



XiangHua ELECTRONICS CORP.

Total solution partner for EMI,Power and RF

SPECIFICATION FOR APPROVAL

Customer :

Supplier : 沅陵县向华电子科技有限公司

Productors : Mini Molding Power Inductors

Customer P/N :

Xianghua P/N : HBE160808A-4R7M

Issued Date : 2024/3/1

Customer Response

Approved By:	Signature:	Date:

Xianghua Signature

Prepared By	Checked By	Approved By
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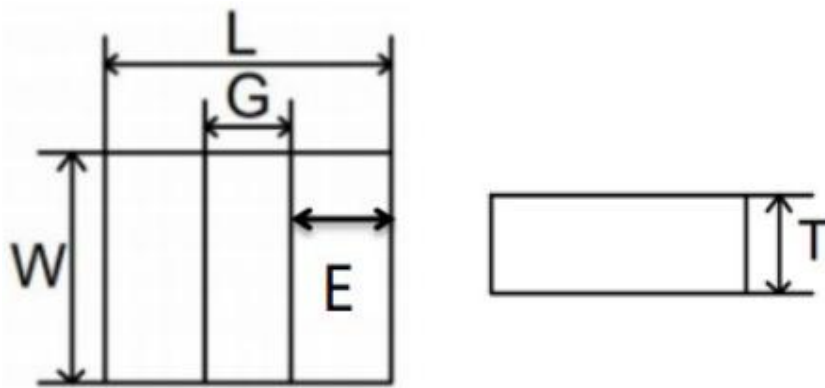




SPECIFICATION FOR APPROVAL

Customer : _____ Date : **2024/3/1**
 Customer P/N: _____ Rev No. : **A**
 Xianghua P/N: **HBE160808A-4R7M**

1.MECHANICAL & DIMENSIONS



(UNIT: mm)	
L	1.6±0.2
G	0.6±0.2
W	0.8±0.2
E	0.50±0.2
T	0.80max

REMARK
No Marking

2.ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L	4.7±20% μH	1MHz/1V	4287A
RDC	800max(700typ) mΩ	25±5°C	TH2512A
Isat	0.4max(0.5typ) Amps	L drop 30%	6375+6220
Irms	0.3max(0.4typ) Amps	ΔT≤40°C	

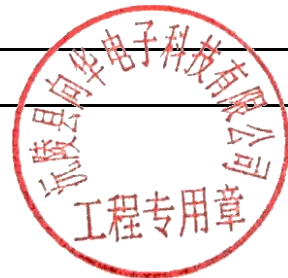
3.TEMPERATURE RATING:

Operating	-55°C ~ +125°C (Including self-temperature rise)
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4.PRODUCT IDENTIFICATION:

HBE 160808 A - 4R7 M
A B C D E

A: Product Series. D: Inductance
 B: Series number, part size E: Inductance Tolerance. (K±10% M±20% T±30%)
 C: Alloy



PREPARED BY	CHECKED BY	APPROVED BY
<i>mei.li</i>		<i>fie.ma</i>

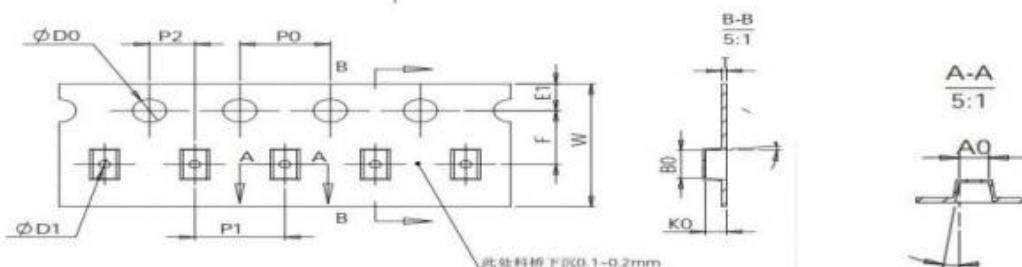


PACKAGING

Packing

Dimension of plastic taping: (Unit: mm)

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

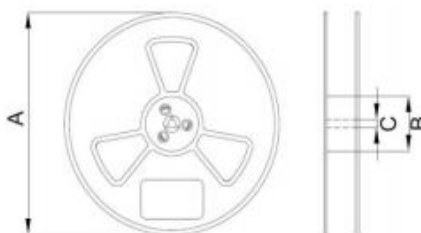


Series	W	A0	B0	D0	D1	E
公差	/	/	/	+0.1/-0	±0.20	±0.10
160808	8.0±0.10	1.04±0.05	1.82±0.05	1.5	0.6	1.75

Series	F	K0	P0	P2	P1	T	包装数量
公差	±0.10	/	±0.10	±0.10	±0.10	±0.05	
160808	3.5	0.95±0.05	4.0	2.0	4.0	0.22	3K

Dimension of Reel : (Unit: mm)

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



Packaging Quantity

P/N	Chip/Reel	Inner Box	Outer Box
HBE160808A-4R7M	3000	---	---

※Storage Conditions

1. Temperature and humidity conditions: -10-+40°C and 70% RH.
2. Recommended products should be used within 12 months from the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.





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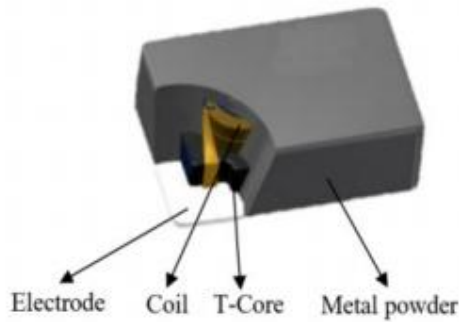
Date : 2024/3/1

Customer P/N :

Rev No. : A

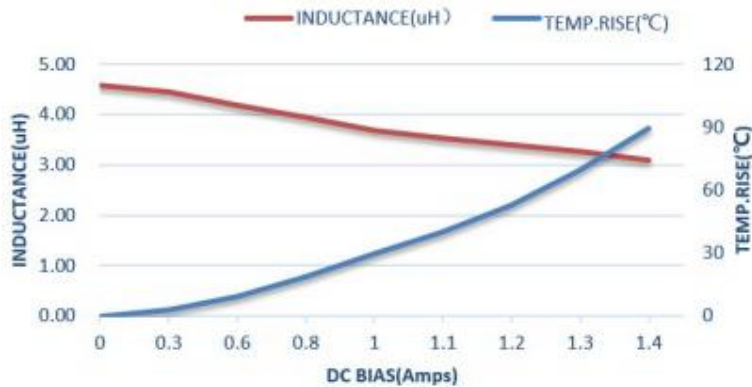
Xianghua P/N : HBE160808A-4R7M

Structure



Current Characteristic

HBE160808A-4R7M

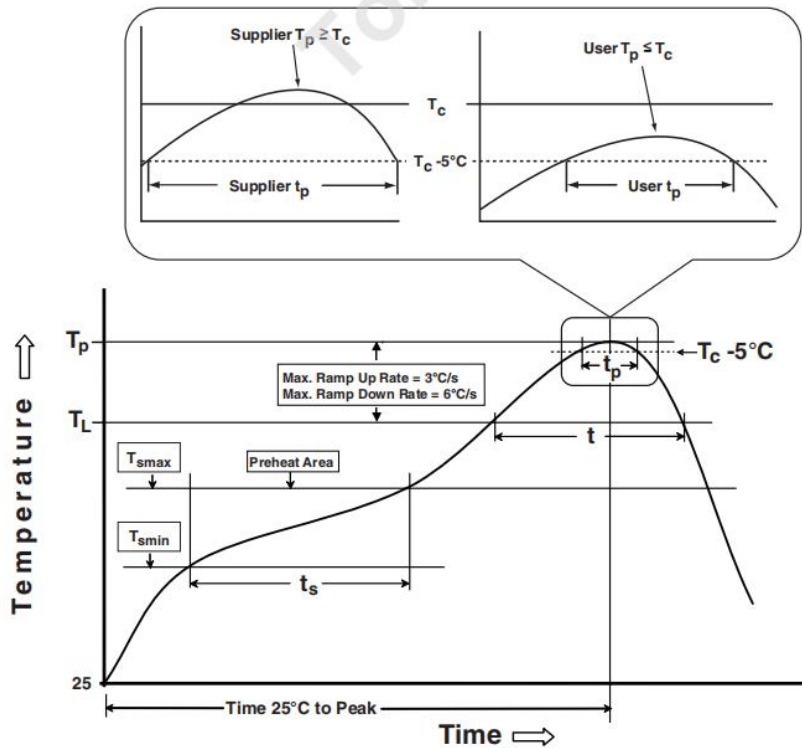




Recommended Soldering Conditions

For Lead-Free Application

Figure . Re-flow Soldering



IPC-020e-5-1

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak		
Temperature Min (T_{smin})	100 °C	150 °C
Temperature Max (T_{smax})	150 °C	200 °C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds	60-120 seconds
Ramp-up rate (T_L to T_p)	3 °C/second max.	3 °C/second max.
Liquidous temperature (T_L)	183 °C	217 °C
Time (t_L) maintained above T_L	60-150 seconds	60-150 seconds
Peak package body temperature (T_p)	For users T_p must not exceed the Classification temp in Table 4-1. For suppliers T_p must equal or exceed the Classification temp in Table 4-1.	For users T_p must not exceed the Classification temp in Table 4-2. For suppliers T_p must equal or exceed the Classification temp in Table 4-2.
Time (t_p)* within 5 °C of the specified classification temperature (T_c), see Figure 5-1.	20* seconds	30* seconds
Ramp-down rate (T_p to T_L)	6 °C/second max.	6 °C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

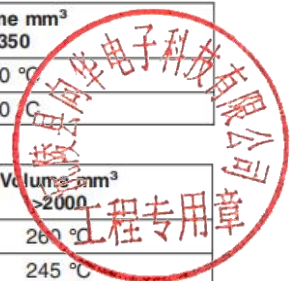
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Table 4-1 SnPb Eutectic Process – Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 4-2 Pb-Free Process – Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350 - 2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

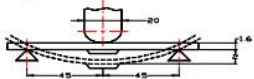
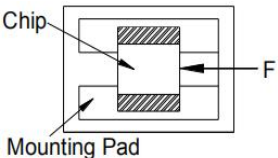




HBE Series Specification

Reliability Of Wire Wound Power Inductors

1-1. Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the metal body	Test device shall be soldered on the substrate, Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec 
1-1-2	Vibration	Appearance: No damage(for microscope of CASTOR MZ-45 20X) Inductance change shall be within $\pm 20\%$	Test device shall be soldered on the substrate, Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-3	Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal electrode should be covered with solder, inductance: within $\pm 20\%$ of initial value	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5 Solder Temperature: 260 ± 5 °C Immersion Time: 30 ± 1 sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 ± 3 °C Immersion Time: 4 ± 1 sec
1-1-5	Terminal Strength Test	No split termination 	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow, Force: 5N Keeping Time: 10 ± 1 sec

1-2. Environmental Performance

No	Item	Specification	Test Method		
1-2-1	Temperature Cycle	Appearance: No damage Inductance: within $\pm 10\%$ of initial value	One cycle:		
			Step	Temperature (°C)	Time (min)
			1	-40 ± 3	30
			2	25 ± 2	3
			3	125 ± 3	30
4	25 ± 2	3			
			Total: 100cycles Measured after exposure in the room condition for 24hrs		
1-2-2	Humidity Resistance		1000 hours 85°C/85%RH. Unpowered. Measurement at 24 ± 4 hours after test conclusion.		
1-2-3	High Temperature Resistance		Temperature: 85 ± 3 °C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 24hrs		
1-2-4	Low Temperature Resistance		Temperature: -40 ± 3 °C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 24hrs		

