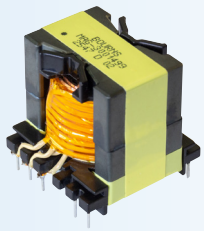
BOURNS®

SAMPLE PRODUCT

MAG-3001499

LLC Transformer



*RoHS COMPLIANT

Features

- Designed for Texas Instruments' PMP41106 and PMP23464 500 W constant current and constant voltage E-bike charger
- Optimized for LLC resonant converter topologies
- Reinforced isolation with 3,500 VAC
- Customized winding structure for efficient power transfer
- Dual-primary and dual-secondary winding configuration
- RoHS compliant*

Applications

- E-bike battery chargers
- Constant-current / constant-voltage battery charging systems
- LLC resonant DC-DC converters
- High-efficiency AC-DC power supplies
- Energy storage charging systems

Sustainability

- Small size reduces material use
- Eco-logistics-friendly packing
- High efficiency, low power loss
- Corrosion-resistant for longevity
- Responsibly sourced and produced
- Meets EU 94/62/EC standards

The information provided in this pre-production sample product data sheet is for reference only and is intended to accelerate initial design and prototyping phases. For a tailored, production-ready solution, contact Bourns for further discussion.

Product Overview

Bourns® Model MAG-3001499 is a custom LLC transformer engineered for 500 W battery charger applications. Originally designed for Texas Instruments' PMP41106 and later utilized in the PMP23464 e-bike charger reference designs, it serves as the main power-transfer element within the LLC resonant converter stage. The optimized winding structure supports efficient energy transfer, low winding losses, and robust isolation performance for universal-input AC power systems. In reference design testing, the transformer demonstrated full-load operating temperatures below 76 °C at a 25 °C ambient condition, supporting reliable operation in demanding battery charging applications.

Custom electrical and mechanical configurations are available upon request.

Electrical Specifications @ 25 °C

Specification	Value
Inductance 3-1	200 µH
Tolerance	±10 %
DCR Max. 3-1 11,12-7,8	 75 mΩ 22 mΩ
Turns Ratio ±5 % 3-2:2-1:9,10-7,8:11,12-9,10	 10 : 10 : 6 : 6
Hi-Pot (5 mA Max.) 3-2,2-1 to Core 3-2/2-1 to 9,10-7,8/11,12-9,10	 500 VAC, 1 sec. 3,500 VAC, 1 sec.

General Specifications

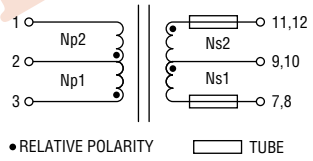
Specification	Value
Operating Temperature (Including Self-Temperature Rise)	-40 °C to +125 °C
Storage Temperature	-25 °C to +85 °C
Moisture Sensitivity Level (MSL)	1
Test Frequency/Voltage	100 kHz / 1 V
Measurement Pins	3-1, 11,12-7,8
Weight per Part (Typical)	76 g

How to Order

MAG-3001499

Model

Electrical Schematic



Materials

Specification	Value
Bobbin	Phenolic
Core	Ferrite
Wire	Copper/Fully Insulated
Terminal Finish	Tin
Glue	Epoxy

Contact Information

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ENGINEERING SAMPLES

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

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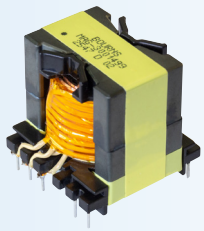

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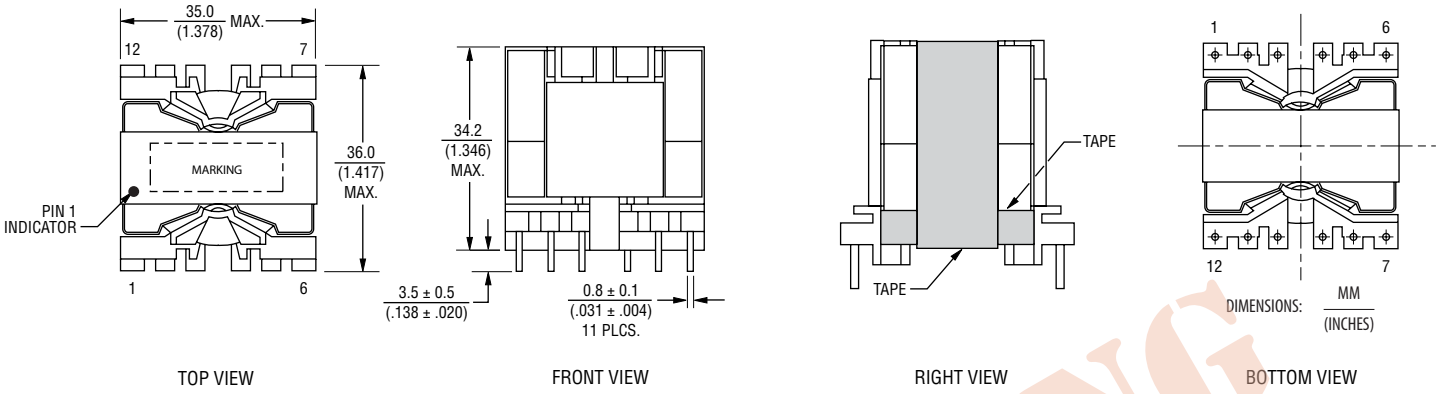
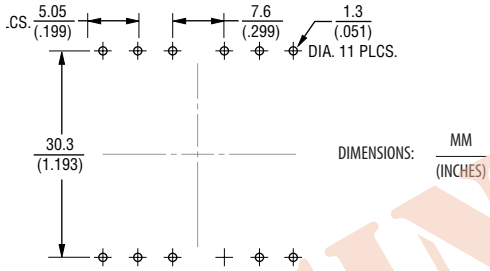
Product Dimensions

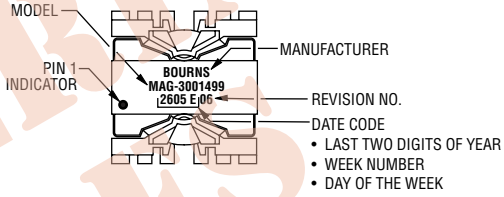


TOP VIEW FRONT VIEW RIGHT VIEW BOTTOM VIEW

Recommended PCB Layout (Top View)

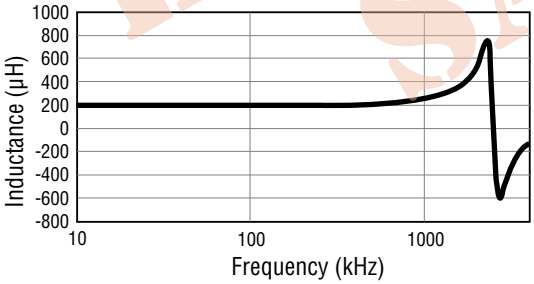


Typical Part Marking



Typical Inductance vs. Frequency Characteristics

Derived under defined electrical specifications. Inductance and Impedance measurements are done in alignment with PMP41106 and PMP23464 reference designs.



Typical Impedance vs. Frequency Characteristics

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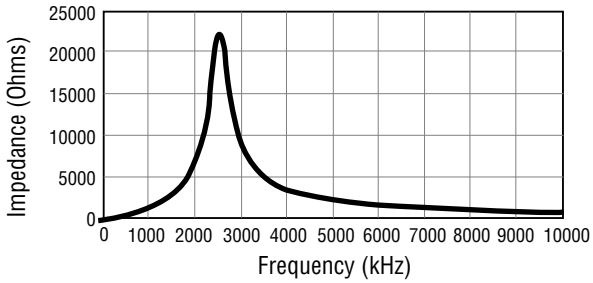

ENGINEERING SAMPLES

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