

Features

- Wide input voltage range from 6V to 32V (tran. 42V)
- Fixed frequency Step-Down converter with selectable center frequency 250kHz, 500kHz, 1MHz or 2MHz
- Advanced PWM voltage regulation loop with 100% duty cycle capability
- Fixed 5V±3% USB BUS voltage, with seven programmable negative resistance adjustments
- Programmable USB corresponding output currents of 0.5/1A/1.5A/2.5A with fixed limits or regulation
- ±25% synchronizable to center frequencies
- USB 2.0 high speed compatible data line switches
- Wake-on USB functionality
- Adjustable for SDP or BC1.2 CDP downstream loads and DCP or individual USB chargers
- Full automotive qualification AEC-Q 100

Applications

- Automotive Infotainment and Navigation
- USB-Chargers

General Description

The E522.41 is a USB 2.0 compatible power supply with protection features for the automotive environment. Protection includes ISO7637 pulses on the input, as well as short to battery/ground and 2kV ESD (HBM) on the USB bus and data lines.

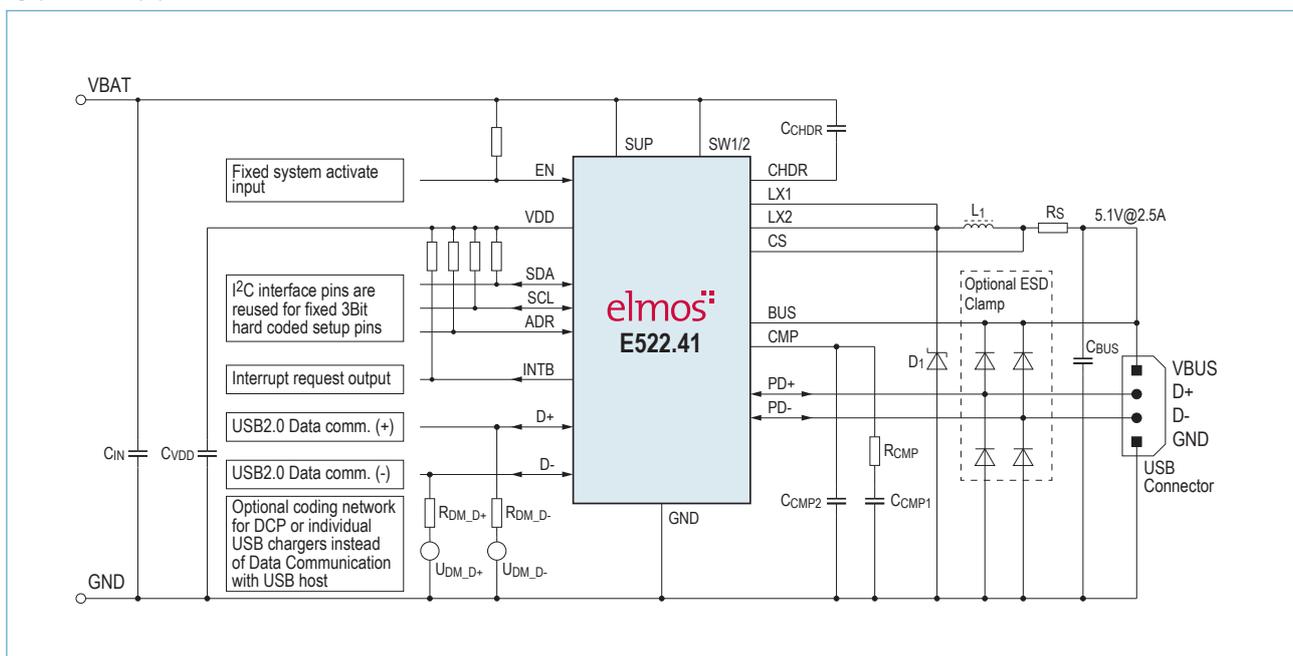
An I²C interface allows system setup and diagnostics in real time via external microprocessor. Three different I²C bus system addresses are decoded by pin ADR. An internal Switch-Mode Power Supply (SMPS) provides efficient USB 5V supply from either vehicle battery or a lower voltage bus rail. Selectable soft power-up sequence protects the external parts from overload and reduces inrush currents. The switching frequency can be synchronized in Master-Slave configurations with other devices via PLL input. In addition the switchable spread spectrum option reduces EMI.

The E522.41 supports USB charging downstream loads according to the Battery Charging Specification Revision 1.2 and various other specific USB charger emulations.

Ordering Information

Ordering No.:	Temp Range _{AMB}	Package
E52241B62C	-40°C to +105°C	QFN20L5

Typical Application Circuit



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