TO：	文 件 编 号	HXA-L05-24(05)
	发 行 日 期	2013 年 12 月 24 日

承 认 规 格 书

种　　类：功　率　电　感

系 列 号：FWP565033N-Series-HD

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

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SMD Power Inductor

FWP565033N-Series-HD

ECN HISTORY LIST

REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
1.0	13/12/24	新发行	龙梅	梁峰	王亮
备注					

SMD Power Inductor

FWP565033N-Series-HD

1. Features

1. Small and Low profile inductor
2. It corresponds to high current.
3. Simple and Shield structure.
4. Available tape and reel for auto insertion.
5. 100% Lead(Pb)-Free and RoHS compliant.

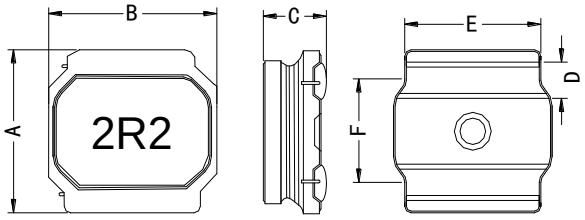
Halogen-free

Pb-free

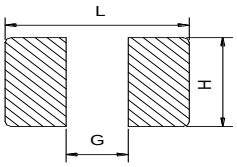
2. Applications

-For small DC/DC converter(cellular phone,LCD/LED/OLED display, HDD, DSC etc)

3. Dimensions



Recommendend Land pattern



	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)
FWP565033N	5.60±0.3	5.00±0.3	3.00±0.3	2.0±0.3	3.8±0.3	3.1±0.3

L(mm)	G(mm)	H(mm)
6.0	1.7	5.5

4. Part Numbering

FWP	565033	N	-	2R2	M	-	HD
A	B	C		D	E		F

A: Series
B: Dimension A*B*C
C: Type
D: Inductance 2R2=2.20uh 100=10uh,101=100uh,102=1000uh
E: Inductance Tolerance K=±10%,M=±20%.
F: Holder 印字：黑色，单向印字
marking direction cannot decide polarity. Color: Black, unidirectional.
No magnetic shielding

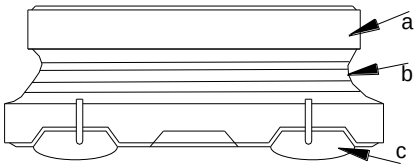
5. Specification

Part Number	Inductance L0 (uH) @ 0 A	Tolerance	Frequency (Hz/1V)	Rated current		DCR (mΩ) @25℃ ±20%.
				Tempetature current I rms (A)	Saturation current I sat (A)	
FWP565033N-1R0M-HD	1.00	± 20%	7.96M	5.0	4.7	13
FWP565033N-1R5M-HD	1.50	± 20%	7.96M	4.8	4.4	16
FWP565033N-2R2M-HD	2.20	± 20%	7.96M	4.0	3.8	24
FWP565033N-3R3M-HD	3.30	± 20%	7.96M	3.6	3.2	33
FWP565033N-4R7M-HD	4.70	±20%	7.96M	3.2	2.7	43
FWP565033N-6R8M-HD	6.80	±20%	7.96M	2.6	2.2	60
FWP565033N-100K-HD	10.0	±10%	2.52M	2.0	1.8	96
FWP565033N-120K-HD	12.0	±10%	2.52M	1.9	1.65	105
FWP565033N-150K-HD	15.0	±10%	2.52M	1.8	1.55	125
FWP565033N-220K-HD	22.0	±10%	2.52M	1.5	1.3	180
FWP565033N-330K-HD	33.0	±10%	2.52M	1.3	1.0	249
FWP565033N-470K-HD	47.0	±10%	2.52M	1.02	0.85	345
FWP565033N-680K-HD	68.0	±10%	2.52M	0.85	0.7	500
FWP565033N-101K-HD	100	±10%	1K	0.75	0.6	685
FWP565033N-121K-HD	120	±10%	1K	0.65	0.5	830
FWP565033N-151K-HD	150	±10%	1K	0.5	0.43	1020
FWP565033N-221K-HD	220	±10%	1K	0.41	0.38	1550

Note:

1. All test data referenced to 25℃ ambient.
2. Testing Instrument : L/Q: HP4284A,CH11025,CH3302,CH1320 ,CH1320S LCR METER / Rdc:CH16502,Agilent33420A MICRO OHMMETER.
3. Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40℃ (keep 1min.).
4. Saturation Current (Isat) will cause L0 to drop 30% typical. (keep quickly).
5. The part temperature (ambient + temp rise) should not exceed 125℃ under worst case operating conditions.Circuit design,component,PCB trace size and thickness,airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
6. Special inquiries besides the above common used types can be met on your requirement.

6. Material List



NO	Items	Materials
a	Core	Ferrite DR Core.
b	Wire	Enamelled Copper wire.
c	Terminal	Sn

7. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125℃	
Storage temperature and Humidity range	-10~+40℃,50~60%RH (Product without taping)	
Electrical Performance Test		
Inductance	Refer to standard electrical characteristics list.	HP4284A,CH11025,CH3302,CH1320,CH1320S LCR Meter.
DCR		CH16502,Agilent33420A Micro-Ohm Meter.
Saturation Current (Isat)	△L30% typical.	Saturation DC Current (Isat) will cause L0 to drop △L(%)(keep quickly).
Heat Rated Current (Irms)	Approximately △T≦40℃	Heat Rated Current (Irms) will cause the coil temperature rise △T(℃) without core loss. 1.Applied the allowed DC current(keep 1 min.). 2.Temperature measured by digital surface thermometer
Reliability Test		
High Temperature Exposure Test	Electric specifications should be satisfied	Temperature:125±2℃. Duration:1000±12hrs. Measured at room temperature after placing for 2 to 3hrs. (MIL-PRF-27)
Low Temperature Life Test		Temperature:-40±2℃. Duration:500±12hrs. Measured at room temperature after placing for 2 to 3hrs.
Biased Humidity Test		Humidity:85±3%RH. Temperature:85±2℃. 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℃ 15±1 min. Step2:Room temperature within ≦0.2 min. Step3:+125+2 / -0℃ 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℃ Duration：5 minutes Temperature：260±5℃，5~10 seconds (IPC/JEDEC J-STD-020C)
Solder test	Terminals should be covered by over 95% solder on visual inspection	After dip into flux，dip into solder 235±5℃，4±1seconds Flux 、solder for lead free (ANSI /J-STD-002C Method B)

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. TAIPAQ 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.

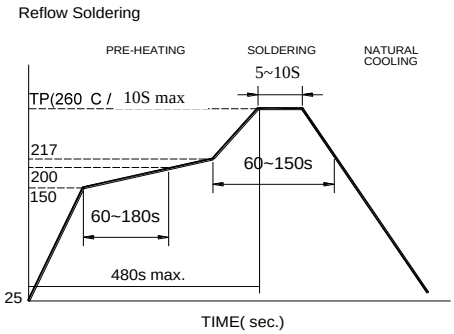
(2) Solder re-flow:

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

(3) Soldering Iron:

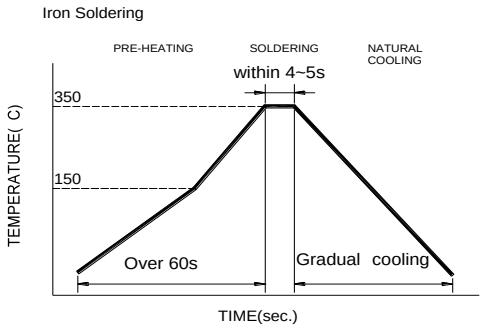
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150℃
- 355℃ 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: 1 times max.

Fig.1

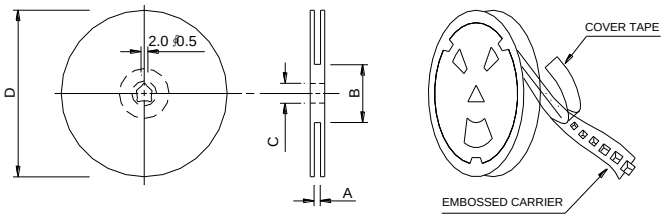


Iron Soldering times: 1 times max.

Fig.2

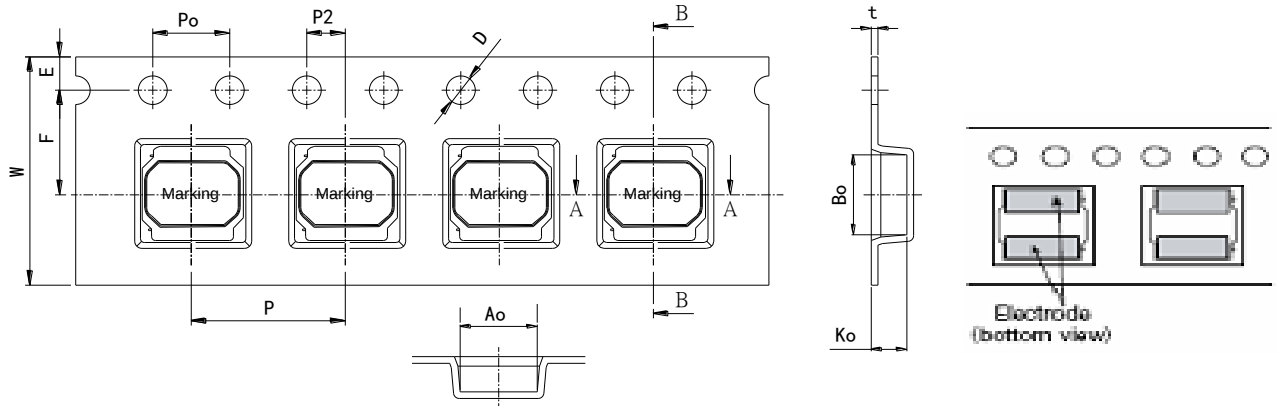
9. Packaging Information

(1) Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x12mm	13.5±1.0	100±2.0	13.5±0.5	330±3.0

(2) Tape Dimension

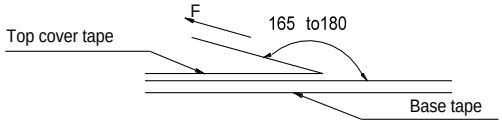


Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	w(mm)	t(mm)	Emm)	F(mm)	D(mm)	Po(mm)	P2(mm)
FWP	565033	6.1±0.1	5.4±0.1	3.5±0.1	8.0±0.1	12±0.3	0. 35±0.1	1.75±0.1	5.50±0.1	1.5±0.1	4.0±0.1	2.00±0.1

(3) Packaging Quantity

FWP	565033
Reel	2000
Inner box	4000
Carton	16000

(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).

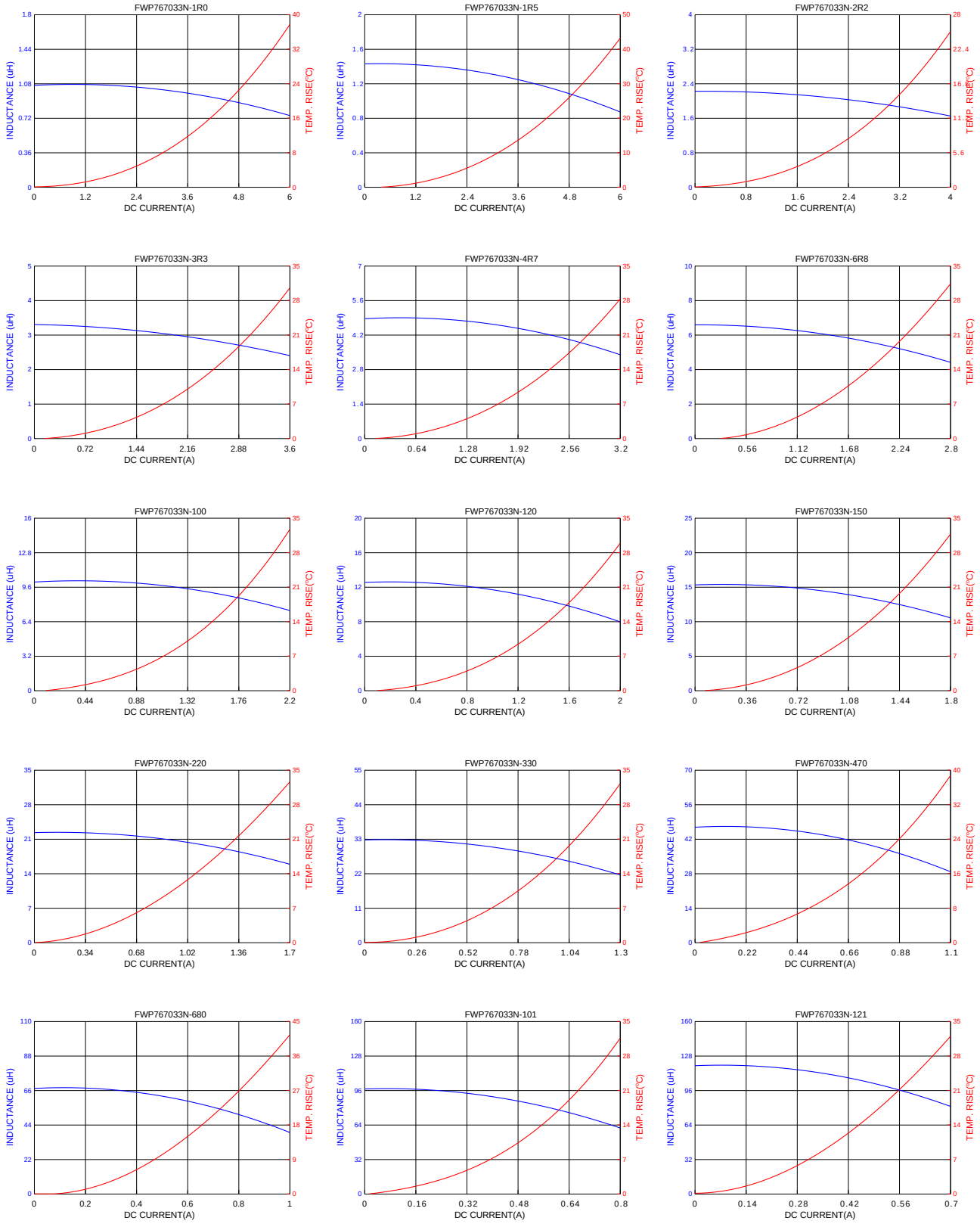
Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

· Storage Conditions
To maintain the solderability of terminal electrodes:
1. TAIPAQ 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.

10. Typical Performance Curves



HOLDER