

Features

- The structure is coated with magnetic glue, which greatly reduces the buzzing sound;
- Metallized electrode directly on the ferrite core, strong anti-drop impact, durable;
- Closed magnetic circuit structure design, less magnetic leakage, strong anti-EMI capability;
- The rated current is 30% higher than the conventional power inductor under the same size conditions.

Applications

- LED lighting
- TV box
- personal computer
- Battery powered devices.
- Base stations
- PDA/notebook/desktop devices

Product Identification

<u>THWPI</u>	<u>404020</u>	<u>D</u>	<u>4R7</u>	<u>M</u>	<u>T</u>
①	②	③	④	⑤	⑥

- ① Type : THWPI
- ② External Dimensions (L×W×H) [mm]= 404020=4.0*4.0*2.0
- ③ Feature Type: Differential
- ④ Nominal Inductance : 4R7=4.7μH
- ⑤ Inductance Tolerance :
K=±10%
M=±20%
N=±30%
- ⑥ Packing T=Tape Carrier Package

Specifications

Part Number	Inductance	DC Resistance	Saturation Current	Heat Rating Current
	1MHz/1V	($\pm 30\%$).	Max.	Max.
Units	μH	Ω	A	A
Symbol	L	DCR	Isat	Irms
THWPI404020DR24MT	$0.24 \pm 20\%$	0.017	17.0	7.00
THWPI404020DR33MT	$0.33 \pm 20\%$	0.020	16.0	6.80
THWPI404020DR47MT	$0.47 \pm 20\%$	0.022	12.0	6.80
THWPI404020DR68MT	$0.68 \pm 20\%$	0.0245	11.5	6.70
THWPI404020D1R0MT	$1.0 \pm 20\%$	0.028	11.0	6.70
THWPI404020D2R2MT	$2.2 \pm 20\%$	0.056	7.50	4.80
THWPI404020D3R3MT	$3.3 \pm 20\%$	0.088	5.90	4.00
THWPI404020D4R7MT	$4.7 \pm 20\%$	0.115	4.90	3.30
THWPI404020D6R8MT	$6.8 \pm 20\%$	0.160	4.20	2.80
THWPI404020D100MT	$10 \pm 20\%$	0.220	3.50	2.35
THWPI404020D150MT	$15 \pm 20\%$	0.400	2.80	1.20
THWPI404020D220MT	$22 \pm 20\%$	0.545	1.50	1.10
THWPI404020D330MT	$33 \pm 20\%$	0.850	1.40	0.86
THWPI404020D470MT	$47 \pm 20\%$	1.200	1.30	0.66
THWPI404020D101MT	$100 \pm 20\%$	2.020	0.48	0.31

Note: 1: Rated current: Isat(max.) or Irms(max.), whichever is smaller;

2: Saturation Current: Max. Value, DC current at which the inductance without current; Typ. Value, DC current at which the inductance drops 30% from its value without current;

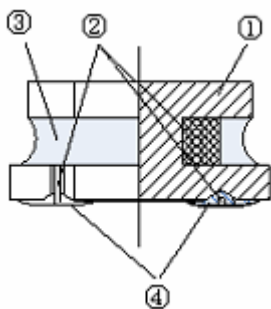
3: Irms: DC current that causes the temperature rise (ΔT) from 20°C ambient.

For Max. Value, $\Delta T < 40^\circ\text{C}$; for Typ. Value, ΔT is approximate 40°C.

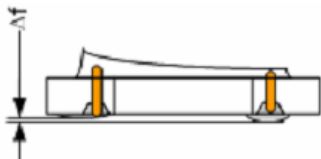
The part temperature (ambient + temp. rise) should not exceed 125°C under Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all at the part temperature. Part temperature should be verified in the end application.

Structure

The structure of THWPI404020 Series product.

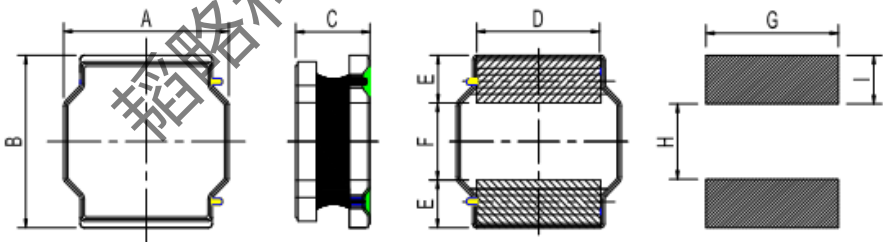


NO.	Components	Material
①	Core	Soft magnetic Metal
②	Wire	Polyurethane system enameled copper wire
③	Magnetic Glue	Epoxy resin and magnetic powder
④	Electrodes	AgNiSn or FeNiCu + Sn Alloy

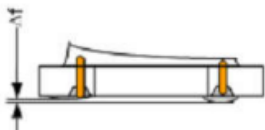


Δ f: Clearance between terminal and the surface of plate must be 0.1mm max when coil is placed on a flat plate.

Package Mechanical Data And Suggested Land Pattern



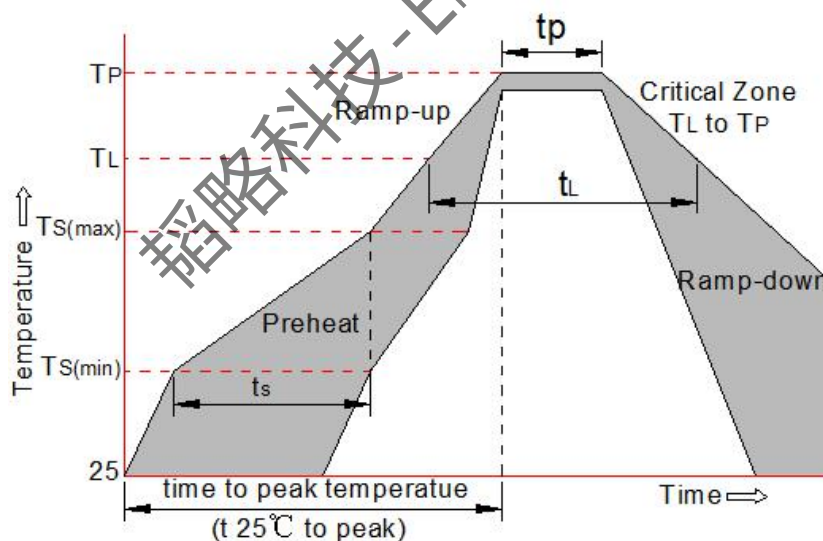
A	B	C	D	E	F	G	H	I
4.0 ± 0.2	4.0 ± 0.2	2.0Max	3.3±0.2	1.0±0.2	2.0±0.2	3.7	1.9	1.1



Δf: Clearance between terminal and the surface of plate must be 0.15mm max when coil is placed on a flat plate.

Soldering Parameters

Reflow Condition		Pb-Free Assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-90 secs .
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



Contact Information

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