

### Features

- Nominal output voltage: from 8 to 16 V
- Nominal input voltage: 450 V
- Operating input voltage range: from 250 to 480 V
- Nominal power: 1.5 kW
- Switching frequency: 70 kHz
- Galvanic isolation between high voltage and low voltage
- Low voltage-side ground reference: car chassis
- RoHS compliant

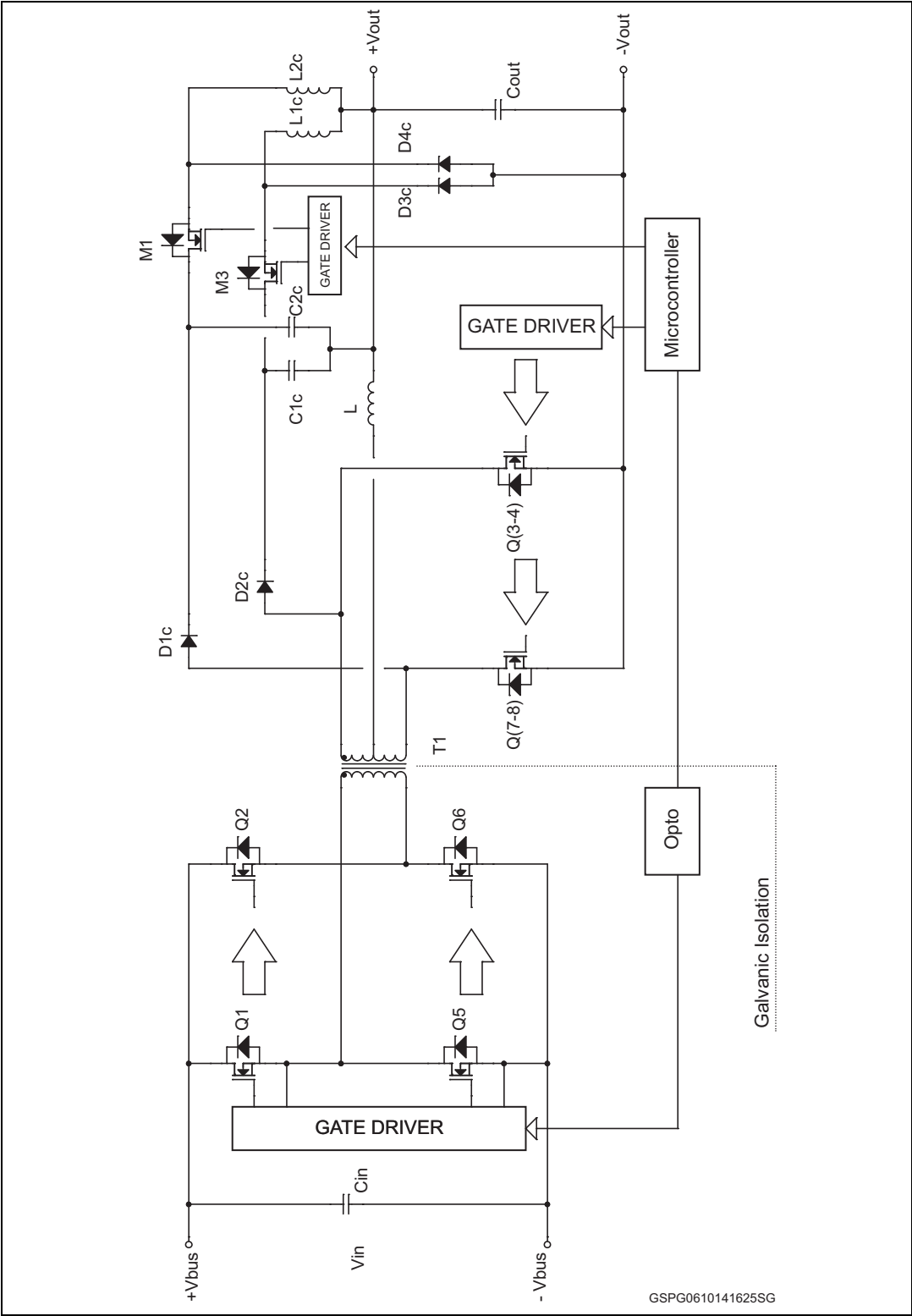
### Description

The STEVAL-ISA157V1 is a DC-DC converter for HEVs (hybrid electric vehicles) intended as an evaluation platform to demonstrate the performance of ST power ICs. It is designed to connect to an auxiliary power converter to interface the 12 V bus and the 250 V - 450 V bus systems on hybrid electric vehicles.

HEVs employ a high-voltage battery pack to supply energy to the traction system for cruising. In conjunction, storage elements such as super capacitors are used to provide and store peak power during acceleration and braking. As a consequence, the new traction and auxiliary power converter features in this application are represented by highly efficient management of the high-voltage DC bus, provided by the battery pack, which can range between 200 V and 800 V based on the power of the electric motor. The conventional 12 V system still exists to feed the typical vehicle electrical loads, while the high voltage bus feeds the traction inverter and motor. In a conventional vehicle, the energy stored in the 12 V auxiliary battery supplies all the electrical loads such as headlights and tail lights, heating fans, audio system, etc., for an appropriate length of time. The total power consumption of these loads is generally higher than 1 kW.

1 Schematic diagram

Figure 1. STEVAL-ISA157V1 circuit schematic



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Oct-2014	1	Initial release.

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