## **Order Numbers:**

ORDER NUMBER	PACKAGE TYPE	PACKAGE SIZE
USB3750A-1-A4-TR (see Note 1)		
USB3751A-1-A4-TR (see Note 2)	16 pin, QFN lead-free RoHS compliant package	3.0mm x 3.0mm
USB3751A-2-A4-TR (see Note 3)		

- Note 1 Provides HS mux and support for 100mA dead battery current limiting.
- Note 2 Provides support for 100mA dead battery current limiting.
- Note 3 Does not provide support for 100mA dead battery current limiting.

This product meets the halogen maximum concentration values per IEC61249-2-21 For RoHS compliance and environmental information, please visit www.smsc.com/rohs

Copyright © 2013 SMSC or its subsidiaries. All rights reserved.

Circuit diagrams and other information relating to SMSC products are included as a means of illustrating typical applications. Consequently, complete information sufficient for construction purposes is not necessarily given. Although the information has been checked and is believed to be accurate, no responsibility is assumed for inaccuracies. SMSC reserves the right to make changes to specifications and product descriptions at any time without notice. Contact your local SMSC sales office to obtain the latest specifications before placing your product order. The provision of this information does not convey to the purchaser of the described semiconductor devices any licenses under any patent rights or other intellectual property rights of SMSC or others. All sales are expressly conditional on your agreement to the terms and conditions of the most recently dated version of SMSC's standard Terms of Sale Agreement dated before the date of your order (the "Terms of Sale Agreement"). The product may contain design defects or errors known as anomalies which may cause the product's functions to deviate from published specifications. Anomaly sheets are available upon request. SMSC products are not designed, intended, authorized or warranted for use in any life support or other application where product failure could cause or contribute to personal injury or severe property damage. Any and all such uses without prior written approval of an Officer of SMSC and further testing and/or modification will be fully at the risk of the customer. Copies of this document or other SMSC literature, as well as the Terms of Sale Agreement, may be obtained by visiting SMSC's website at http://www.smsc.com. SMSC is a registered trademark of Standard Microsystems Corporation ("SMSC"). Product names and company names are the trademarks of their respective holders.

The Microchip name and logo, and the Microchip logo are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SMSC DISCLAIMS AND EXCLUDES ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND AGAINST INFRINGEMENT AND THE LIKE, AND ANY AND ALL WARRANTIES ARISING FROM ANY COURSE OF DEALING OR USAGE OF TRADE. IN NO EVENT SHALL SMSC BE LIABLE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES; OR FOR LOST DATA, PROFITS, SAVINGS OR REVENUES OF ANY KIND; REGARDLESS OF THE FORM OF ACTION, WHETHER BASED ON CONTRACT; TORT; NEGLIGENCE OF SMSC OR OTHERS; STRICT LIABILITY; BREACH OF WARRANTY; OR OTHERWISE; WHETHER OR NOT ANY REMEDY OF BUYER IS HELD TO HAVE FAILED OF ITS ESSENTIAL PURPOSE, AND WHETHER OR NOT SMSC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## **General Description**

The USB375x integrates many features that have historically been discrete devices in a mobile product. This device provides significant VBUS protection for the entire system, robust USB interface ESD protection, a USB 2.0 compliant High Speed switch, and USB-IF Battery Charger Detection (revision 1.1) capabilities that are essential to the latest mobile products.

Several advanced features allow the USB375x to be optimized for portable applications and to reduce both eBOM part count and printed circuit board (PCB) area. Outstanding ESD robustness eliminates the need for external ESD protection devices.

In addition to the integrated ESD protection on the USB interface, the USB375x provides VBUS Over-Voltage Protection (OVP).

The USB375x integrated battery charger detection circuitry supports USB-IF Battery Charger Detection. Battery charger detection will begin automatically whenever VBUS rises above the UVLO threshold, and can also be completed manually through the I<sup>2</sup>C interface. The USB375x can detect a range of USB battery chargers including a Standard Downstream Port (SDP), a Charging Downstream Port (CDP), and a Dedicated Charging Port (DCP). For more information on USB battery charger detection, please see the USB Battery Charging Specification, Revision 1.1.

The  $I^2C$  interface gives processor control over the USB Switch, charger detection, OVLO settings, and status of the USB375x. In addition, custom charger detection can be implemented through the  $I^2C$  interface.

The USB375x family is enabled with SMSC's RapidCharge Anywhere<sup>TM</sup> which supports USB-IF Battery Charging 1.1 for any portable device. RapidCharge Anywhere<sup>TM</sup> provides three times the charging current through a USB port over traditional solutions which translate up to 1.5Amps via compatible USB host or dedicated charger. In addition, this provides a complete USB charging ecosystem between device and host ports such as Dedicated Charging Port (DCP), Charging (CDP) and Standard (SDP) Downstream Ports.

## **Package Outline**

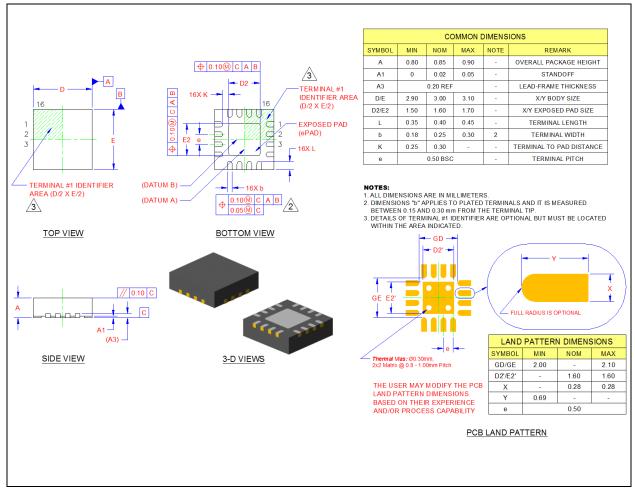


Figure 1 16-Pin, 3.0mm x 3.0mm QFN Package Outline