

MAX14746/MAX14747

USB Detection with Smart Power Selector Li+ Chargers

General Description

The MAX14746/MAX14747 are a series of USB charger detectors with an integrated Smart Power Selector™ linear charger solutions that provide a single-chip solution for charging and charger detection.

The MAX14746/MAX14747 charger detectors are compliant to USB Battery Charger Detection Rev 1.2* and capable of detecting multiple USB battery-charging methods, including Standard Downstream Ports (SDP), Charging Downstream Ports (CDP), and Dedicated Charger Ports (DCP). The devices also detect common proprietary charge adapters, including those from Apple.

The MAX14746/MAX14747 battery chargers feature Smart Power Selector operation, allowing operation with dead or no battery present. The devices limit USB V_{BUS} current based on the detect charger source type. If the charger power source is unable to supply the entire system load, the smart-power control circuit supplements the system load with current from the battery.

The devices protect against overvoltage faults up to 28V.

This series of USB charger detectors are available with several options, with slight variations in, for example, power-up states. These variations are noted throughout this data sheet.

There are five options available, with slight variations in, for example, power-up states (see [Ordering Information](#)). The devices are available in a 25-ball, 0.4mm pitch wafer-level package (WLP), and are specified over the -40°C to +85°C extended temperature range.

Applications

- Portable Consumer Devices
- Portable Digital Cameras
- Portable Digital Video Cameras
- Portable Industrial Devices

**Except DCD timeout extended from 900ms to 2s for the MAX14746/MAX14747.*

Smart Power Selector™ is a trademark of Maxim Integrated Products, Inc.

Benefits and Features

- Flexible System Design to Operate with Any USB Charger Source
 - Compliant to USB Battery Charger Rev 1.2 Specification*
 - Supports Proprietary USB Charging Sources, Including Apple
 - D+/D- Bias Voltage Supported
- Easy to Implement Li+ Battery Charging
 - Smart Power Selector
 - Fully Compliant with Dead Battery/Weak Battery Charging According to USB 2.0 Specification
 - JEITA Charge Protection
 - Thermal Protection
 - Internal USB D+/D- Switch to Manage Connection
- Integrates High Level of Protection
 - 28V Tolerant Input on VB
 - ±15kV Human Body Model ESD Protection on CDP and CDN

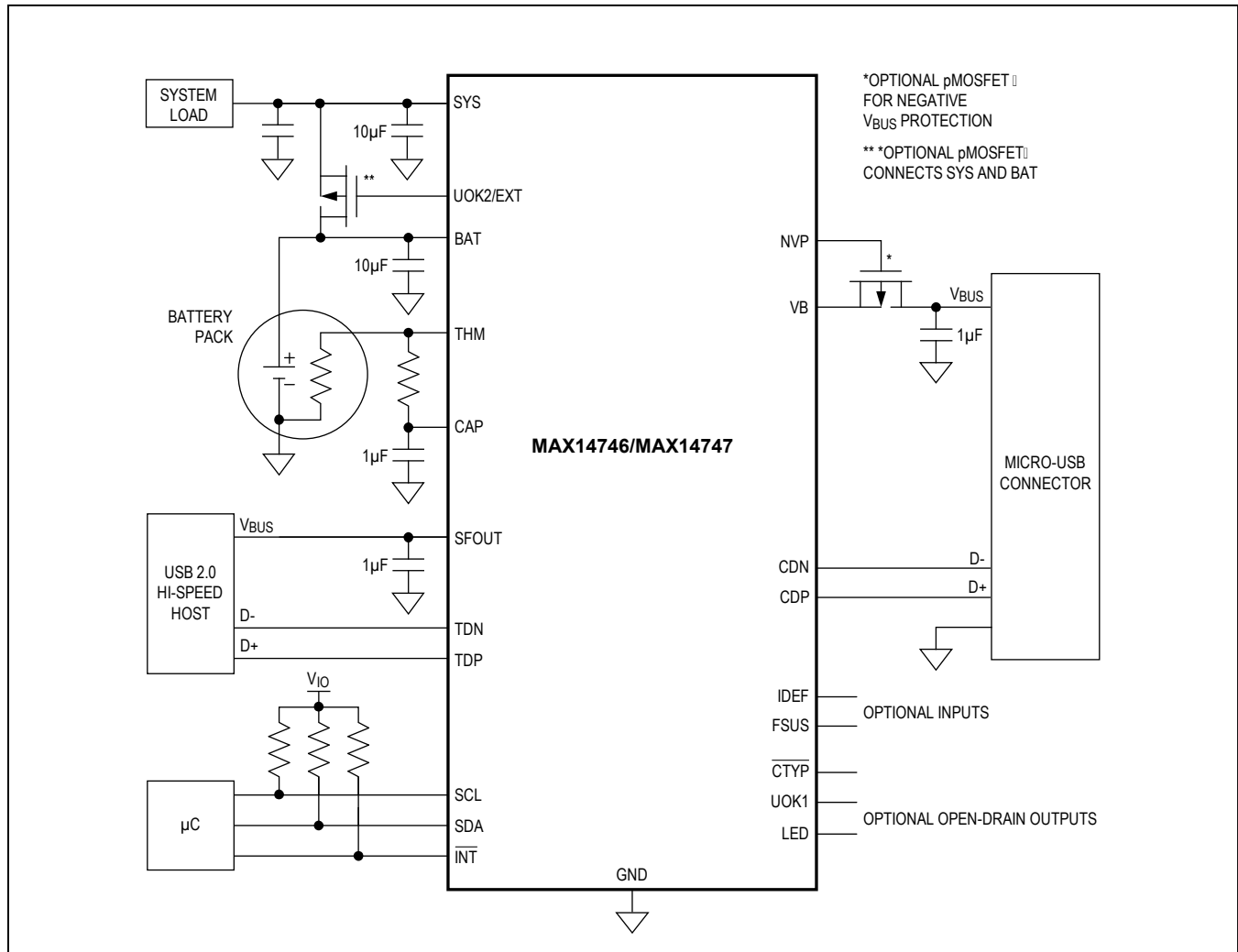
Ordering Information appears at end of data sheet.

ABRIDGED DATA SHEET

MAX14746/MAX14747

USB Detection with Smart Power
Selector Li+ Chargers

Typical Operating Circuit



Ordering Information

PART	TEMP RANGE	BUMP-PACKAGE
MAX14746BEWA+	-40°C to +85°C	25 WLP
MAX14747EWA+*	-40°C to +85°C	25 WLP

+Denotes a lead (Pb)-free/RoHS-compliant package.

*Future product—Contact factory for availability.

Chip Information

PROCESS: BiCMOS

Package Information

For the latest package outline information and land patterns (footprints), go to www.maximintegrated.com/packages. Note that a "+", "#", or "-" in the package code indicates RoHS status only. Package drawings may show a different suffix character, but the drawing pertains to the package regardless of RoHS status.

PACKAGE TYPE	PACKAGE CODE	OUTLINE NO.	LAND PATTERN NO.
25 WLP	W252J2+1	21-0453	Refer to Application Note 1891

ABRIDGED DATA SHEET

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USB Detection with Smart Power
Selector Li+ Chargers

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	11/15	Initial release	—

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

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