

Specification for Approval

Date: 2021/08/16

Customer : 天诚科技

TAI-TECH P/N: CPI201210UF -4R7M-0A8

CUSTOMER P/N:

DESCRIPTION:

QUANTITY:

REMARK:	
Customer Approval Feedback	

西北臺慶科技股份有限公司
TAI-TECH Advanced Electronics Co., Ltd

代理商:

- 深圳市天诚科技有限公司
 Shenzhen TsaSun Technology Co., Ltd.
 Room 209, 2/F, Block A, Tengfei Industrial Building, No.6,
 Taohua Road, Futian District, Shenzhen
 TEL: 0755-8335 8885 / 0755-8335 9885
 E-mail: sales@tsasun.com
 www.tsacoil.com

Sales Dep.

APPROVED	CHECKED
夏晓曼	夏晓曼

- 西北臺慶科技股份有限公司
 TAI-TECH Advanced Electronics Co., Ltd
Headquarter:
 NO.1 YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI,
 TAO-YUAN HSIEN, TAIWAN, R.O.C.
 TEL: +886-3-4641148 FAX: +886-3-4643565
 http://www.tai-tech.com.tw
 E-mail: sales@tai-tech.com.tw

R&D Center

APPROVED	CHECKED	DRAWN
羅宜春	梁周虎	卜文娟

- 臺慶精密電子(昆山)有限公司
 TAI-TECH ADVANCED ELECTRONICS(KUNSHAN) CO., LTD
 SHINWHA ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN,
 JIANG-SU, CHINA
 TEL: +86-512-57619396 FAX: +86-512-57619688
 E-mail: hui@tai-tech.com.tw

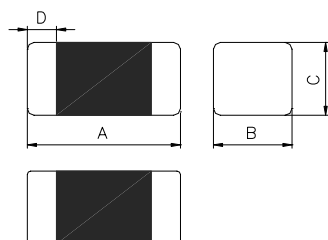
High Current Ferrite Chip Inductor (Lead Free) CPI201210UF -4R7M-0A8

1.Features

1. 2.0x1.25 mm and 1.0 mm in height (very compact size): CAE and fine printing technology made this compact size possible
2. Stable minimum DC resistance in the class.
3. High speed mounting: Using SMT mounter makes less than a second mounting possible.
4. Excellent mounting strength by SMD chip making.
5. Reduced noise over 2/3 of coil inductor by optimal design of CAD
Completely lead-free product and support lead-free solder.



2. Dimensions



Chip Size				
Series	A(mm)	B(mm)	C(mm)	D(mm)
201210	2.0±0.2	1.25±0.2	1.0 max.	0.5±0.3

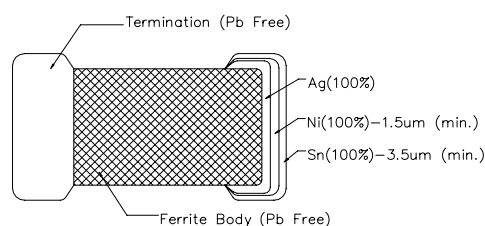
3. Part Numbering

CPI
201210
U
F
-
4R7
M
-
0A8

A: Series
 B: Dimension
 C: Category Code
 D: Material
 E: Inductance
 F: Inductance Tolerance
 G: Rated Current

L x W x H

Lead Free Material
4R7=4.7uH
M=±20%
0A8=800mA

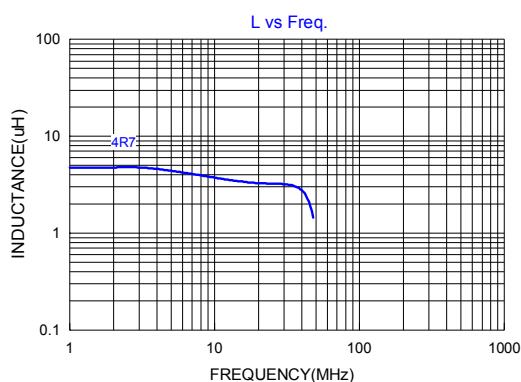


4.Specification

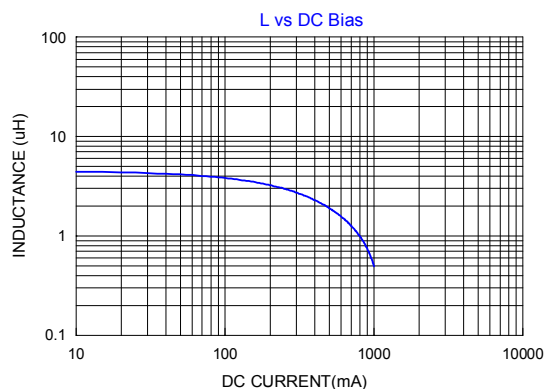
Tai-Tech Part Number	Inductance(uH)	Test Frequency (MHz)	Rated Current (mA) max.	DCR ()	
				max.	typ.
CPI201210UF-4R7M-0A8	4.7±20%	1	800	0.28	0.23

Rated Current : based on temperature rise test

■ Inductance-Frequency Characteristics



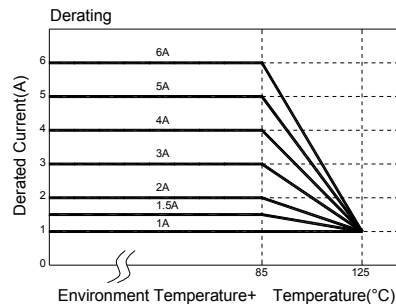
■ Inductance VS DC Bias Current



Item	Performance	Test Condition
Life test	Appearance: no damage.	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature: 125±2 (bead), 85±2 (inductor) Applied current: rated current. Duration: 1000±12hrs. Measured at room temperature after placing for 24±2 hrs.
Load Humidity	Impedance: within±15%of initial value. Inductance: within±10%of initial value. Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Humidity: 85±2%R.H. Temperature: 85±2 . Duration: 1000hrs Min. with 100% rated current. Measured at room temperature after placing for 24±2 hrs.
Thermal shock	Appearance: no damage. Impedance: within±15%of initial value. Inductance: within±10%of initial value. Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Condition for 1 cycle Step1: -40±2 30±5 min. Step2: 25±2 0.5min Step3: +105±2 30±5min. Number of cycles: 500 Measured at room temperature after placing for 24±2 hrs.
Insulation Resistance	IR>1GΩ	Chip Inductor Only Test Voltage:100±10%V for 30Sec.

****Derating Curve**

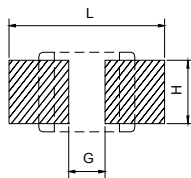
For the ferrite chip bead which withstanding current over 1.5A, as the operating temperature over 85 , the derating current information is necessary to consider with. For the detail derating of current, please refer to the Derated Current vs. Operating Temperature curve.



6.Soldering and Mounting

6-1. Recommended PC Board Pattern

Chip Size						Land Patterns For Reflow Soldering		
Serie	Type	A(mm)	B(mm)	C(mm)	D(mm)	L(mm)	G(mm)	H(mm)
CPI	201210	2.0±0.20	1.25±0.20	1.0 max.	0.5±0.30	3.00	1.00	1.00



PC board should be designed so that products can prevent damage from mechanical stress when warping the board.

6-2. Soldering

Mildly activated rosin fluxes are preferred. The terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.
Note.

If wave soldering is used ,there will be some risk.
Re-flow soldering temperatures below 240 degrees, there will be non-wetting risk

6-2.1 Lead Free Solder re-flow:

Recommended temperature profiles for lead free re-flow soldering in Figure 1. (Referred to J-STD-020C)

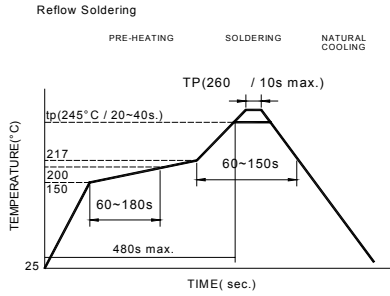
6-2.2 Soldering Iron:

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. If a soldering iron must be employed the following precautions are recommended. for Iron Soldering in Figure 2.

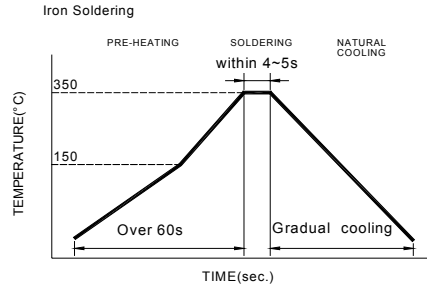
Preheat circuit and products to 150
350 tip temperature (max)

Never contact the ceramic with the iron tip
1.0mm tip diameter (max)

Use a 20 watt soldering iron with tip diameter of 1.0mm
Limit soldering time to 4~5sec.



Reflow times: 3 times max
Fig.1

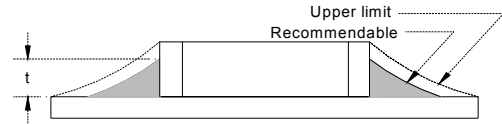


Iron Soldering times : 1 times max
Fig.2

6-2.3 Solder Volume:

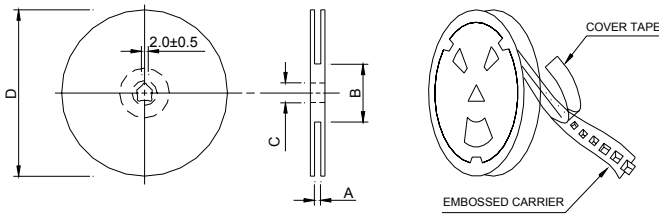
Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceed as shown in right side:

Minimum fillet height = soldering thickness + 25% product height



7. Packaging Information

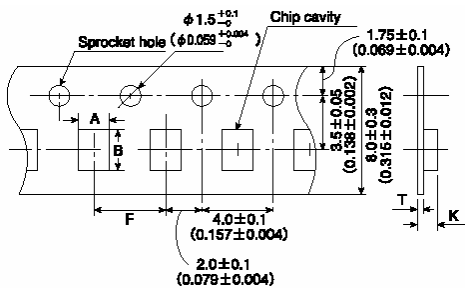
7-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	10±1.5	50 or more	13±0.2	178±2.0

7-2 Tape Dimension / 8mm

Material of taping is plastic

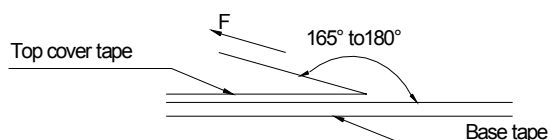


Size	A(mm)	B(mm)	K(mm)	F(mm)	T(mm)
201210	1.55±0.1	2.30±0.1	1.30 max.	4.0±0.1	0.30±0.05

7-3. Packaging Quantity

Chip size	201210
Reel	3000

7-4. Tearing Off Force



The force for tearing off cover tape is 15 to 60 grams in the arrow direction under the following conditions.

Room Temp. ()	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

Storage Conditions(component level)

To maintain the solder ability of terminal electrodes:

1. TAI-TECH 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 from 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.

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