

USB83340



Hi-Speed USB 2.0 Transceiver for Automotive Applications

Features

- TrueAuto™ grade
 - Specifically designed, fabricated, tested, characterized and qualified for automotive applications
 - Service and support
- USB-IF Battery Charging 1.1 Specification-compliant
- Link Power Management (LPM)-compliant
- Integrated ESD protection circuitry
- Integrated USB switch
 - Nearly complete elimination of Hi-Speed electrical degradation
 - Allows single USB port of connection by providing switching for:
 - Battery charging
 - Stereo and mono/mic audio
 - USB Full-Speed/Low-Speed data
- flexPWR® technology
 - Sleep mode tri-states all ULPI pins and places the part in a low current state
 - 1.8 V to 3.3 V I/O voltage
- PHYBoost
 - Programmable USB transceiver drive strength for recovering signal integrity
- VariSense™ technology
 - Programmable USB receiver sensitivity
- External reference clock operation available
 - ULPI clock IN mode (60 MHz sourced by link)
 - 0 to 3.6 V input drive tolerant
 - Able to accept noisy clock sources as reference to internal, low-jitter PLL
 - Supports multiple frequencies
 - Crystal/resonator support
- Smart detection circuits allow identification of USB charger, headset or data cable insertion
- UART mode for non-USB serial data transfers
- Internal 5.0 V cable short-circuit protection of ID, DP and DM lines to VBus® or ground
- 32-pin (5 x 5 mm) QFN lead-free, RoHS-compliant package
- Automotive operating temperature range: -40 °C to +105 °C



Ordering Information

The USB83340 is available as:

USB83340 Tray

Order No. B10269

USB83340 Tape & Reel

Order No. B10268

Applications

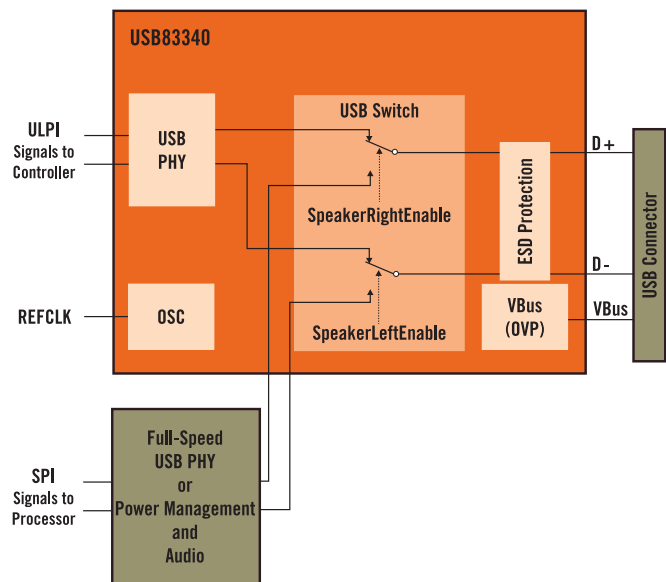
- In-vehicle USB Host implementations
- Infotainment test interface
- Automotive head unit
- Portable device charging via USB
- Rear seat infotainment access
- Internal connectivity bus
- Isolate high-value SoCs from outside

Description

Several advanced features set apart SMSC's USB83340 Hi-Speed USB 2.0 transceiver for automotive applications. Outstanding ESD robustness eliminates the need for external ESD protection devices. An internal Over-Voltage Protection circuit (OVP) protects the USB83340 from voltages up to 30.0 V on the VBus pin. The frequency of the reference clock is user-selectable to allow one part to fit multiple applications.

The USB83340 is optimized for use in applications where a low operating current and standby currents are essential. The device integrates 3.3 V and 1.8 V regulators, making it possible to operate the device from a single power supply. The USB83340 uses SMSC's wrapper-less technology to implement the ULPI interface; allowing the PHY to achieve low-latency receiving and transmitting.

Application Example



TrueAuto

TrueAuto is SMSC's automotive quality process. It has proven its ability to deliver leading-edge quality and services for IC device products to fulfill the needs of the most demanding automotive customers. TrueAuto is a proven total automotive-grade quality approach. TrueAuto IC device robustness begins with SMSC's design for reliability techniques within the silicon IC itself: automotive-grade robustness and testability are designed into the IC. Once available in silicon, the IC is fully-characterized and qualified over a multitude of operating parameters to prove quality under the harshest conditions. In this, SMSC's TrueAuto approach significantly exceeds the usual automotive reliability standards and customer-specific requirements and goes far beyond the stress tests prescribed by the AEC-Q100 specifications. During the fabrication of TrueAuto products, extensive technologies and processes, such as enhanced monitors are used in order to continuously drive improvements in accordance with SMSC's zero Defects per Million (DPM) goals.

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