PERICOM®

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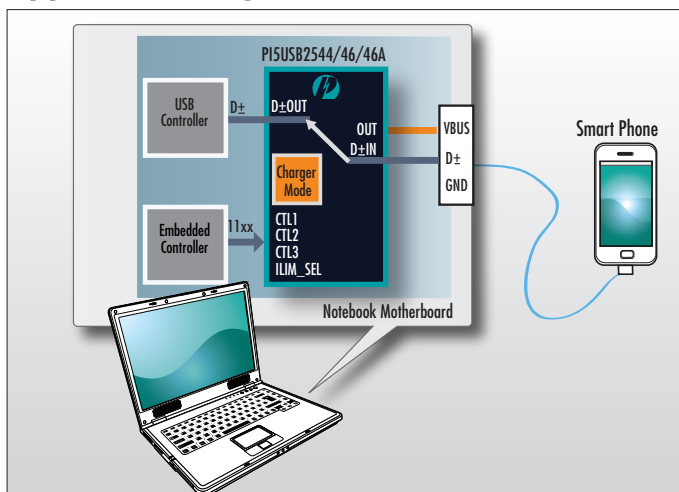
System wake up (from S3) with a mouse/keyboard (both low speed and full speed) is fully supported in the PI5USB2546. Additionally, PI5USB2546 supports two distinct power management features, namely, power wake and port power management (PPM) through /STATUS pin. Power wake allows for power supply control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

The PI5USB2546 73-mΩ 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-mΩ (Typ.) High-Side MOSFET

➔ Adjustable Current-Limit up to 3A(Typ.)

➔ Operating Range:4.5V to 5.5V

➔ Max Device Current
  • $2\mu A$ at Device Disabled
  • $270\mu A$ at Device Enabled

➔ Device Package: TQFN 3.0x3.0-16L

➔ UL Listed and CB File No. E341484

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