Wire Wound SMD Power Inductors – WPN Series

Operating Temp. : -40℃~+125℃ (Including self-heating)

FEATURES

- Soft magnetic metal core results in high rated current
- Magnetic-resin shielded construction reduces buzz noise to ultra-low levels
- Metallization on metal core results in excellent shock resistance and damage-free durability
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- Takes up less PCB real estate and save more power

APPLICATIONS

- Smart phones
- Tablet PCs, notebooks, desktop computers, servers
- Blue -ray disc recorders, set top boxes
- Portable gaming device, personal navigation systems, personal multimedia devices

PRODUCT IDENTIFICATION

WPN	201610	H	2R2	M	T
①	②	③	④	⑤	⑥

① Type	
WPN	Metal Core Wire Wound SMD Power Inductor

② External Dimensions (L×W×H) [mm]	
201610	2.0×1.6×1.0
252010	2.5×2.0×1.0

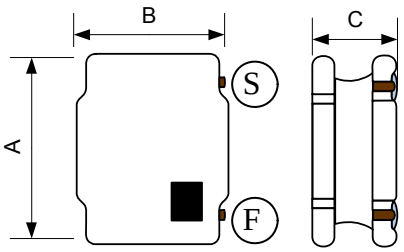
③ Material Code	
H	H Type Material

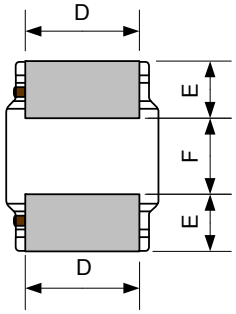
④ Nominal Inductance	
Example	Nominal Value
2R2	2.2μH

⑤ Inductance Tolerance	
N	±30%
M	±20%

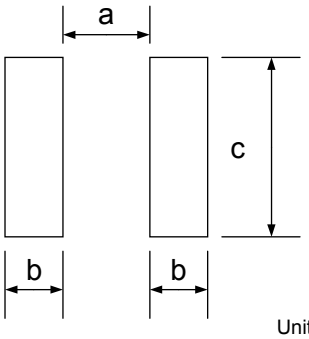
⑥ Packing	
T	Tape & Reel

SHAPE AND DIMENSIONS





Land Pattern

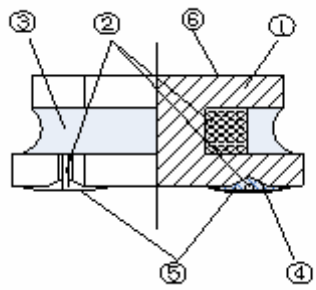


Unit: mm

Series	A	B	C Max.	D	E	F	a Typ.	b Typ.	c Typ.
WPN201610H	2.0±0.2	1.6±0.2	1.0	1.2±0.2	0.60±0.2	0.80±0.2	0.65	0.70	1.60
WPN252010H	2.5±0.2	2.0±0.2	1.0	1.5±0.2	0.80±0.2	0.80±0.2	0.80	0.85	2.00

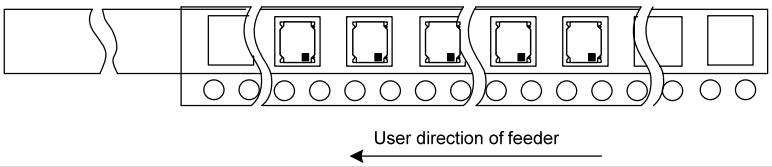
Sunlord Industrial Park, Dafuyuan Industrial Zone, Guanlan, Shenzhen, China 518110 **Tel**: 0086-755-29832660 **Fax**: 0086-755-82269029 **E-Mail**: sunlord@sunlordinc.com

STRUCTURE



No.	Components	Material
①	Core	Soft magnetic Metal
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Substrate	FeNiCu/Ag
⑤	Top Electrodes	Sn alloy
⑥	Marking	Ink

DIRECTION of ROLLING



SPECIFICATIONS

WPN201610H Series（Developing product specifications for reference）

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WPN201610HR24MT	0.24±20%	0.040	0.033	4.50	5.50	3.00	3.45
WPN201610HR47MT	0.47±20%	0.049	0.041	4.00	4.70	2.70	3.10
WPN201610HR68MT	0.68±20%	0.065	0.057	3.45	4.00	2.45	2.80
WPN201610H1R0MT	1.00±20%	0.090	0.075	3.35	3.85	2.05	2.35
WPN201610H2R2MT	2.2±20%	0.170	0.142	1.90	2.15	1.45	1.70
WPN201610H100MT	2.2±20%	0.826	0.688	0.80	0.95	0.65	0.75

WPN252010H Series（Developing product specifications for reference）

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WPN252010HR47MT	0.47±20%	0.047	0.039	4.80	5.40	3.10	3.70
WPN252010HR68MT	0.68±20%	0.062	0.052	3.50	4.10	2.70	3.20
WPN252010H1R0MT	1.00±20%	0.078	0.065	2.90	3.40	2.40	2.90
WPN252010H1R5MT	1.50±20%	0.101	0.084	2.60	3.10	2.00	2.30
WPN252010H2R2MT	2.20±20%	0.161	0.134	1.90	2.20	1.50	1.80
WPN252010H3R3MT	3.30±20%	0.235	0.196	1.60	1.90	1.20	1.40
WPN252010H4R7MT	4.70±20%	0.276	0.230	1.40	1.70	1.10	1.30
WPN252010H100MT	10±20%	0.492	0.410	0.90	1.00	0.82	0.97

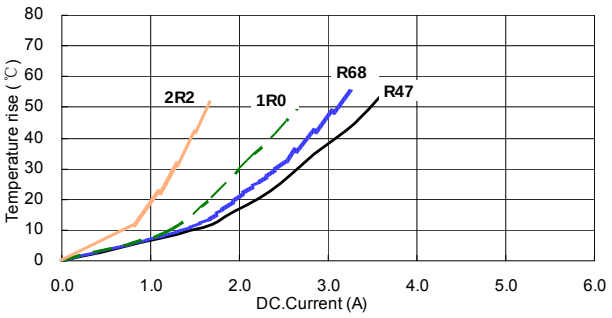
Note1: Inductance with tolerance of ±20% or other value is also available.Please contact you local sales.
※1 : All test data is referenced to 20°C ambient;
※2 : Rated current: Isat or Irms, whichever is smaller;
※3 : Isat: DC current at which the inductance drops approximate 30% from its value without current;
※4 : Irms: DC current that causes the temperature rise (△T =40°C) from 20°C ambient.
The part temperature (ambient + temp. rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
Note2: Series Product stays in sample stage.

Sunlord Industrial Park, Dafuyuan Industrial Zone, Guanlan, Shenzhen, China 518110 **Tel**: 0086-755-29832660 **Fax**: 0086-755-82269029 **E-Mail**: sunlord@sunlordinc.com

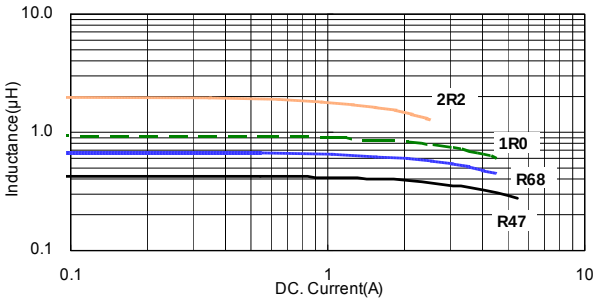
TYPICAL ELECTRICAL CHARACTERISTICS

WPN201610H Series

Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics



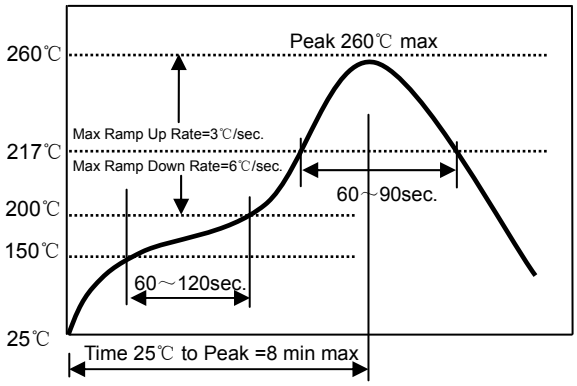
PACKAGING

Type	Tape Width	Reel Diameter	Quantity (pcs)
201610	8mm	178mm	2K
252010	8mm	178mm	2K

RECOMMENDED SOLDERING TECHNOLOGIES

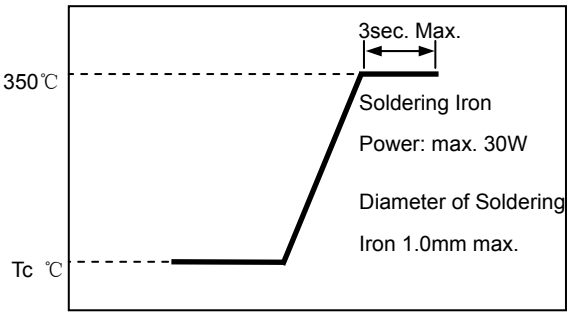
- **Re-flowing Profile:**
  - △ *Preheat condition: 150 ~200 ℃/60~120sec.*
  - △ *Allowed time above 217 ℃: 60~90sec.*
  - △ *Max temp: 260 ℃*
  - △ *Max time at max temp: 10sec.*
  - △ *Solder paste: Sn/3.0Ag/0.5Cu*
  - △ *Allowed Reflow time: 2x max*

  [Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]



- **Iron Soldering Profile.**
  - △ Iron soldering power: Max.30W
  - △ Pre-heating: 150 ℃/60 sec.
  - △ Soldering Tip temperature: 350℃ Max.
  - △ Soldering time: 3sec Max.
  - △ Solder paste: Sn/3.0Ag/0.5Cu
  - △ Max.1 times for iron soldering

  [Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.]



Sunlord Industrial Park, Dafuyuan Industrial Zone, Guanlan, Shenzhen, China 518110 **Tel**: 0086-755-29832660 **Fax**: 0086-755-82269029 **E-Mail**: sunlord@sunlordinc.com