

Dual 36V 3A Synchronous Step-down Converter with Quad Constant Current Limited Outputs

DESCRIPTION

The MT3902 is a dual channel high efficiency, high voltage, synchronous step-down DC-DC converters with integrated high-side and low-side switches. The MT3902 employs proprietary constant on-time (COT) control that can support 100% duty cycle for low dropout applications. With 180kHz switching frequency and controlled slew rate on switching node, the MT3902 minimizes EMI emissions and is ideal for automotive applications. The device has a wide input range from 4V to 36V and can deliver two independent outputs ranging from 0.8V to input voltage with up to 3A continuous current simultaneously. Each output has programmable cable drop compensation and can be configured to have one or two ports with individually programmed constant current regulation. The MT3902 comes with complete protection mechanisms including cycle-by-cycle current limit, under-voltage or over-voltage lock out, hiccup mode for short circuit or overload events and over temperature shutdown. The MT3902 is available in 5mmx5mm 20-pin QFN package.

FEATURES

- Wide Input Voltage Range from 4V to 36V
- Supports 100% Duty Cycle Operation
- Simultaneous 3A Output Current per Channel
- Up to 4A Output Current for Each Channel
- Low EMI and Switching Noise
- 180kHz Switching Frequency with Spread Spectrum Modulation
- Two ports per Channel with Independently Programmable Constant Current Regulation
- Programmable Cable Drop Compensation
- Integrated 52mΩ High-side and 42mΩ Low-side Switches
- Internal 3ms Soft Start
- 70ns Minimum On Time
- Short Circuit Protection with Hiccup mode
- Thermal Shutdown with Auto Recovery
- Cycle-by-Cycle current limit
- Available in QFN5x5-20L package

APPLICATIONS

- Dual/Triple/Quad Port Car Charger
- Automotive and Industrial Supplies
- Point of Load

TYPICAL APPLICATIONS

