

# SMT Power Inductor

Ruggedized



- R Height: 7.1mm Max
- R Footprint: 14.6mm x 12.6mm Max
- R Current Rating: up to 15A
- R Moisture Sensitivity Level: 1
- R Frequency Range: 50kHz to 500kHz
- R Finish is Tin/Lead (Sn63/Pb37)
- R Storage Temperature: -40°C to +130°C
- R Max Reflow Temperature: 225°C

### Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Part Number	Inductance @ Irated (μH ±15%)	Irated (ADC)	DCR (mΩ)		Inductance @ 0 ADC (μH ±15%)	Saturation Current		Heating Current (A)
			TYP	MAX		25°C	100°C	
<b>2-TURN (LOW-LOSS) SERIES</b>								
PL2059	0.85	39	.38	.48	0.91	46	37	73

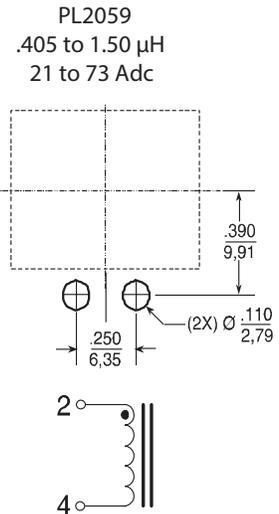
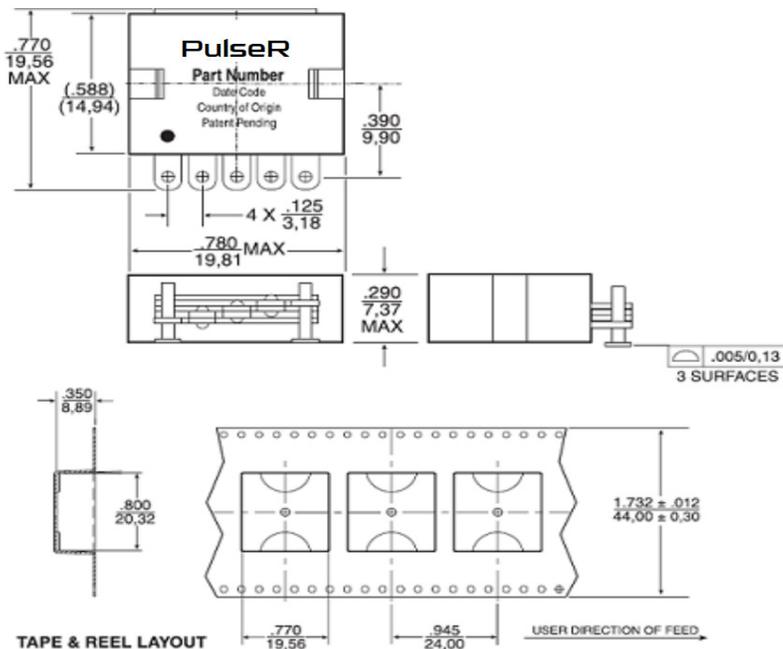
#### Notes:

- The rated current as listed is either 85% of the saturation current or the heating current, depending on which value is lower.
- The saturation current is the current which causes the inductance to drop by 15% at the stated ambient temperatures (25°C and 100°C). This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
- The heating current is the DC current which causes the temperature of the part to increase by approximately 45°C. This current is determined by mounting the component on a PCB with .25" wide, 2 oz. equivalent copper traces, and applying the current to the device for 30 minutes with no forced air cooling.
- In high volt\*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component.
- In order to determine the approximate total losses (or temperature rise) for a given application, the total copper and core losses should be taken into account. For approximate value of core losses, in a given application, use the core loss graph on page 24.
- Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number (i.e. PL2059 becomes PL2059T). Pulse complies to industry standard tape and reel specification EIA481.
- Meets solderability test per IPC/EIA J-STD-002B using flux type ORL0.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

### Mechanical

### Suggested Layouts & Schematics

#### PL2059



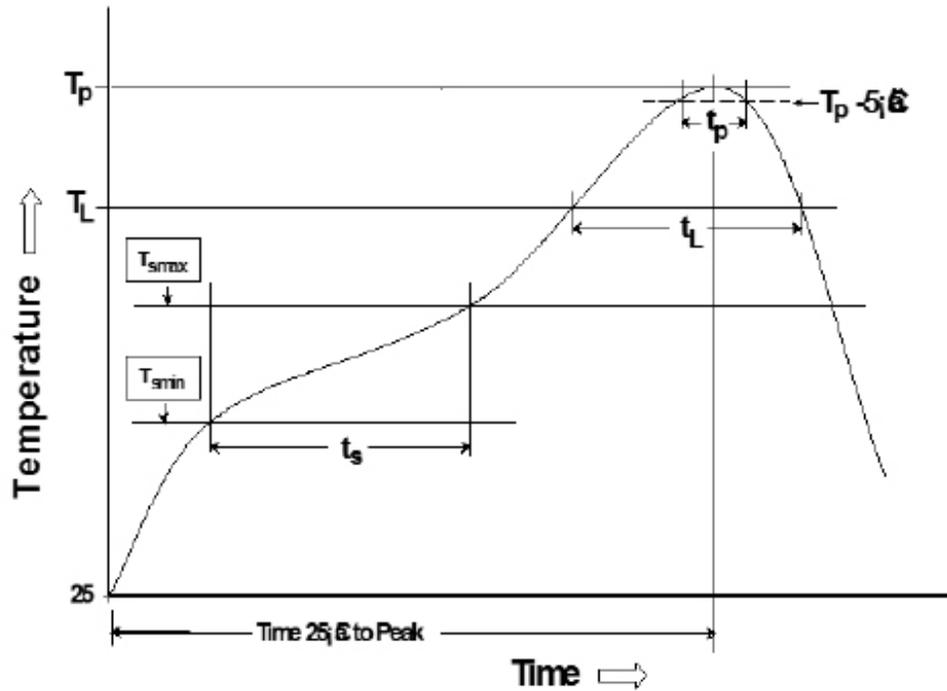
PL2059  
.405 to 1.50 μH  
21 to 73 Adc

Weight.....10.8grams  
Tape&Reel.....250/reel

Dimensions: Inches  
mm

Unless otherwise specified, all tolerances are ±  $\frac{.010}{0,25}$

Transceiver Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)

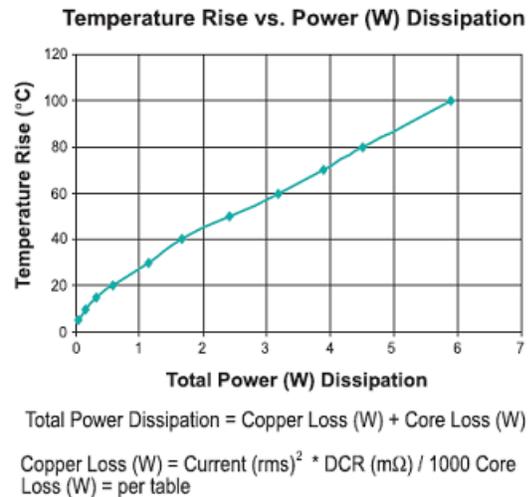
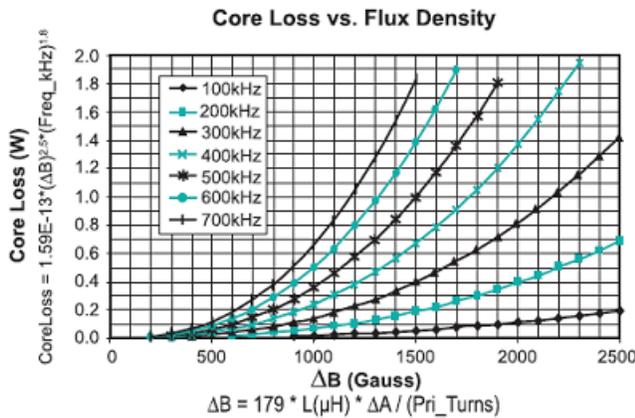
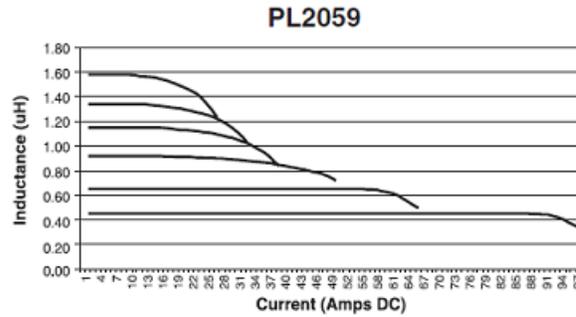


$T_{SMIN}$ (°C)	$T_{SMAX}$ (°C)	$T_L$ (°C)	$T_P$ (°C MAX)	$t_s$ (s)	$t_L$ (s)	$t_p$ (s MAX)	Ramp-up rate ( $T_L$ to $T_P$ )	Ramp-down rate ( $T_P$ to $T_L$ )	Time 25°C to peak temperature (s MAX)
100	150	183	225	60-120	60-150	20	3°C/s MAX	6°C/s MAX	360

Notes:

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2.

Inductance vs. Current Characteristics (25°C)



For More Information

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