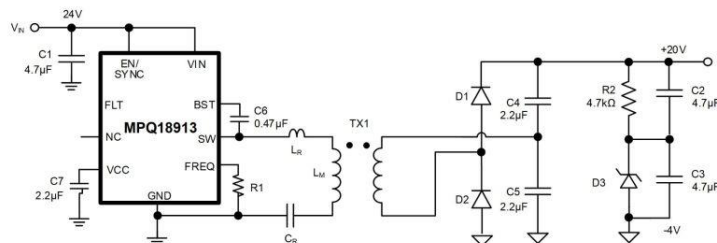


MPQ18913

30V, 0.3A, High-Frequency Transformer Driver for Automotive Applications, AEC-Q100



Description

The MPQ18913 is a high-frequency half-bridge transformer driver. It is ideal for use as the primary-side MOSFET in isolated power supplies for biasing silicon carbide (SiC) field-effect transistors (FETs), silicon FETs, and insulated gate bipolar transistors (IGBTs). The MPQ18913 simplifies an isolated biased supply's design by integrating the control, switching power stage, and protection circuitry in one device. This typology supports designs with a high isolation voltage and small interwinding capacitance.

The MPQ18913 features soft switching and an optional frequency spread spectrum (FSS) to optimize EMI performance. It supports a wide 5V to 30V input voltage (V_{IN}) range, and can survive surges of up to 50V. It also integrates two switching MOSFETs that are rated for 300mA of average input current (I_{IN}).

The device has a wide 400kHz to 5MHz configurable switching frequency (f_{sw}) range, which reduces the solution size and optimizes efficiency in resonant topologies (e.g. LLC converters).

Full safety and protection features include input over-voltage protection (OVP), over-current protection (OCP), and fault indication. The device's built-in soft start (SS) controls the inrush current during start-up.

The MPQ18913 is available in QFN-10 (2mmx2.5mm) package with wettable flanks.

EVQ18913-D-00A

30V, 0.3A, High-Frequency, Automotive Gate Driver Power Supply Evaluation Board, AEC-Q100 Qualified



Description

The EVQ18913-D-00A is an evaluation board designed to demonstrate the capabilities of the MPQ18913, a high-frequency, half-bridge transformer driver that is ideal for primary-side switchers used in isolated power supplies.

The MPQ18913 features an adjustable switching frequency (f_{sw}) with a wide range, which is particularly useful in resonant topologies such as LLC converters. It also offers input over-voltage protection (OVP), over-current protection (OCP), and fault indication. Soft start (SS) is built in to control the inrush current.

The MPQ18913 is available in a QFN-10 (2mmx2.5mm) package with wettable flanks, and is AEC-Q100 Grade 1 qualified. It is recommended to read the MPQ18913 datasheet prior to making any changes to the EVQ18913-D-00A.