

# Specification for Approval

Date: 2010/09/29

Customer : \_\_\_\_\_

TAIPAQ P/N: TMPC0502H-Series-Z01

CUSTOMER P/N: \_\_\_\_\_

DESCRIPTION: NEW !!

QUANTITY: \_\_\_\_\_ pcs

REMARK:		
Customer Approval Feedback		

Sales Dep.

APPROVED	CHECKED

R&D Center

APPROVED	CHECKED	DRAWN
鄒俊德	羅宜春	李芳

慶邦電子元器件(泗洪)有限公司  
TAIPAQ Electronics(SIHONG) Co., Ltd.

Headquarter:

JIN SHA JIANG ROAD , CONOMIC DEVELOPMENT ZONE SIHONG , JIANSU , CHINA.

TEL: +86-527-88601191 FAX: +86-527-88601190

**SMD Power Choke Coil**

TMPC0502H-Series-Z01

<b>ECN HISTORY LIST</b>					
REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
1.0	10/07/07	新發行	鄒俊德	羅宜春	李芳
1.1	10/07/07	L 尺寸由 7.0 修正為 6.5 G 尺寸由 3.0 修正為 2.5 H 尺寸由 2.5 修正為 1.8	鄒俊德	羅宜春	李芳
1.2	10/09/29	A 尺寸由 5.9±0.3 修正為 5.5±0.3 L 尺寸由 6.5 修正為 6.0 G 尺寸由 2.5 修正為 2.2	鄒俊德	羅宜春	李芳
備 注					

# SMD Power Choke Coil

TMPC0502H-Series-Z01

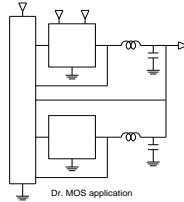
## 1. Features

1. Magnetic metal powder inductor.
2. Compact design.
3. High current · low DCR · high efficiency.
4. Very low acoustic noise and very low leakage flux noise.
5. High reliability.
6. 100% Lead(Pb)-Free and RoHS compliant.

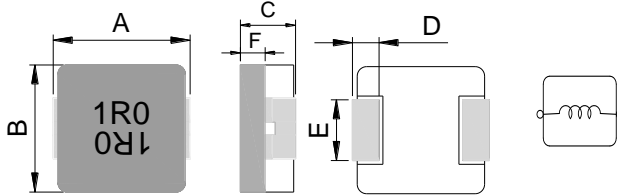


## 2. Applications

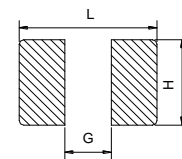
Note PC power system · incl. IMVP-6  
DC/DC converter .



## 3. Dimensions



### Recommend PC Board Pattern



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	L(mm)	G(mm)	H(mm)
TMPC0502H	5.5±0.3	5.2±0.2	1.8±0.2	1.1±0.3	1.5±0.2	0~-1.2	6.0	2.2	1.8

Note:側邊可 Coating0~-1.2 mm.

## 4. Part Numbering



- A: Series
- B: Dimension
- C: Type
- D: Inductance
- E: Inductance Tolerance
- F: Control S/N
- AxC
- Magnetic metal powder
- R33=0.33uH
- M=±20%
- 塗裝灰色系列(塗裝正面)；印字:噴碼或移印.顏色:黑色,雙向印字

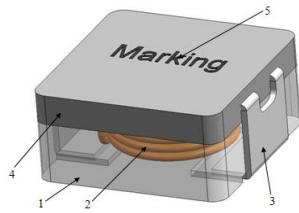
## 5. Specification

Part Number	Inductance L0 (uH)±20% @ 0 A	I rms (A) Typ.	I sat (A) Typ.	DCR(mΩ) Typ. @25°C	DCR(mΩ) Max. @25°C
TMPC0502H-R33M-Z01	0.33	12	21.3	6.3	7.3
TMPC0502H-R47M-Z01	0.47	11.5	18	7.3	8.6
TMPC0502H-R68M-Z01	0.68	10	12.8	11	12.4
TMPC0502H-1R0M-Z01	1.00	7.0	13.7	17.5	20
TMPC0502H-1R2M-Z01	1.20	6.2	11.0	23	28
TMPC0502H-1R5M-Z01	1.50	5.5	9.8	26.5	30.5
TMPC0502H-2R2M-Z01	2.20	4.2	9.0	42.0	50.0
TMPC0502H-3R3M-Z01	3.30	3.3	7.3	66.0	76
TMPC0502H-4R7M-Z01	4.70	2.8	5.0	103	116
TMPC0502H-5R6M-Z01	5.60	2.5	4.0	112	122
TMPC0502H-6R8M-Z01	6.80	2.4	3.8	130	150
TMPC0502H-8R2M-Z01	8.2	2.3	3.5	148	171
TMPC0502H-100M-Z01	10	2.3	3.4	180	199

Note:

1. Test frequency : L : 100KHz /1.0V;
2. All test data referenced to 25°C ambient.
3. Testing Instrument : L/Q: HP4284A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
4. Heat Rated Current (I rms) will cause the coil temperature rise approximately Δt of 40°C (keep 1min.).
5. Saturation Current (Isat) will cause L0 to drop 20% typical. (keep quickly).
6. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions.Circuit design,component,PCB trace size and thickness,airflow and other cooling provisions all affect I rms and I sat. I rms and I sat should be verified in the end application.
7. Special inquiries besides the above common used test conditions, please refer to our website.

## 6. Material List



NO	Items	Materials
1	Core	Magnetic metal powder or equ.
2	Wire	Polyester Wire or equivalent.
3	Solder Plating	100% Pb free solder
4	paint	Epoxy resin
5	Ink	Halogen-free ketone

## 7. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125°C	
Storage temperature and Humidity range	-40~+125°C, 50~60%RH (Product without taping)	
<b>Electrical Performance Test</b>		
Inductance	Refer to standard electrical characteristics list.	HP4284A, CH11025, CH3302, CH1320, CH1320S LCR Meter.
DCR		CH16502, Agilent33420A Micro-Ohm Meter.
Saturation Current (Isat)	△L20% typical.	Saturation DC Current (Isat) will cause L0 to drop △L(%)(keep quickly).
Heat Rated Current (Irms)	Approximately $\Delta T \leq 40^{\circ}\text{C}$	Heat Rated Current (Irms) will cause the coil temperature rise $\Delta T(^{\circ}\text{C})$ without core loss. 1. Applied the allowed DC current(keep 1 min.). 2. Temperature measured by digital surface thermometer
<b>Reliability Test</b>		
High Temperature Exposure Test	Electric specifications should be satisfied	Temperature: 125±2°C. Duration: 1000±12hrs. Measured at room temperature after placing for 2 to 3hrs. (MIL-PRF-27)
Biased Humidity Test		Humidity: 85±3%RH. Temperature: 85±2°C. Duration: 1000±12hrs. Measured at room temperature after placing for 2 to 3hrs (AEC-Q200-REV C)
Thermal shock test		Condition for 1 cycle Step1: -40+0 / -2°C 15±1 min. Step2: Room temperature within ≤0.2 min. Step3: +125+2 / -0°C 15±1min. Number of cycles: 300 Measured at room temperature after placing for 2 to 3 hrs. (AEC-Q200-REV C)
Vibration test		Frequency: 10-2000-10Hz for 20 min. Amplitude: Parts mounted within 2" from any secure point. Directions and times: X, Y, Z directions for 20 min. This cycle shall be performed 12 times in each of three mutually perpendicular directions (Total 12hours). (MIL-STD-202 Method 204 D Test condition B)
Reflow test		Pre-heat : 150±5°C Duration : 5 minutes Temperature : 260±5°C · 20~40 seconds (IPC/JEDEC J-STD-020C)
Solder test		Terminals should be covered by over 95% solder on visual inspection

## 8. Soldering and Mounting

### (1) Soldering

Mildly activated rosin fluxes are preferred. The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate. 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.

### (2) Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

### (3) Soldering Iron:

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150°C
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 355°C tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4-5sec.

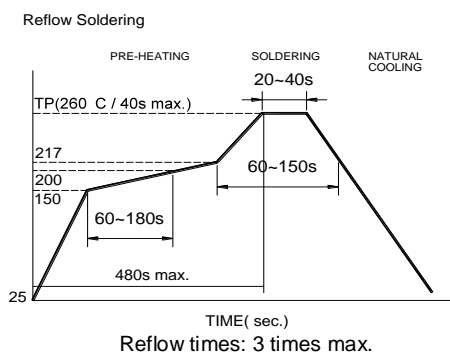


Fig.1

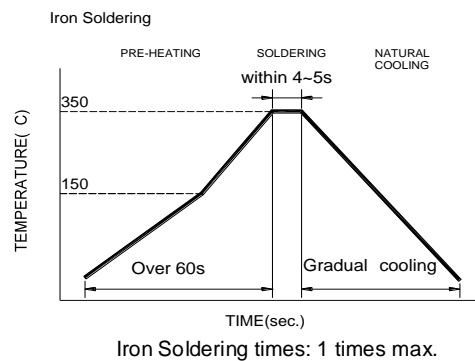
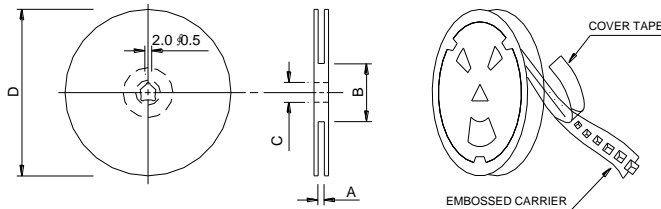


Fig.2

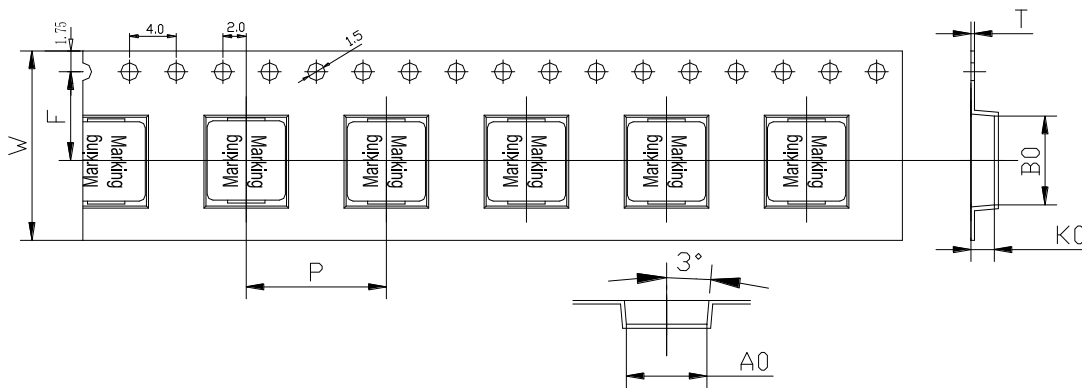
### 9. Packaging Information

#### (1) Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x12mm	12.0±0.5	100±2	13.5±0.5	330

#### (2) Tape Dimension

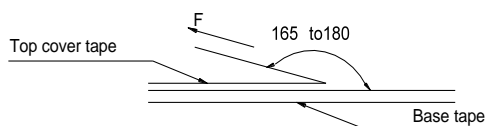


Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	t(mm)
TMPC	0502	5.9±0.1	5.5±0.1	2.3±0.1	8.0±0.1	12.0±0.3	5.5±0.1	0.35±0.05

#### (3) Packaging Quantity

TMPC	0502
Chip / Reel	3000
Inner box	6000
Carton	24000

#### (4) Tearing Off Force



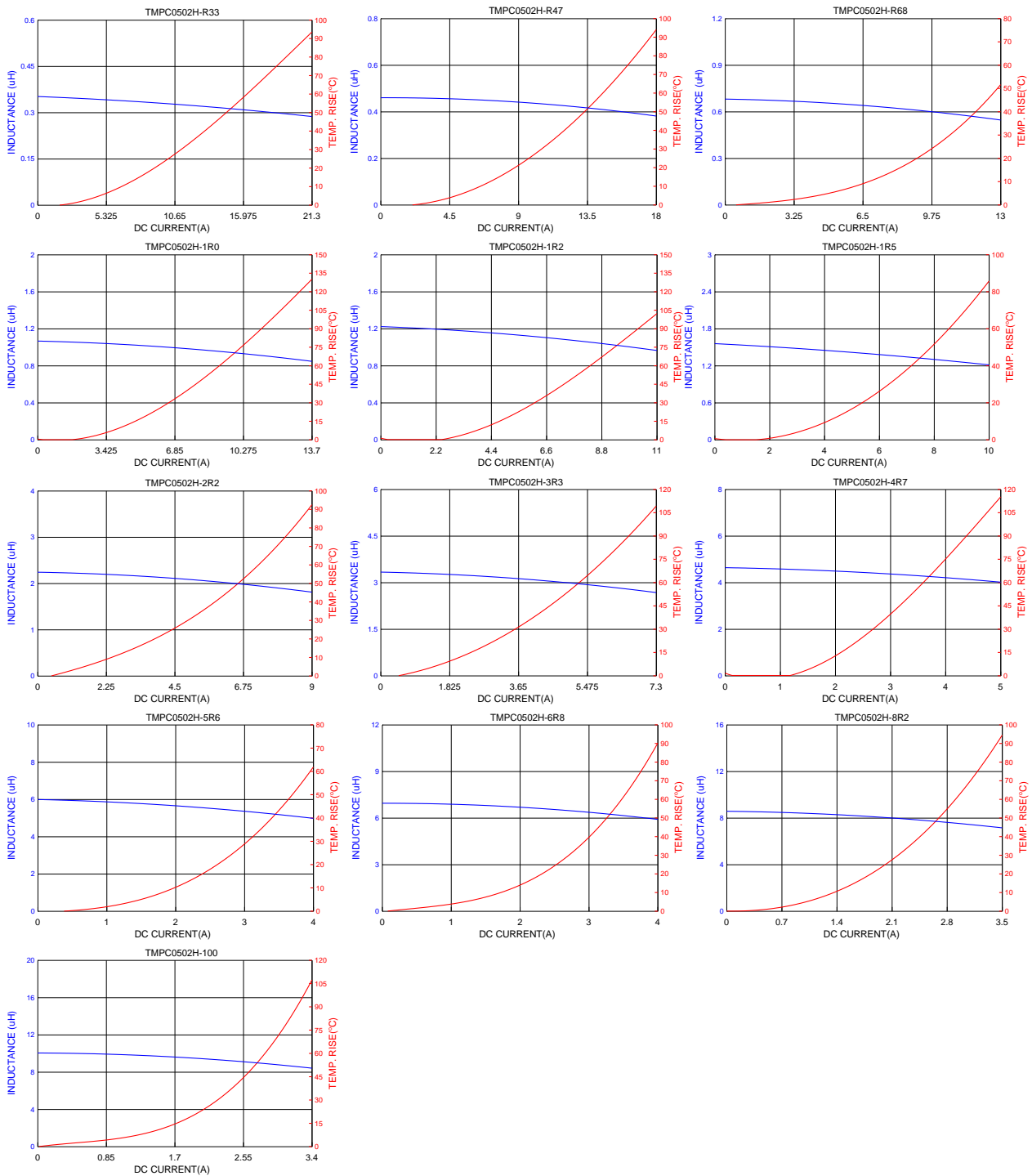
The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions(referenced ANSI/EIA-481-C-2003 of 4.11 stadnard).

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

#### Application Notice

- Storage Conditions
  - To maintain the solderability of terminal electrodes:
    - TAIPAQ products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
    - Temperature and humidity conditions: Less than 30°C and 70% RH.
    - Recommended products should be used within 6 months form the time of delivery.
    - 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 pi
  - 3. Bulk handling should ensure that :

### 10. Typical Performance Curves



单击下面可查看定价，库存，交付和生命周期等信息

[>>TAI-TECH\(台庆\)](#)