**Features**

- Wide input voltage range 3.8V to 40V
- Defined VIN Reset at typ. 2.85V
- Adjustable output voltage with either 800mV or 200mV internal reference voltage
- Application output currents up to 2A
- Up to >90% efficiency
- Overtemperature protection
- Integrated VIN undervoltage detection with hysteresis
- Precise ON threshold for programmable VIN voltage supervision
- Integrated IDLE detection
- Ultra low IDLE quiescent current of typ. 15μA
- Low sleep current of typ. 10μA
- High-voltage, power-good, open-drain output for over- and undervoltage detection
- Open-load stable regulation and 100% duty cycle capability without external compensation network
- Adaptive operation frequency up to 500kHz

**Applications**

- Battery driven applications
- Simple switched-mode LED controllers
- Always-On supply for μController
- Energy efficient design in automotive environment
- Cascaded power supplies with startup sequencing
- Junction temperature range -40°C to +160°C

**General Description**

E522.10 is a low-cost, easy-to-use step down converter suitable for automotive and industrial/consumer environment (QFN20L4 and SO8EP) at elevated junction temperatures up to +160°C. Overtemperature protection is available for a typical junction temperature of +185°C. It provides resistor programmable output voltage based on internal 800mV reference, also supporting current regulation topologies (e.g. LED drivers) by providing internal 200mV reference. Low current consumption of typ. only 10μA during sleep mode are provided. Integrated light-load detection can automatically switch current consumption to only 15μA with active output regulation. The versatile high-voltage power-good signal provides under- or overvoltage information. Utilizing fast adaptive frequency operation (pulse frequency modulation scheme) from 0Hz up to typ. 500kHz allows best possible line- and load-transient response without the need of external compensation networks. Regulation is open-load stable and allows 100% duty cycle without bootstrap capacitance. Integrated foldback overcurrent protection limits input currents during startup and in case of output short circuit.

**Ordering Information**

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<th>Ordering No.</th>
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**Typical Application Circuit**

Voltage regulator topology

Current regulator topology (e.g. LED driver)