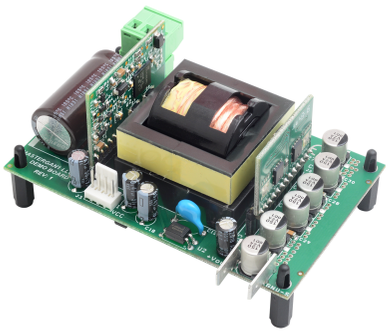
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EVLMG1-250WLLC

Data brief

DC/DC resonant converter for industrial applications using MasterGaN1



Features

- High efficiency and compact solution for DC/DC conversion using MasterGaN1
- Output voltage: 24 V
- Output power up to 250 W
- Nominal Input voltage: 400 V +/- 10%
- Efficiency: >92%
- Outputs protected against short-circuit and overcurrent
- Input voltage monitor for correct sequencing as D2D converter, and brownout protection
- Board size: 100 x 60 (W x H) mm. Maximum components height: 35 mm
- WEEE and RoHS compliant
- Applications: industrial DC-DC applications, adapters, consumer SMPS

Product status link
EVLMG1-250WLLC

Description

This demonstration board is a resonant LLC converter dedicated to any kind of industrial application where minimum size and high efficiency is required, based on MasterGaN1. This device, embedding a couple of GaN power transistors and a driver in the same package, allows to interface directly any kind of SMPS controller. Thanks to the GaN technology and to embedded driver, the converter can be designed with an operating frequency higher than using conventional MOSFETs. Actually, the board has no heatsinks on the primary side and has very reduced dimensions; the power density is 20 W/inch^3. The high efficiency and small size make the board suitable also when available space is limited.

Output power can be up to 250 W at 24 Vdc. Converters come with overcurrent, short-circuit and overvoltage protection. The input voltage monitoring allows the startup with correct sequencing of cascade converters, preventing operation with too low input voltage.

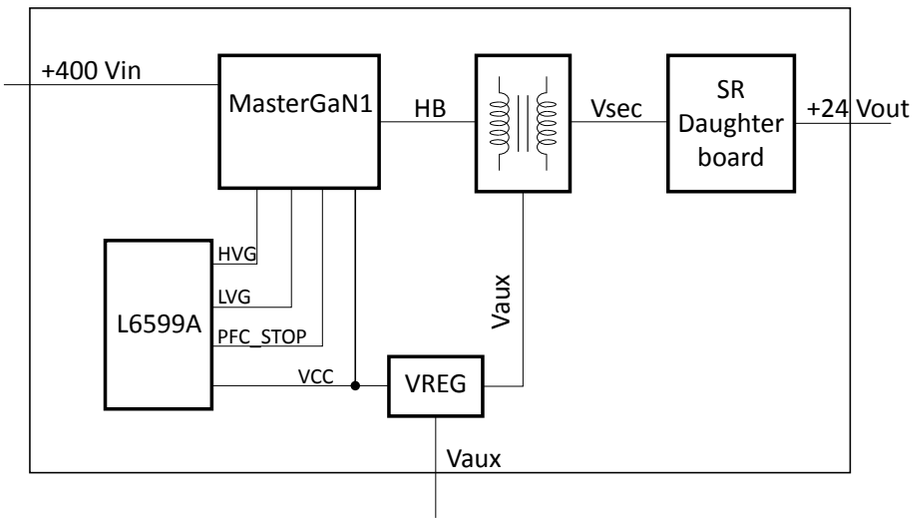
The board is composed of a motherboard with the transformer and the primary controller, and two small daughterboards: one at primary side embeds the MasterGaN1, another on secondary side has the SR controller SRK2001 and the MOSFETs.

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1 Block diagrams and schematic diagrams

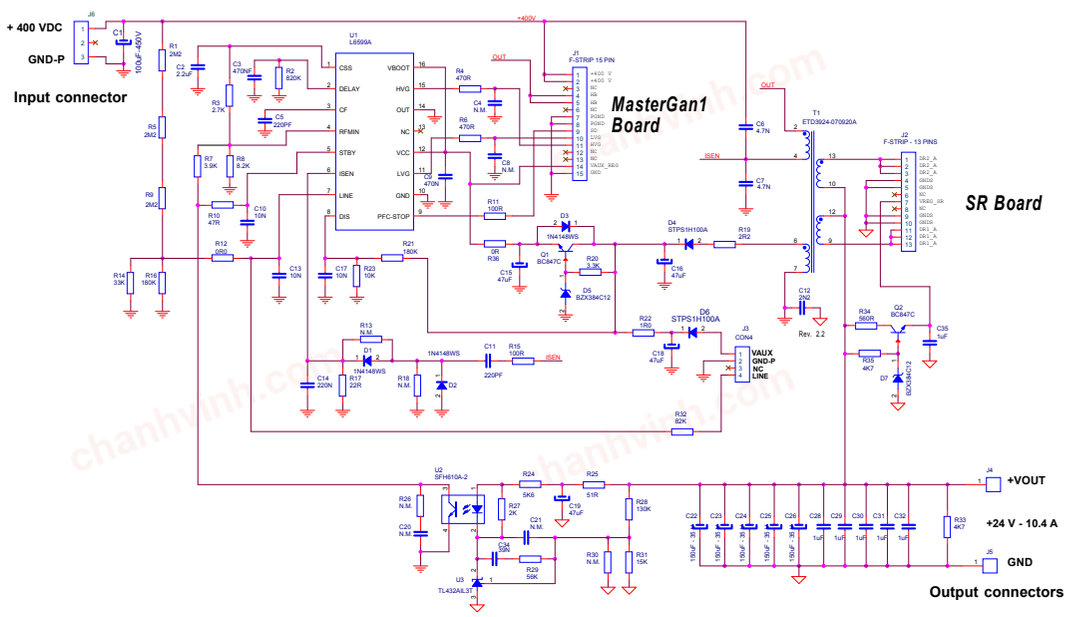
1.1 Block diagrams

Figure 1. Block diagram for high visual impact



1.2 Schematic diagrams

Figure 2. Motherboard schematic



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Figure 3. **MasterGaN1 board schematic**

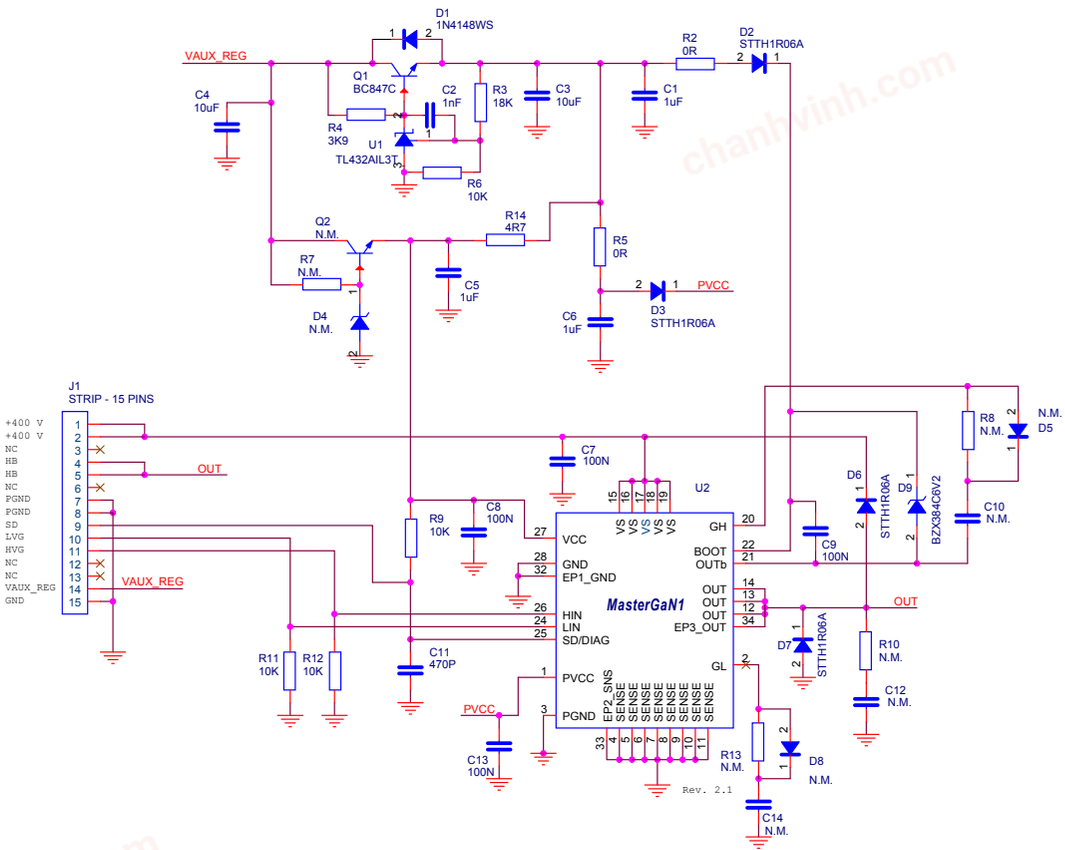
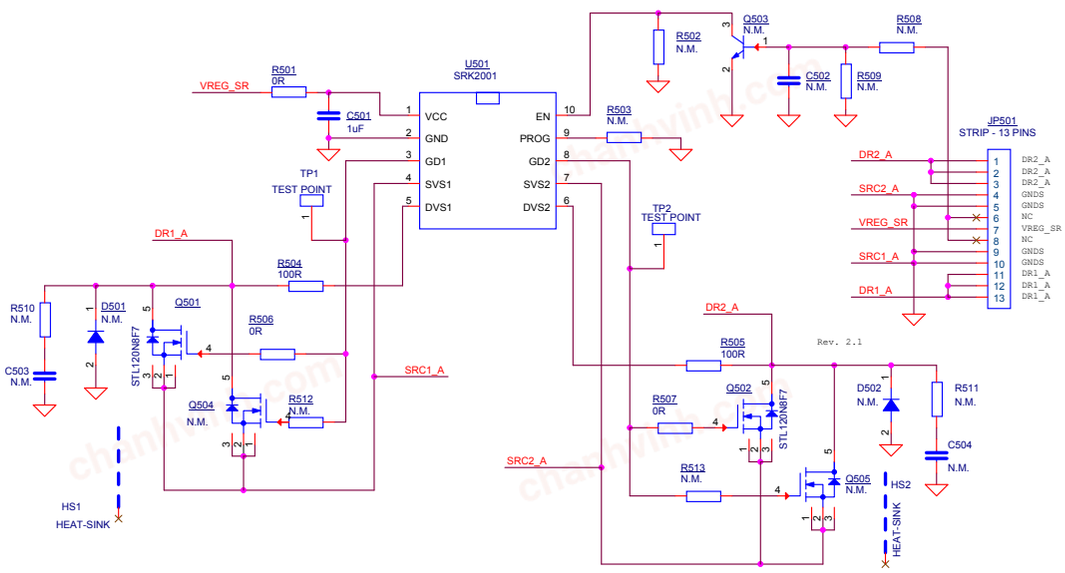


Figure 4. **SR board schematic**



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Revision history

Table 1. **Document revision history**

Date	Version	Changes
1-Feb-2021	1	Initial release.

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