

PI5USB2546H

USB Charging Port Controller and Load Detection Power Switch

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
- 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
 - 2μA at Device Disabled
 - 270μA at Device Enabled
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. “Green” Device (Note 3)
- UL Listed and CB File No. E340734
- Device Package:
 - 16-pin, ZHD (UQFN)
 - 16-pin, ZH (TQFN)

Description

The PI5USB2546H is a USB charging port controller and power switch with an integrated USB 2.0 high-speed data line (D+/D-) switch. PI5USB2546H provides the electrical signatures on D+/D- to support charging schemes listed under device feature section. This series 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 PI5USB2546H. Additionally, PI5USB2546H 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 PI5USB2546H 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

Ordering Information

Part Number	Package	Description
PI5USB2546HZHDEX	ZHD	16-pin, 3x3 (UQFN)
PI5USB2546HZHEX	ZH	16-Contact, Thin Fine Pitch Quad Flat No-Lead (TQFN)

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated’s definitions of Halogen- and Antimony-free, “Green” and Lead-free.
3. Halogen- and Antimony-free “Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. E = Pb-free and Green
5. X suffix = Tape/Reel