High Current Power Inductors

EP21 Inductor - PAL6290XXXNL Series

- *High Current Inductor*
- *3.9uH/48A*
- *75A Saturation Current*
- *22.3 x 16 x 22.3 mm (MAX)*

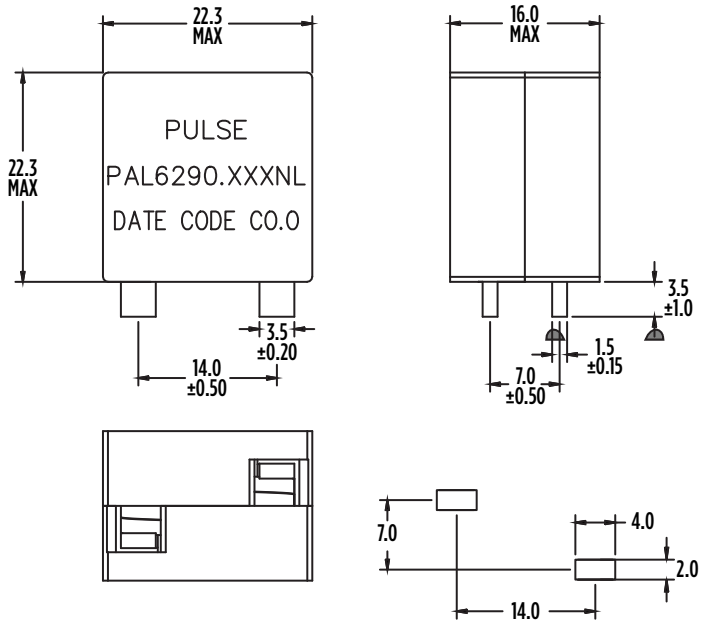
Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C[5]					
Part Number	Inductance[1] @ 0ADC (uH ± 20%)	DCR (mOHMS ±20%)	Irated[2] (ADC)	Saturated Current[3] (A TYP)	
				25°C	100°C
PAL6290.392NL	3.9	0.85	48	75	72

Notes:

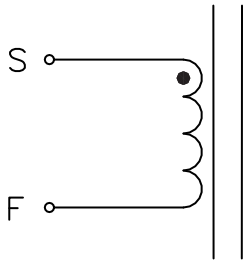
1. Inductance measured at 10kHz, 100mVrms.
2. The heating current is the DC current which causes the part temperature to increase by approximately 40°C when used in a typical application.
3. The saturation current is the typical current which causes the inductance to drop by 20% at the stated ambient temperatures (25°C, 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.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may neccessitate derating the current in order to limit the temperature rise of the component. The core loss curves and temperature rise curves can be used, as following:
   Pcore(W)=1.19E-6 * f^1.27 * (Lp*Ipk)^2.284 (100°C)
   f: working frequency in KHz.
   Lp: inductance in uH
   Ipk: ripple current in A
5. The total core and copper losses and the resultant temperature rise can be estimated using the curve in page 3. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

Mechanical

PAL6290.XXXNL

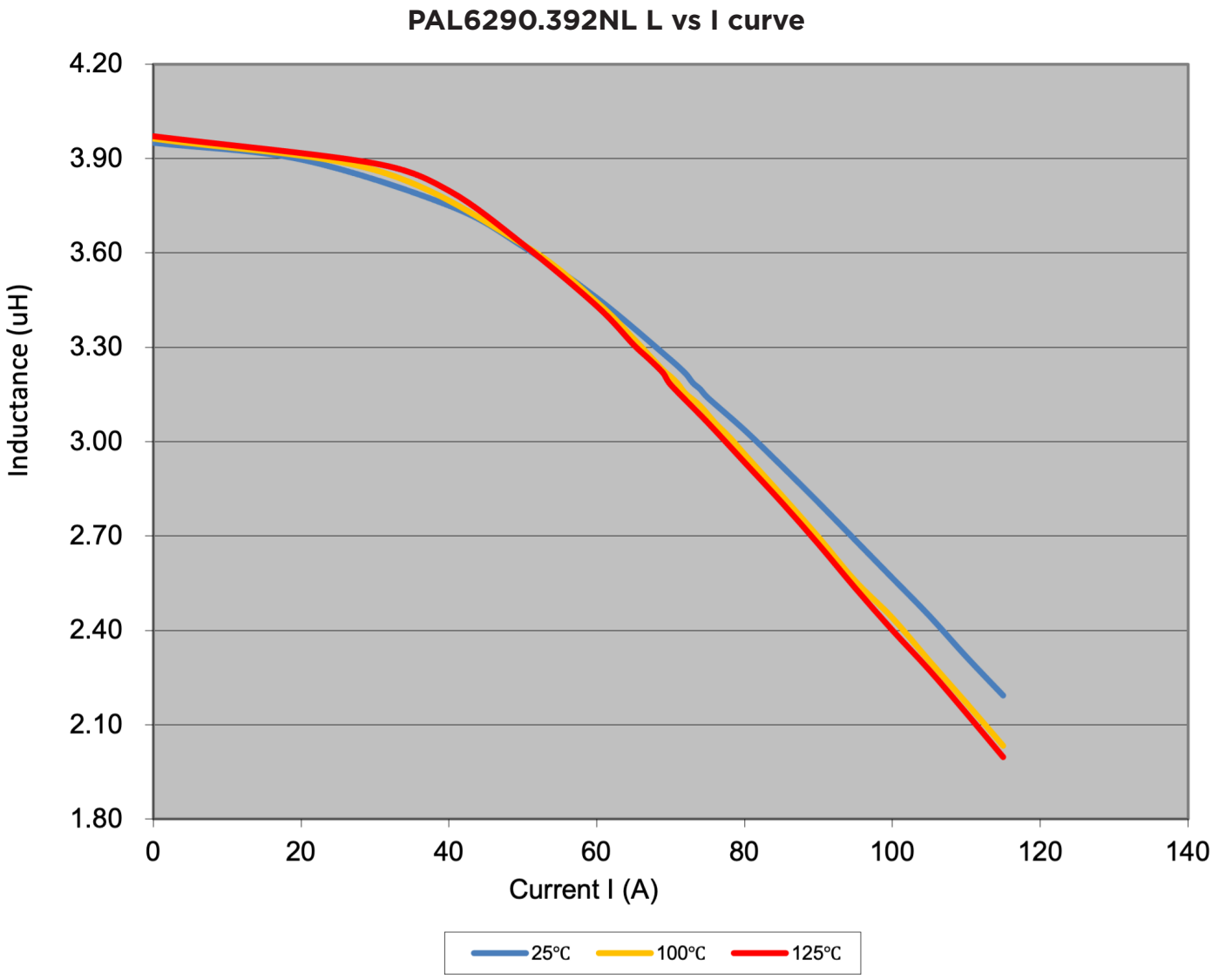


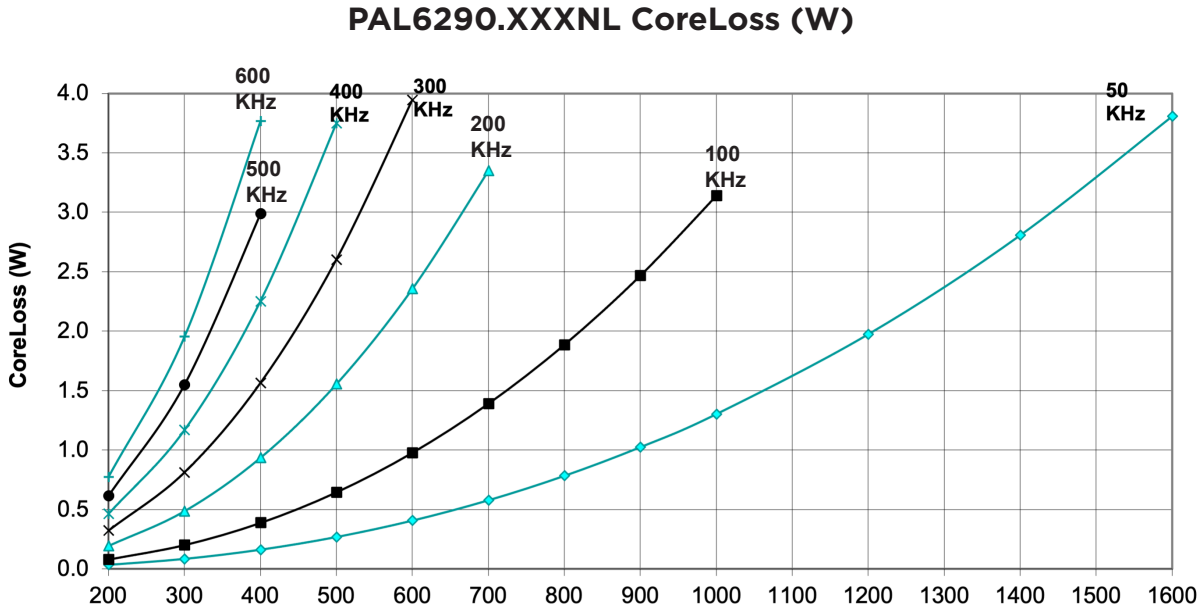
Schematic

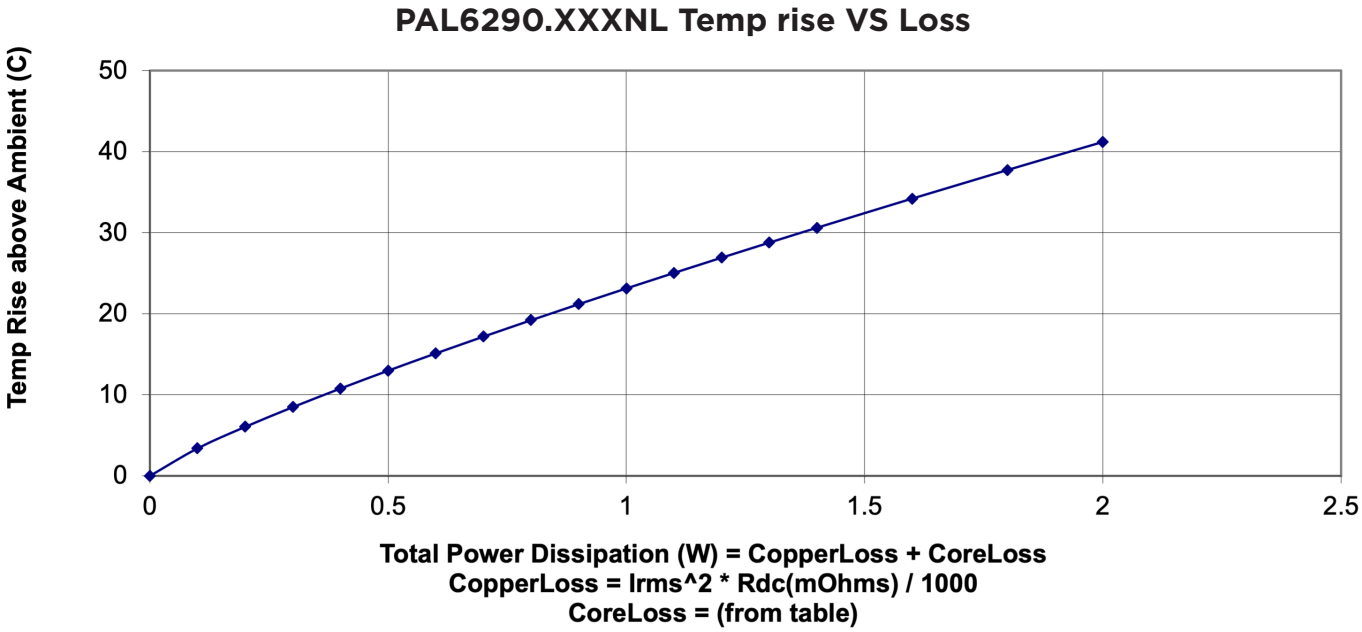


Weight 43.7grams
PAN Size.....70pc/Tray

Dimensions: mm
Unless otherwise specified,
all tolerances are±0.25


PAL6290.392NL L vs I curve
Inductance (uH)
4.20
3.90
3.60
3.30
3.00
2.70
2.40
2.10
1.80
0
20
40
60
80
100
120
140
Current I (A)
25°C
100°C
125°C





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