High Current Power Inductors

EP21 Inductor - PAL6290XXXNL Series





- Ø High Current Inductor
- Ø 3.9uH/48A
- Ø 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 @ 0A₀c (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*lpk)^2.284 (100°C)
- f: working frequency in KHz.
- Lp: inductance in uH
- lpk: 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.

Schematic

PAL6290.XXXNL







1



Mechanical





Weight43.7grams PAN Size......70pc/Trav

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





PAL6290.392NL L vs I curve



PAL6290.XXXNL CoreLoss (W)

PAL6290.XXXNL Temp rise VS Loss



For More Information:

Americas - prodinfo_power_americas@yageo.com | Europe - prodinfo_power_emea@yageo.com | Asia - prodinfo_power_asia@yageo.com

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2023. Pulse Electronics, Inc. All rights reserved.

YAGEO Corporation and its affiliates do not recommend the use of commercial or automotive grade products for high reliability applications or manned space flight.

3

PulseElectronics.com

P945.A (10/23)