

Specification for Approval

产品承认书

Customer:

Customer P/N:

VOOHU P/N:

WHYTP0320 Series

Version No.:

Description:

Wire Wound Molded SMD Power Inductors

SUZHOU VOOHU Company Approval		Customer Approval (客户承认签章)
DRAWN	Geoffrey.Song	
CHECKED	Sunny.Xu	
APPROVED	Elvis. Song	
日期DATE: 2024/7/13		日期DATE: 2024/7/13

Please Return One Copy to Us After Approved,TKs! (承认后请回寄一份,谢谢)

VOOHU 沃虎
选沃虎·更靠谱

苏州沃虎电子科技有限公司
SuZhou Voohu Electronic Tech.Co.,Ltd

地址: 江苏省苏州市吴江区开平商务中心G栋13楼
ADD: Building A, Alpha Building, Wujiang District,
Suzhou City, Jiangsu Province

TEL: 400 1048 018
+86 13338655578

WEB: www.wohu-tek.com/
E-MAIL: wohu@wohu-tek.com

[illegible]

Introduction

- 100% Lead(Pb)-Free and RoHS compliant.
- High current, low DCR, high efficiency.
- 3.7×3.5×2.0mm maximum surface mount package .
- Operating temperature -55℃~+125℃ (Including self - temperature rise) .

Applications

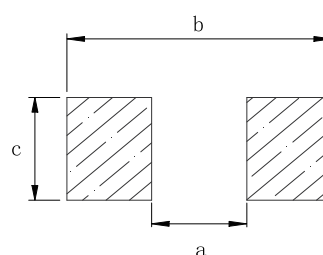
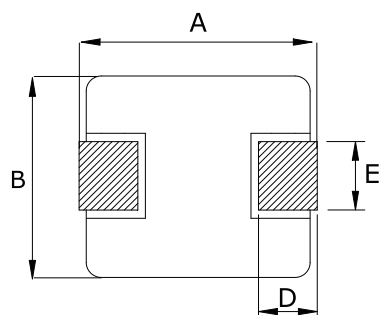
- Note PC power system .
- DC/DC converter .

Product Identification

WHYTP 0320 -1R5 M
① ② ③ ④

- ① WHYTP ----- Series name
- ② 0320----- Dimension
- ③ 1R5 ----- Inductance Value (1R5 = 1.5μH)
- ④ M -----Inductance Tolerance (M= ± 20%)

Dimensions (unit:mm)



Recommend Land Pattern

A	B	C	D	E	a typ	b typ	c typ
3.4±0.3	3.2±0.3	1.8±0.2	0.7±0.2	1.2±0.2	1.9	4.1	1.45

Marking

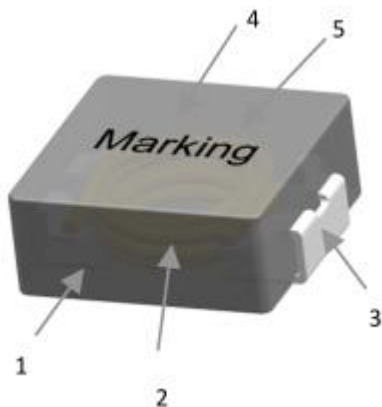
The inductor is marked with a 3-digit code

Nominal Inductance	
Example	Nominal Value
.47	0.47 μ H
1.0	1.0 μ H
100	10 μ H

Note : Using Ink for marking



Structure and Components



NO	Components	Material
1	CORE	Carbonyl Powder
2	WIRE	Polyester Wire or equivalent.
3	Clip	100% Pb free solder(Ni+Sn---Plating)
4	paint	Epoxy resin
5	Ink	Halogen-free ketone

Specification

Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0 (μH)	DCR (mΩ)	Isat (A)	Irms (A)
	±20 %, 100 kHz, 1V	MAX.	TYP.	TYP.
WHYTP0320-R33M	0.33	21	10	8
WHYTP0320-R47M	0.47	23	9	7
WHYTP0320-R68M	0.68	29	7	5.5
WHYTP0320-1R0M	1.0	38	5	4
WHYTP0320-1R5M	1.5	50	4	3.8
WHYTP0320-2R2M	2.2	75	3.7	3.5
WHYTP0320-3R3M	3.3	145	3.5	3
WHYTP0320-4R7M	4.7	200	3	2.6
WHYTP0320-5R6M	5.6	238	2.6	2.2
WHYTP0320-6R8M	6.8	300	2.2	1.9
WHYTP0320-8R2M	8.2	390	1.9	1.6
WHYTP0320-100M	10	422	1.6	1.4

Notes

1. All test data is referenced to 25 °C ambient
2. Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
3. Isat(A):DC current (A) that will cause L0 to drop approximately **30 %**
4. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in appearance 2. New solder coverage More than 95%	1.Preheat: $155^{\circ}\text{C} \pm 5^{\circ}\text{C}$, $60\text{S} \pm 2\text{S}$ 2.Tin: lead-free. 3.Temperature: $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$, flux $3.0\text{S} \pm 0.5\text{S}$.
Mechanical shock	1. No case deformation or change in appearance 2. $\Delta L/L_0 \leq \pm 10\%$	1. Acceleration: 100G 2. Pulse time: 6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in appearance 2. $\Delta L/L_0 \leq \pm 10\%$	1. Reflow: 2times 2. Frequency: $10\text{HZ} \sim 55\text{HZ} \sim 10\text{HZ}$, 20 Min/Cycles 3. Amplitude: 1.52 mm 4. Directions: X,Y,Z 5. Time: 12 cycle / direction
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. First -55°C for 30 minutes, last 125°C for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 3 minutes. 3. Measured at room temperature after placing for 24 ± 2 hours
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1.Reflow 2 times, 2. 85°C ,85%RH,1000 hours 3.Measured at room temperature after placing for 24 ± 2 hours
Low temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature: $-55 \pm 2^{\circ}\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours
High temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature: $+125 \pm 2^{\circ}\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours

Recommended Soldering Technologies

(1)Re-flowing Profile

Preheat condition: 150 ~200℃/60~120sec.

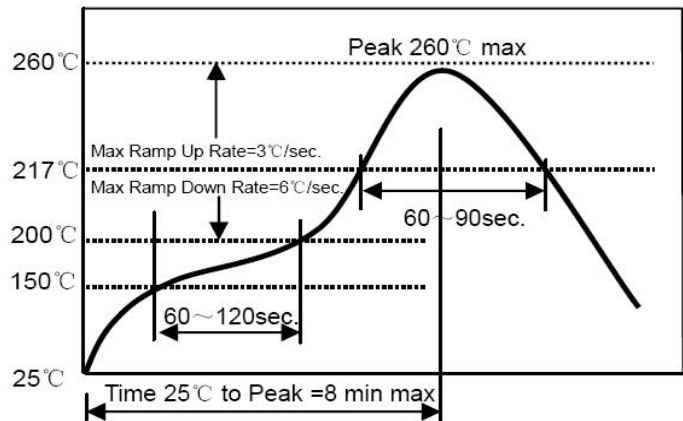
Allowed time above 217℃: 60~90sec.

Max temp: 260℃

Max time at max temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



(2)Iron Soldering Profile

Iron soldering power: Max. 30W

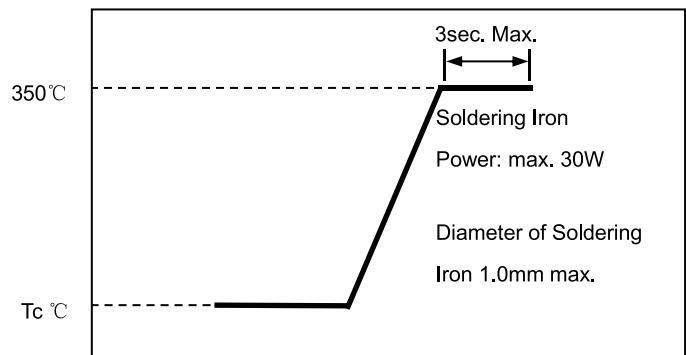
Pre-heating: 150℃/60sec.

Soldering Tip temperature: 350℃ Max.

Soldering time: 3sec. Max.

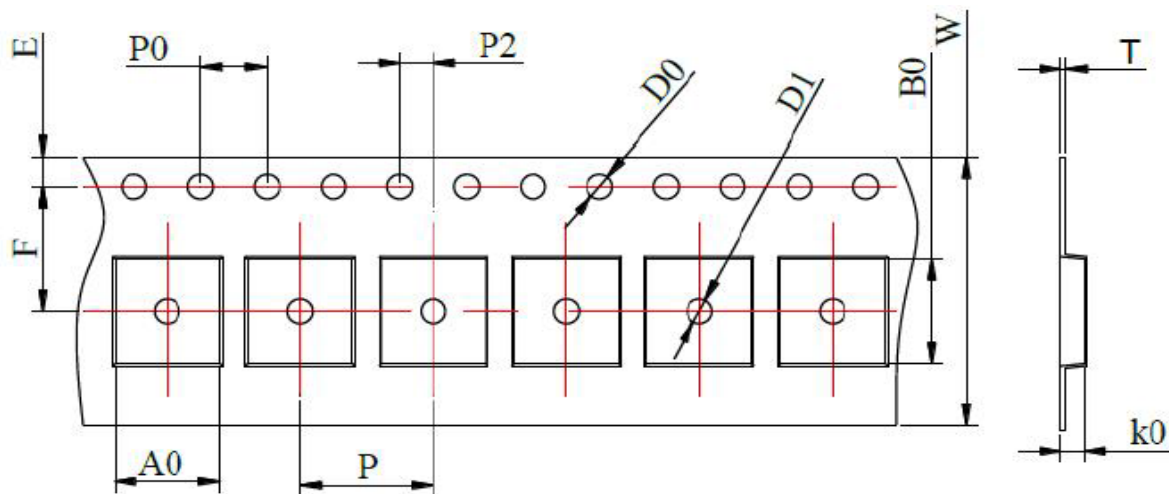
Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering



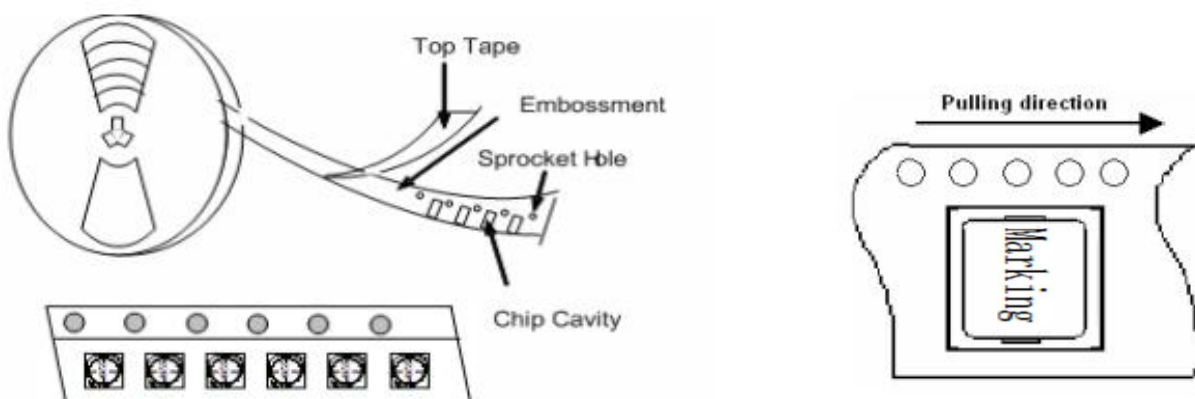
Packaging Information

(1) Tape Packaging Dimensions (Unit: mm)

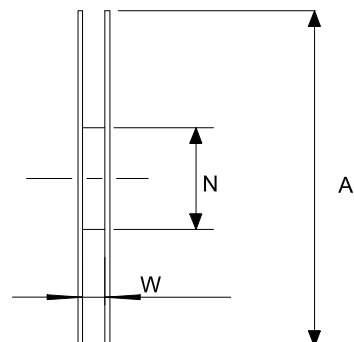
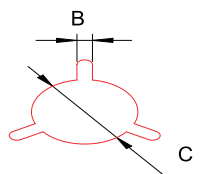
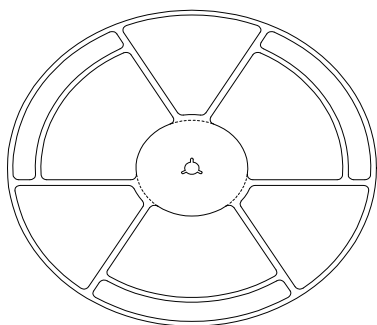


Tape dimensions (mm)											
W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F
12 ±0.3	8 ±0.1	4 ±0.1	2 ±0.1	1.5 ±0.1	1.5 ±0.1	0.35 ±0.05	3.4 ±0.1	3.7 ±0.1	2.4 ±0.1	1.75 ±0.1	5.5 ±0.1

Taping Drawings (UNIT:mm)



(2) Reel Dimensions (Unit: mm)



A	W	N	B	C
330±2.0	12.8±0.2	97±0.5	2.2±0.5	13.0±0.2

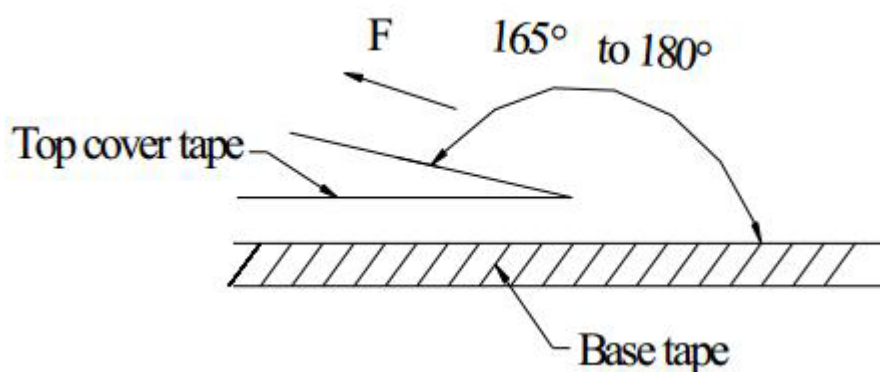
(3) Packaging Quantity

Type	Standard Quantity		
	Reel	Inner box	Carton box
WHYTP0320	3000 pcs / reel	4Reel / box (12000 pcs)	4 Middle boxes, (48,000 pcs)

(4) Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.3 N



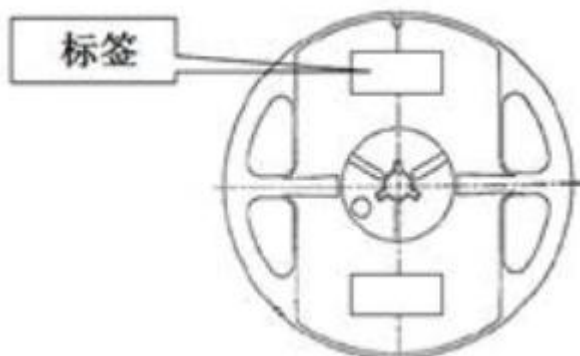
(5) Reel Label

Label on the reel

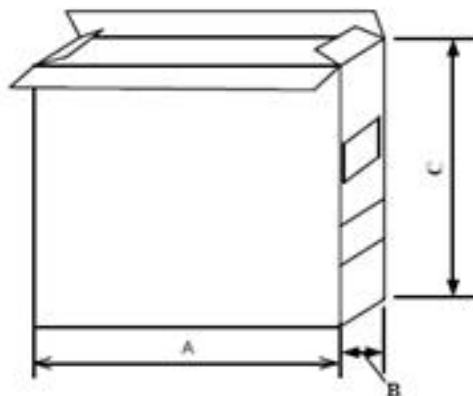
- Customer's part Number
- Lot Number
- Quantity
- date code

Shipping Label

- Customer's part Number
- Manufacturer's part Number
- Quantity
- date code

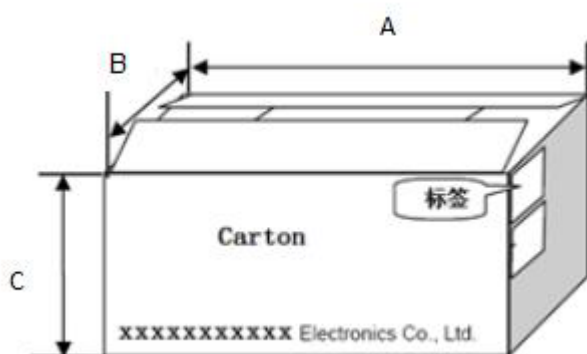


(6) Inner Box



Packaging type	A (mm)	B (mm)	C (mm)
Inner box	335	70	340

(7) Carton



Packaging type	A (mm)	B (mm)	C (mm)
type	360	360	360