

PI5USB2546

USB Charging Port Controller and Load Detection Power Switch

Description

The PI5USB2546 is a USB charging port controller and power switch with an integrated USB 2.0 high-speed data line (D+/D-) switch. PI5USB2546 provides the electrical signatures on D+/D- to support charging schemes listed under device feature section. This part is compatible with both popular BC1.2 compliant and non-BC1.2 compliant devices.

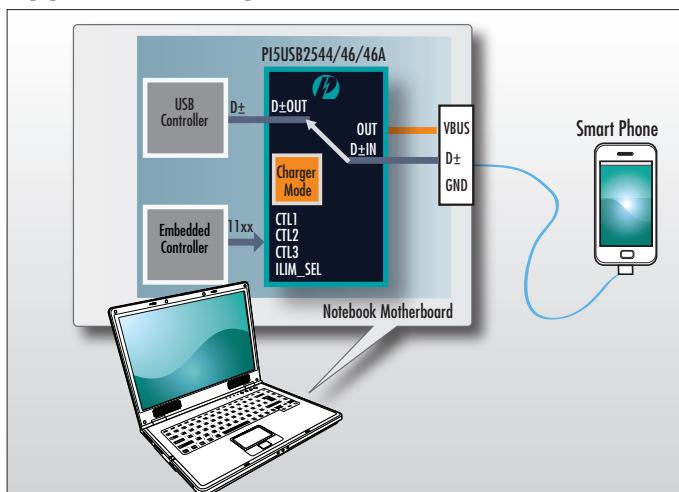
System wake up (from S3) with a mouse/keyboard (both low speed and full speed) is fully supported in the PI5USB2546. Additionally, PI5USB2546 supports two distinct power management features, namely, power wake and port power management (PPM) through /STATUS pin. Power wake allows for power supply control in S4/S5 charging and PPM manages port power in a multi-port application.

The PI5USB2546 73-m Ω power-distribution switch is intended for applications where heavy capacitive loads and short-circuits are likely to be encountered. Two programmable current thresholds provide flexibility for setting current limits and load detect thresholds

Applications

- USB Ports (Host and Hubs)
- Notebook and Desktop PCs
- Universal Wall Charging Adapters

Application Diagram



Features

- Supports CDP/DCP Modes per USB Battery Charging Specification 1.2
- Supports Shorted Mode per Chinese Telecommunication Industry Standard YD/T1591-2009
- Supports non-BC1.2 Charging Modes by Automatic Selection
 - Divider-1A mode
 - Divider-2A mode
 - DCP-1.2V mode
- Supports Sleep-Mode Charging and Mouse/Keyboard Wake up
- Automatic SDP/CDP Switching for Devices that do not request for the CDP Ports
- Load Detection for Power Supply Control in S4/S5 Charging and Port Power Management in all Charge Modes
- Compatible with USB 2.0/3.0 Power Switch requirements
- Integrated 73-m Ω (Typ.) High-Side MOSFET
- Adjustable Current-Limit up to 3A(Typ.)
- Operating Range: 4.5V to 5.5V
- Max Device Current
 - 2 μ A at Device Disabled
 - 270 μ A at Device Enabled
- Device Package: TQFN 3.0x3.0-16L
- UL Listed and CB File No. E341484