

Molding Power Inductors

THMPI020101 Series

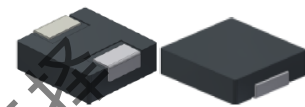
TOP-EMC

FEATURES

- Shielded construction
- Low loss realized with low DCR
- High performance (Isat) realized by metal dust core.
- Ultra low buzz noise, due to composite construction.
- RoHS, Halogen Free and REACH Compliance
- High reliability -Reliability tests comply with AEC-Q200

APPLICATIONS

- Electric Power Steering
- ABS Control Units
- Battery powered devices
- Car Navigation Systems
- Meters/Alarms
- Car distance Control Units

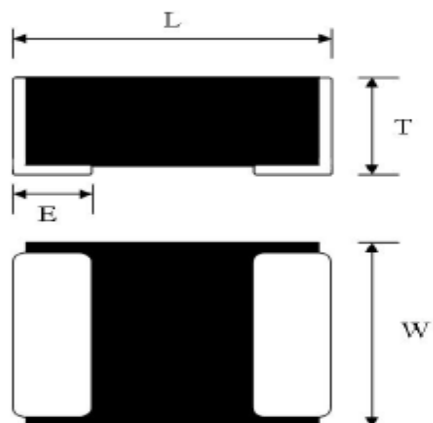


PRODUCT IDENTIFICATION

THMPI 020101 D R47 M T
① ② ③ ④ ⑤ ⑥

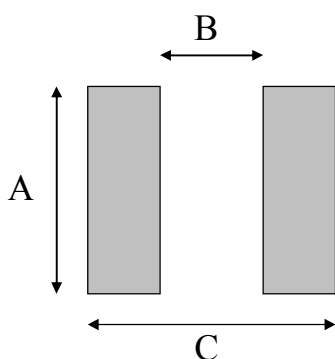
- ① Type : THMPI
- ② External Dimensions (L×W×H) [mm]= 020101
- ③ Feature Type: Differential
- ④ Nominal Inductance : R47=0.47 μH
- ⑤ Inductance Tolerance : K=±10%
M=±20%
N=±30%
- ⑥ Packing T=Tape Carrier Package

SHAPE AND DIMENSIONS (Dimensions in mm)



L [mm]	W [mm]	T [mm]	E [mm]
2.0±0.2	1.6±0.2	1.0 max.	0.5±0.3

Land Pattern



A [mm]	B [mm]	C [mm]
1.6	0.9	2.0

SPECIFICATIONS

Part No.	Inductance	DC Resistance		Saturation Current		Heating Rating Current	
	L0 (μH)	DCR (mΩ)		Isat (A)		Idc (A)	
	±20 %, 100 kHz, 1V	TYP.	MAX	TYP.	MAX	TYP.	MAX
THMPI020101DR24MT	0.24	17	21	5.6	5.05	5.0	4.5
THMPI020101DR33MT	0.33	24	29	5	4.5	4.1	3.69
THMPI020101DR47MT	0.47	33	40	4.4	4	3.5	3.15
THMPI020101DR68MT	0.68	41	49	3.7	3.33	3.4	3.06
THMPI020101D1R0MT	1.0	60	69	2.9	2.61	2.6	2.26
THMPI020101D1R5MT	1.5	114	129	2.5	2.25	2.0	1.81
THMPI020101D2R2MT	2.2	135	150	1.9	1.71	1.7	1.5

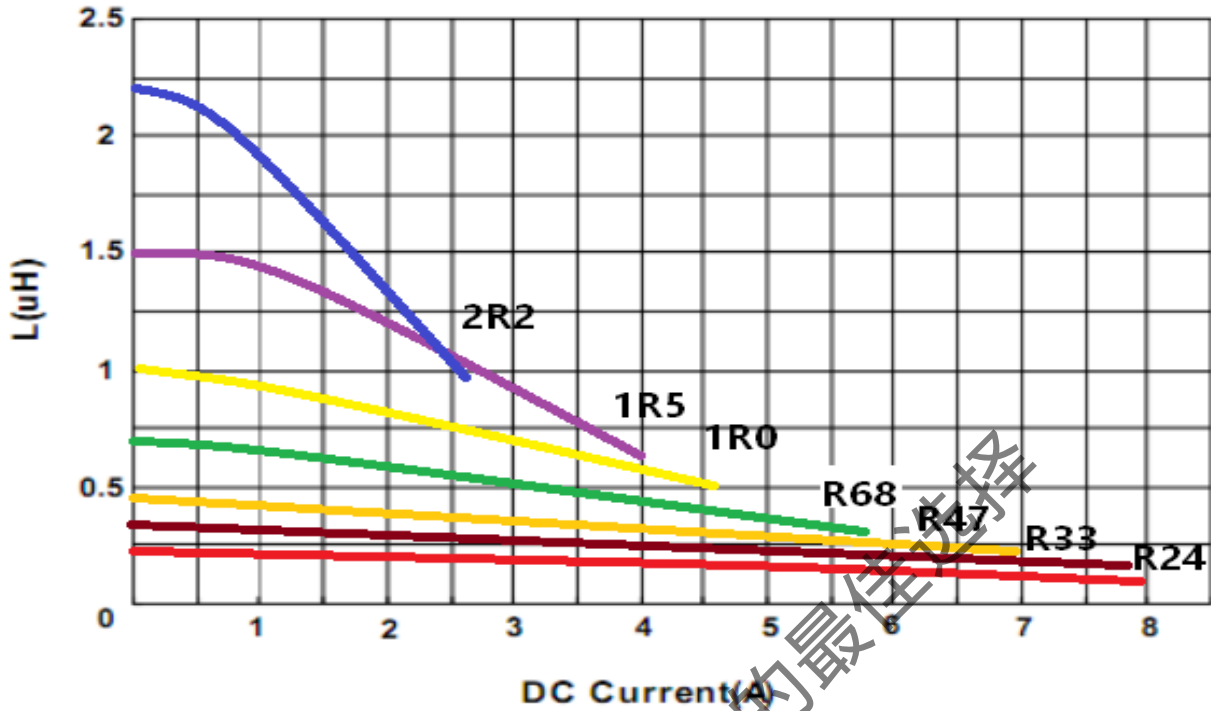
Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 125 °C
3. Idc(A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25°C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions.

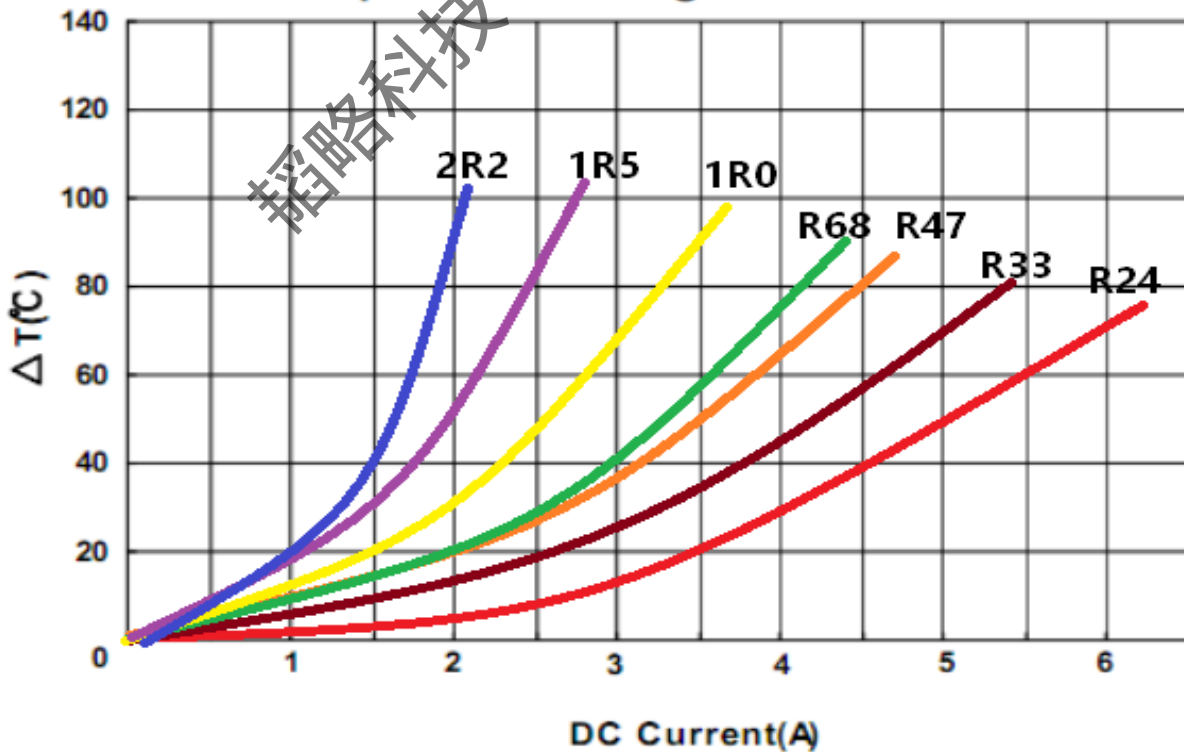
Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Graph

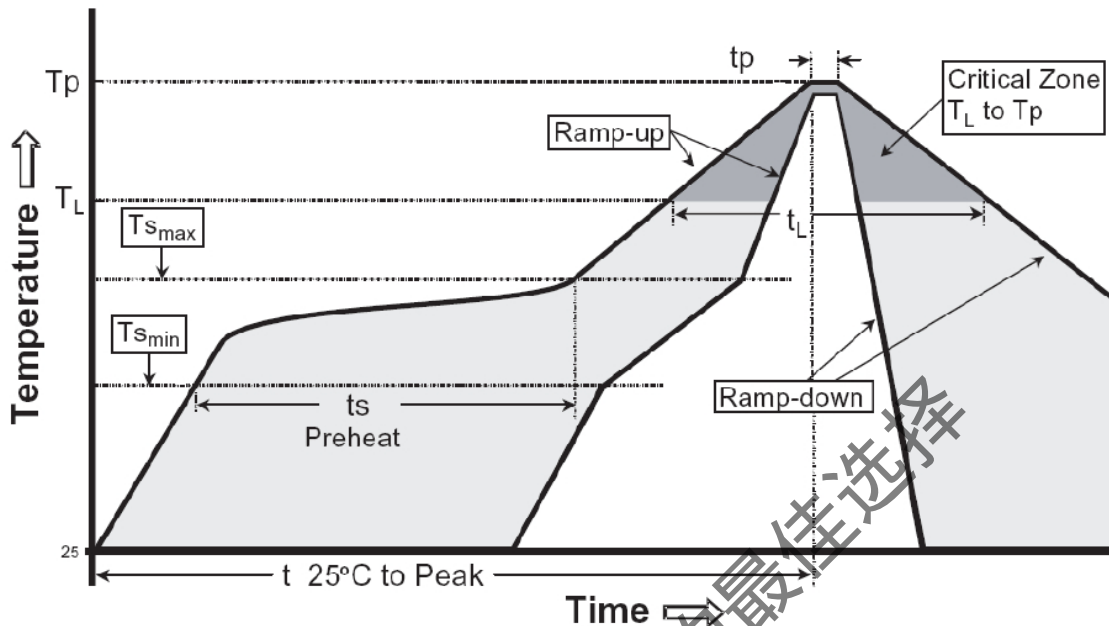
Inductance vs DC Current



Temperature Change v.s DC Current



RECOMMENDED SOLDERING TECHNOLOGIES



Profile Feature	Pb free Assembly
Average Ramp Rate (Ts max to Tp)	3 °C/second max
Preheat	
- Temperature Min (Ts _{min})	150 °C
- Temperature Min (Ts _{max})	200 °C
- Time (ts _{min} to ts _{min})	60-180 seconds
Time maintained above:	
- Temperature (T _L)	217 °C
- Time (t _L)	60-150 seconds
Peak/Classification Temperature (T _p)	260 °C
Peak/Classification Time (T _p)	3-4 seconds
Time within 5 °C of actual Peak Temperature (T _p)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max

CONTACT INFORMATION

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