated.
Resistance to flexure substrate	No damage.	The test samples shall be soldered to the testing board by the reflow. As illustrated below, apply force in the direction of the arrow indicating until deflection of the test board reaches to 2mm.  Substrate size：100x40x1.0 Substrate material：glass epoxy-resin Solder cream thickness：0.15 
Adhesion of Terminal electrode	Shall not come off PC board.	The test samples shall be soldered to the testing board and by the reflow.  Applied force：10 N to X and Y directions. Duration：5s Solder cream thickness：0.15
Resistance to Vibration	Inductance change：Within±10% No abnormality observed in appearance.	The test samples shall be soldered to the test board by the reflow. Then it shall be submitted to below test conditions. Frequency: 10-55Hz Total Amplitude: 1.5mm (May not exceed acceleration 196m/S2) Sweeping Method:10Hz to 55Hz to 10Hz for 1min. Time：2 hours each in X,Y, and Z Direction. Recovery: At least 2hrs of recovery under the standard condition after the test, followed by the measurement within 48hrs.
Solderability	At least 90% of surface of terminal electrode is covered by new solder.	The test samples shall be dipped in flux, and then immersed in molten solder as shown in below. Flux：methanol solution containing rosin 25% Solder temperature: 245±5℃ Time: 5±1.0 sec. Immersion depth: All sides of mounting terminal shall be immersed.

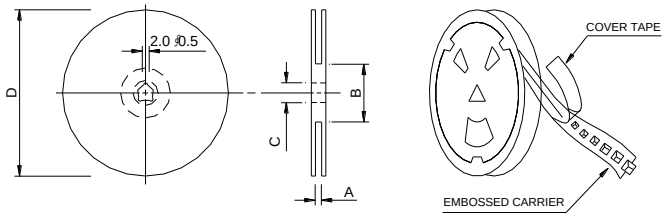
<table>
<tr><th>Item</th><th>Performance</th><th>Test Method and Remarks</th></tr>
<tr><td>Resistance to soldering</td><td rowspan="6">Inductance change : Within±10%
No abnormality observed in appearance.</td><td>The test sample shall be exposed to reflow oven at 230±5℃ for 40 seconds, with peak temperature at 260±5℃ for 5 seconds,2 times.
Test board thickness: 1.0mm
Test board material: glass epoxy-resin</td></tr>
<tr><td>Thermal shock</td><td>The test samples shall be soldered to the test board by the reflow.
The test samples shall be placed at specified temperature for specified time by step 1 to step 4 as shown below in sequence.
The temperature cycles shall be repeated 100 cycles .
<table>
<tr><th>Phase</th><th>Temperature(℃)</th><th>Time(min.)</th></tr>
<tr><td>1</td><td>-40±3℃</td><td>30±3</td></tr>
<tr><td>2</td><td>Room Temp</td><td>Within 3</td></tr>
<tr><td>3</td><td>85±2℃</td><td>30±3</td></tr>
<tr><td>4</td><td>Room Temp</td><td>Within 3</td></tr>
</table></td></tr>
<tr><td>Damp heat life test</td><td>Test Method and Remarks The test samples shall be soldered to the test board by the reflow.
The test samples shall be placed in thermostatic oven set at specified temperature and humidity as shown in below.
Temperature: 60±2℃
Humidity: 90~95%RH
Time: 500+24/-0 hrs</td></tr>
<tr><td>Loading under damp heat life test</td><td>The test samples shall be soldered to the test board by the reflow.
The test samples shall be placed in thermostatic oven set at specified temperature and humidity and applied the rated current continuously as shown in below.
Temperature: 60±2℃
Humidity: 90~95%RH
Applied current: Rated current
Time: 500+24/-0 hrs</td></tr>
<tr><td>Low temperature life test</td><td>The test samples shall be soldered to the test board by the reflow.
After that, the test samples shall be placed at test conditions as shown in below.
Temperature:-40±2℃
Time:500+24/-0 hrs</td></tr>
<tr><td>Loading at high temperature life test</td><td>The test samples shall be soldered to the test board by the reflow.
Temperature: 85±2℃.
Applied current: Rated current
Time: 500+24/-0 hrs.</td></tr>
</table>

6. Soldering



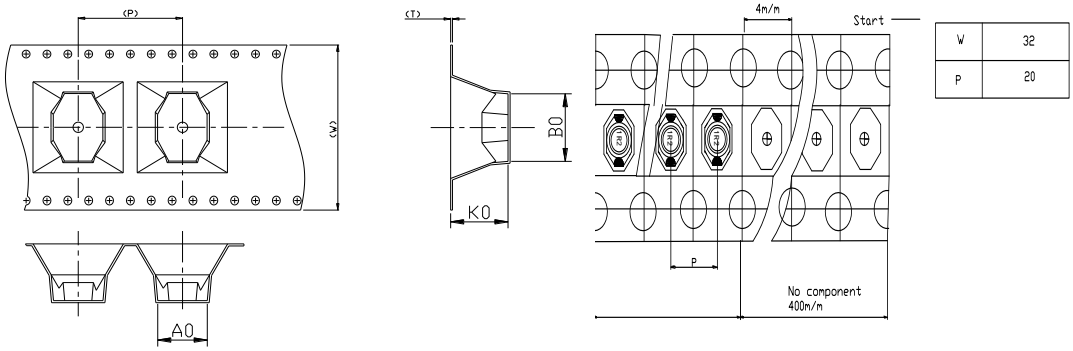
7. Packaging Information

(1) Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
HXB1311N	32.4±0.2	100±4.0	13.2±0.2	330±2.0

(2) Tape Dimension



Type	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	W(mm)	t(mm)
HXB1311N	9.6±0.1	13.3±0.1	11.6±0.1	20.0±0.1	32±0.3	0.5±0.05

(3) Packaging Quantity

Type	Chip / Reel
HXB1311N	250

Application Notice

·Storage Conditions

To maintain the solderability of terminal electrodes:

1. ISND products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
3. Recommended products should be used within 12 months form the time of delivery.
4. The packaging material should be kept where no chlorine or sulfur exists in the air.

·Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.