

36V 5A Synchronous Step-down Converter with Dual-Channel Current Limit

DESCRIPTION

The MT3901 is a high-efficiency, high-voltage, synchronous step-down DC-DC converter with integrated high-side and low-side power MOSFETs. The MT3901 uses proprietary constant on-time (COT) control to provide excellent line and load transient response. The MT3901 features slew rate control and spread spectrum frequency modulation to minimize EMI/EMC emissions. With wide input range from 4V to 36V, the converter can deliver output voltage ranging from 0.8V to  $V_{IN}$  with up to 5A continuous output current. The converter can be configured as single output or dual outputs with independent constant current (CC) regulation for each output. In the event of output overload or short circuit, the converter will be into hiccup mode. Other protection features include cycle-by-cycle current limit, input under and over voltage protection and thermal shutdown. MT3901 also provides programmable cable voltage drop compensation by selecting appropriate external resistor divider. Switching frequency is internally set to 180kHz. The MT3901 is available in SOP8\_EP package.

FEATURES

- Wide input Voltage Range from 4V to 36V
- 100% Duty Cycle Low Dropout Operation
- 70ns Minimum On Time
- Low EMI and Switching Noise
- 180kHz Switching Frequency with Spread Spectrum Modulation
- 5A Continuous Output Current
- Integrated 40mΩ High-side Switch and 40mΩ Low-side Switch
- Dual Outputs with Independent 8% Accurate Constant Current Regulation
- Programmable Output Cable Drop Compensation
- Internal 3ms Soft Start
- Short Circuit Protection with Hiccup mode  
 MT3901N/MT3901U: CC Foldback  
 MT3901X: Disable CC Foldback
- Thermal Shutdown with Auto Recovery
- Cycle-by-Cycle current limit
- Available in SOP8\_EP package

APPLICATIONS

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

TYPICAL APPLICATIONS

