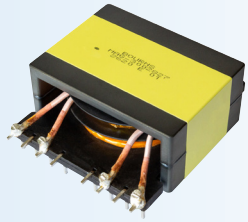
BOURNS®

SAMPLE PRODUCT

MAG-3002827

LLC Transformer



*RoHS COMPLIANT

Features

- Designed for Texas Instruments' TIDA-010933 1.6 kW GaN-based micro-inverter reference design
- High-frequency transformer for isolated CLLLC power conversion
- Through-hole construction
- Supports bidirectional power transfer between the 75 V low-voltage bus and 400 VDC link
- Magnetizing inductance: 6.0 µH ±15 %.
- Low leakage inductance: 900 nH typ.
- RoHS compliant*

Applications

- Microinverters
- Photovoltaic (PV) power conversion systems
- Battery energy storage systems (BESS)
- Bidirectional CLLLC converters
- Isolated DC-DC converters

Sustainability

- High pallet density for lower CO_2 emissions
- Eco-logistics-friendly packing
- Recyclable ESD-safe packaging
- ISO 14001, low-impact energy
- 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® MAG-3002827 LLC Transformer is a high-frequency power transformer designed for the isolated CLLLC stage of Texas Instruments' TIDA-010933 1.6 kW GaN-based bidirectional microinverter reference design. It provides galvanic isolation between the 75 V low-voltage bus and the 400 Vdc link while supporting bidirectional power transfer.

The transformer is designed for fixed-frequency CLLLC operation, with controlled magnetizing and leakage inductance to support resonant operation, high efficiency, high power density, and soft switching in GaN-based power conversion systems.

Custom electrical and mechanical configurations are available upon request.

Electrical Specifications @ 25 °C

Specification	Value
Inductance @ 0 ADC	6.0 µH
Tolerance	±15 %
Leakage Inductance	900 nH typ.
DCR NP Max.	4.2 mΩ
DCR NS Max.	15.0 mΩ
Turns Ratio NPS	0.36 ±5 %
Hi-Pot (1 mA Max.)	
Pri-Sec	1.5 kVac, 60 sec.

General Specifications

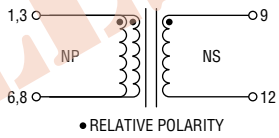
Specification	Value
Operating Temperature (Including Self-Temperature Rise)	-40 °C to +125 °C
Storage Temperature	-25 °C to +85 °C
Moisture Sensitivity Level (MSL)	1
Test Frequency/Voltage	100 kHz / 1 V
Measurement Pins	
NP	1,3-6,8
NS	9-12
Weight per Part (Typical)	333 g

How to Order

MAG-3002827

Model

Electrical Schematic



Materials

Specification	Value
Bobbin	Phenolic
Core	Ferrite
Wire	Enameled Copper
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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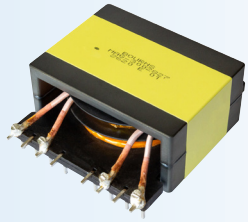
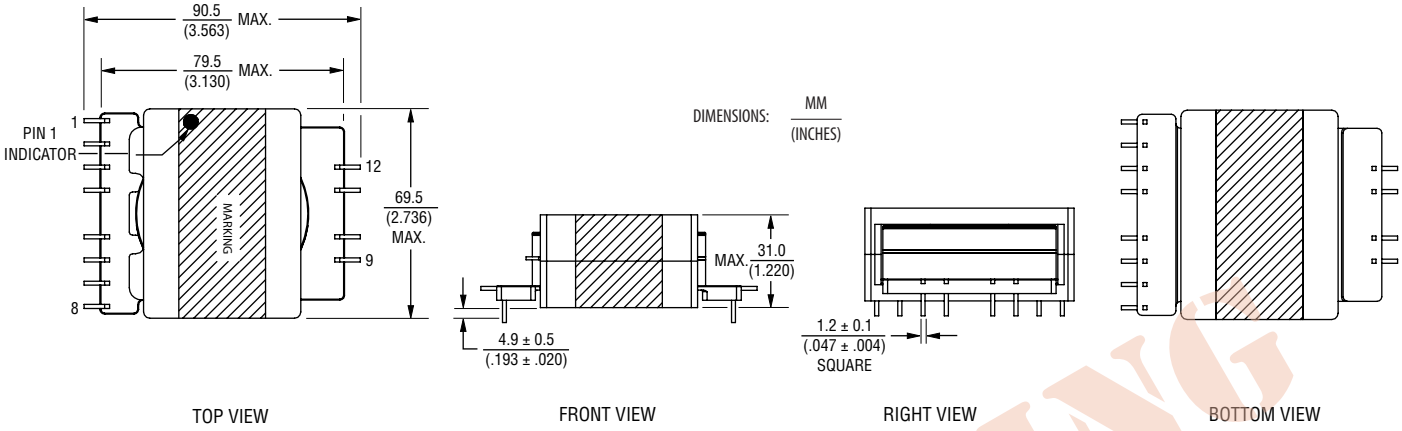
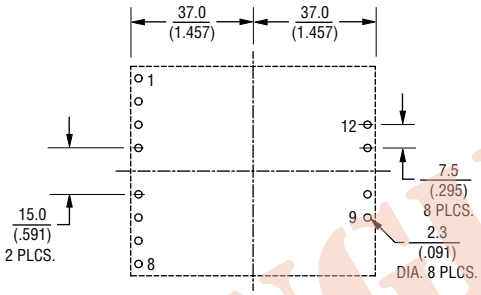


*RoHS COMPLIANT

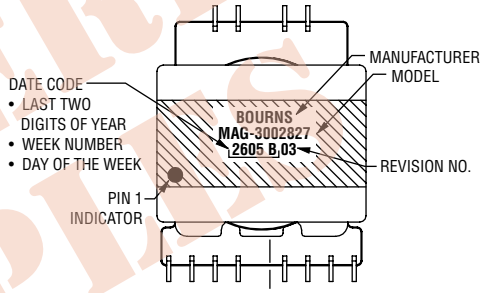
Product Dimensions



Recommended PCB Layout (Top View)

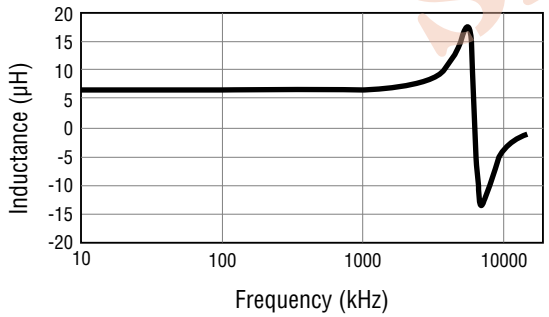


Typical Part Marking



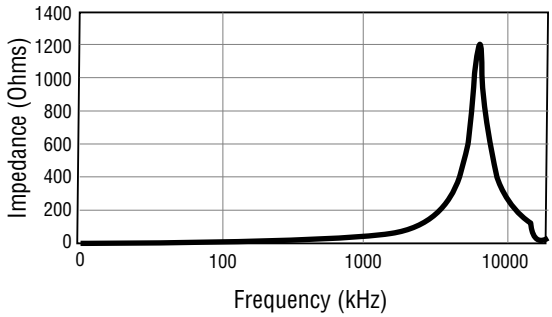
Typical Inductance vs. Frequency Characteristics

Derived under defined electrical specifications. Inductance and Impedance measurements are done in alignment with the TIDA-010933 reference design.



Typical Impedance vs. Frequency Characteristics

Derived under defined electrical specifications. Inductance and Impedance measurements are done in alignment with the TIDA-010933 reference design.



ENGINEERING SAMPLE

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