PML2512

High Current, Power Inductors

Description

- Halogen Free
- 125℃ maximum total temperature operation
- Surface mount package
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- RoHS compliant

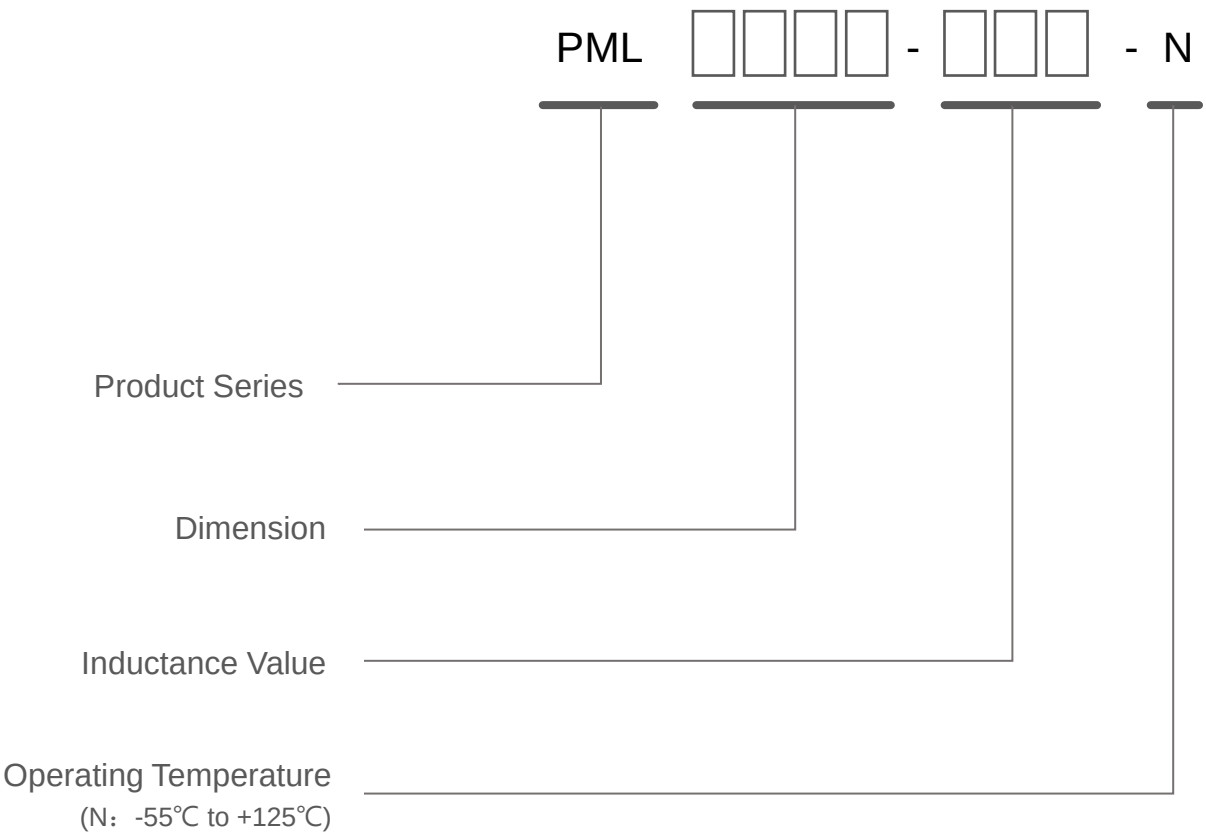
Application

- Voltage Regulator Module (VRM)
- Multi-phase regulators,
- Point-of-load module, Smart phone POL modules
- SSD modules, Notebook regulators
- Battery power systems
- Graphics cards
- Data networking and storage systems
- DC/DC converter
- Cellular phones, LCD displays, HDDs

Environmental Data

- Storage temperature range: -55℃ to +125 ℃
- Operating temperature range: -55℃ to +125℃
  (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant

Ordering Information



Product Specifications

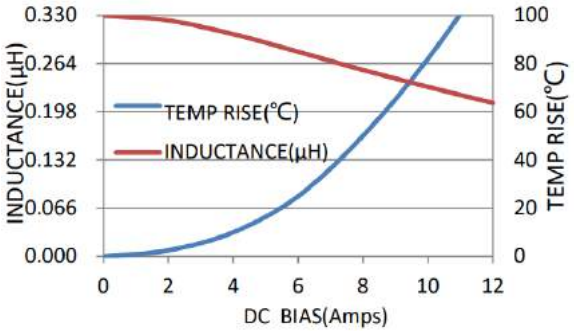
Part No.	Inductance	DC Resistance		Heating Rating Current	Saturation Current
	L0 (μH)	DCR (mΩ)		Idc (A)	Isat (A)
	±20 %	TYP.	MAX.	TYP.	TYP.
PML2512-R33-N	0.33	14.0	19.0	6.8	8.5
PML2512-R47-N	0.47	17.0	21.0	6.1	7.3
PML2512-R68-N	0.68	25.0	30.0	5.5	6.3
PML2512-1R0-N	1.0	35.0	42.0	4.2	5.4
PML2512-1R5-N	1.5	53.0	61.0	3.6	3.6
PML2512-2R2-N	2.2	68.0	82.0	3.0	3.3
PML2512-3R3-N	3.3	110.0	135.0	2.1	2.8
PML2512-4R7-N	4.7	160.0	190.0	1.8	2.4

Notes

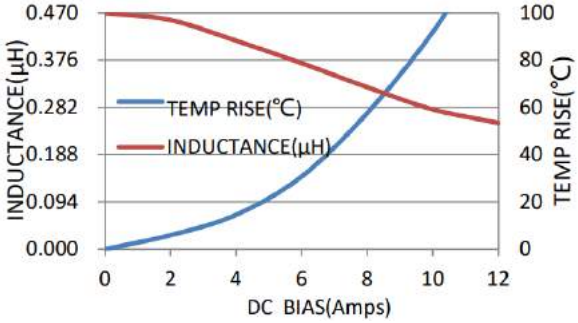
1. Initial Inductance (L0) Test Parameters:1MHz,1V,Idc=0.0A,+25℃
2. Operating temperature range - 55 °C to + 125 °C
3. IDC(A): DC current (A) that will cause an approximate ΔT of 40 °C
4. ISAT(A): DC current (A) that will cause L0 to drop approximately 30 %
5. The part temperature (ambient + temp rise) 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.
6. The rated current as listed is either the saturation current or the heating current depending on which value is lower.

Inductance and temperature rise vs. current

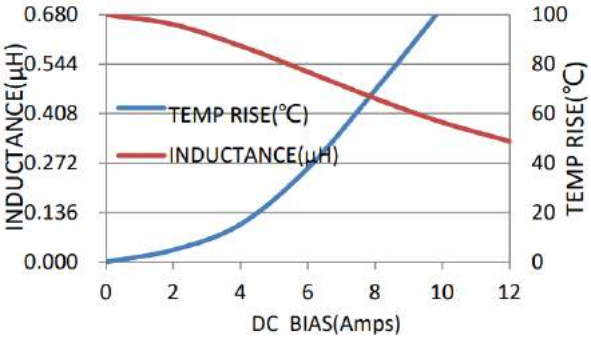
PML2512-R33-N



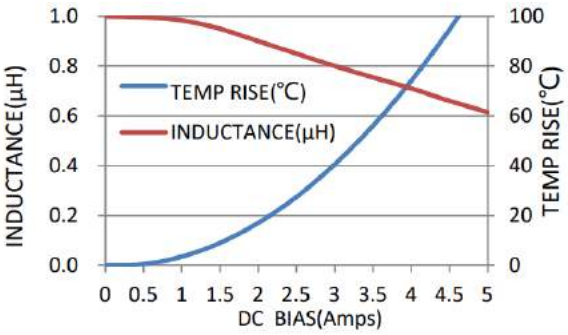
PML2512-R47-N



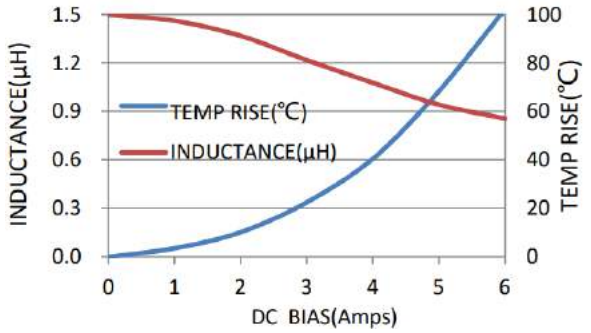
PML2512-R68-N



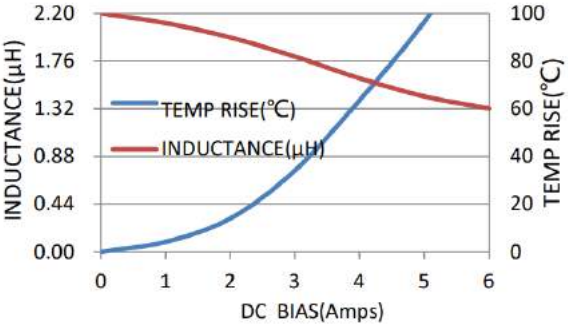
PML2512-1R0-N



PML2512-1R5-N

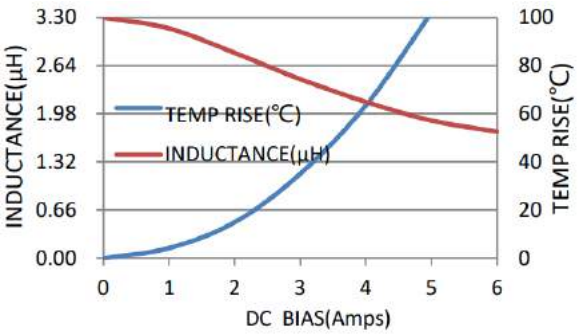


PML2512-2R2-N

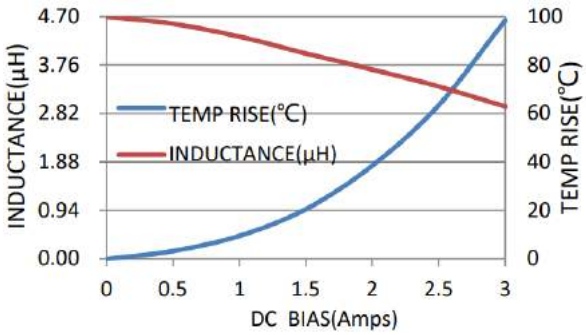


Inductance and temperature rise vs. current

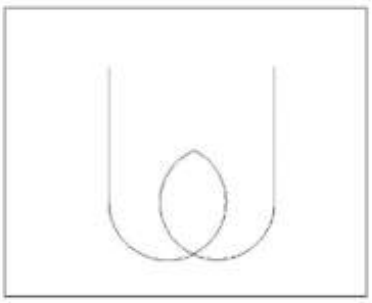
PML2512-3R3-N



PML2512-4R7-N

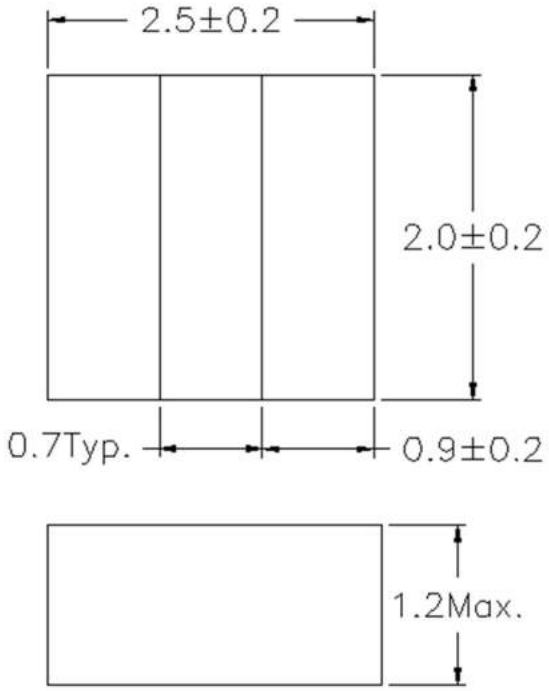


Schematics

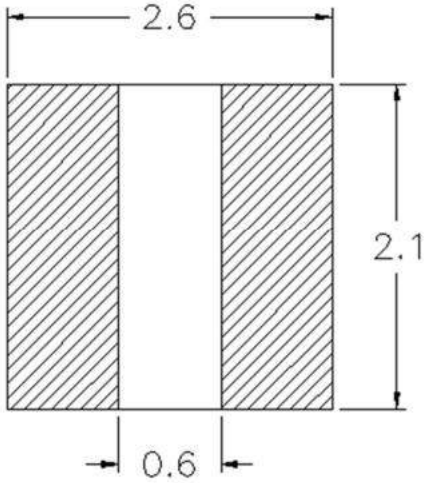


Dimensions

MECHANICAL PARAMETERS



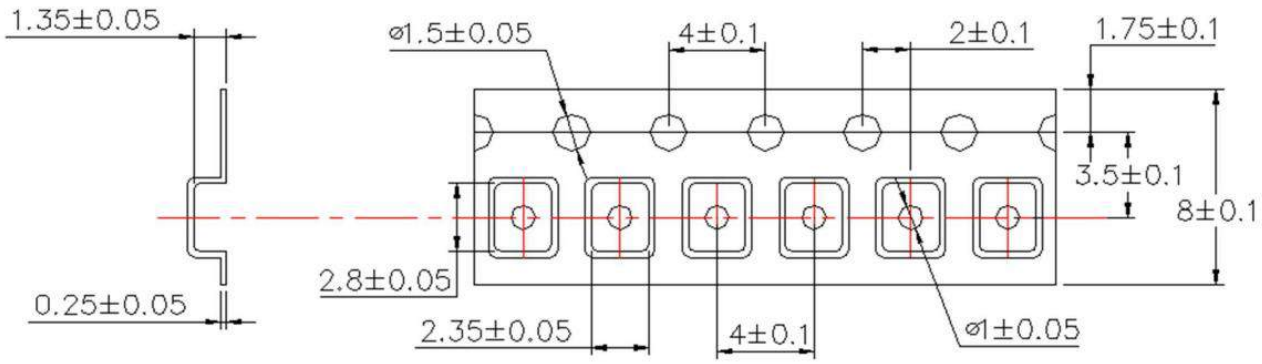
RECOMMENDED PCB LAYOUT



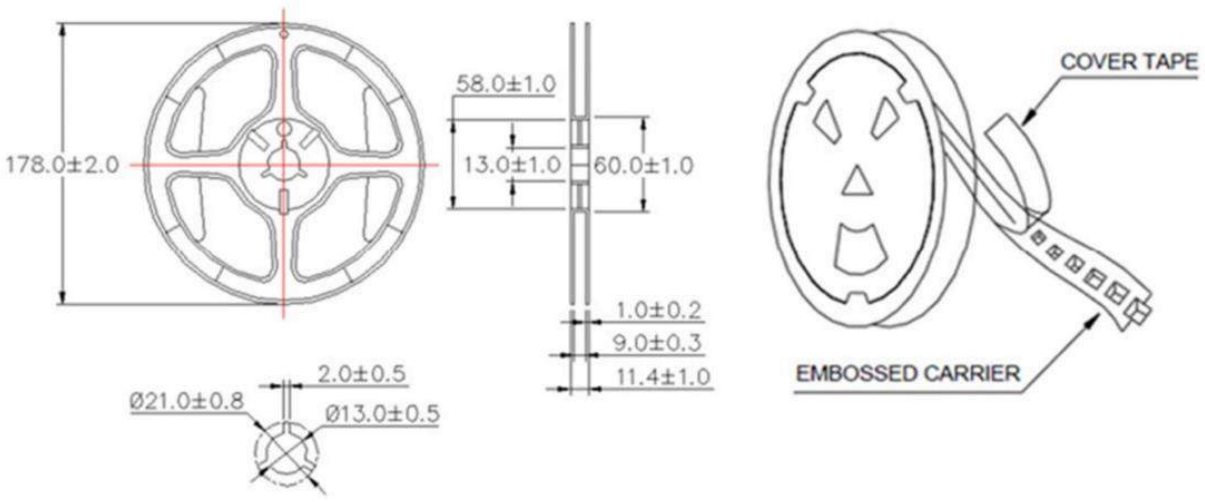
Notes：

1. Dimensions in mm
2. Tolerances are +/-0.1millimeters unless stated otherwise
3. Dimensions of recommended PCB layout are reference only
4. Do not route traces nor place vias underneath the inductor. Proper layout is required.

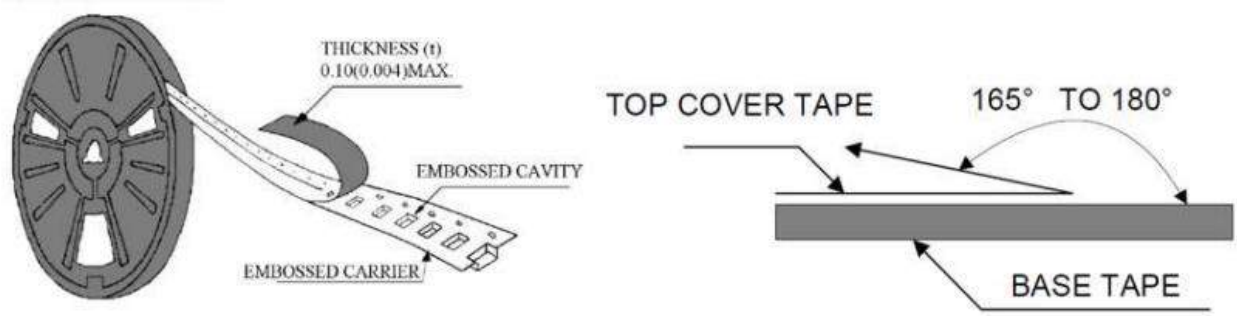
Tape Packaging Dimensions



Reel Dimensions



Peel force of top cover tape



The force for peeling off cover tape is 10 to 130 grams in the arrow direction.

Numbers of taping

3000 pieces/reel

Reflow Profile

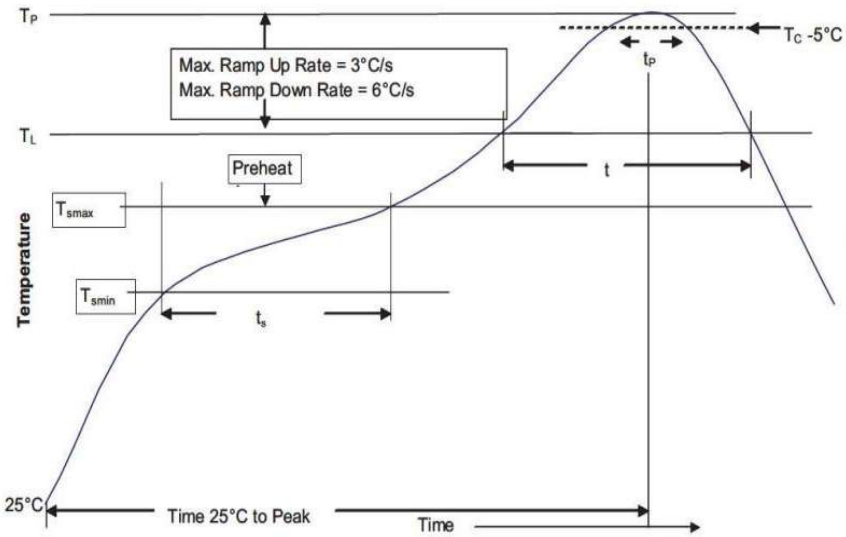


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder (T_C)

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (Tp)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

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