USB2412

2-Port USB 2.0 Hi-Speed Hub Controller

PRODUCT FEATURES

Data Brief

General Description

The SMSC USB2412 hub is a low-power, single transaction translator (STT) hub controller IC with two downstream ports for embedded USB applications. The SMSC hub controller supports low-speed, full-speed, and hi-speed (if operating as a hi-speed hub) downstream devices on all of the enabled downstream ports.

Features

- Fully integrated USB termination and pull-up/pull-down resistors
- Supports a single external 3.3 V supply source; internal regulators provide 1.2 V internal core voltage
- On-chip 24 MHz crystal and ceramic resonator driver or external 24 MHz clock input
- ESD protection up to 4 kilovolts on all USB pins
- Supports self-powered operation
- Contains a built-in default configuration; no external configuration options or components are required
- Downstream ports as optional non-removable ports
- Supports compound devices on a port-by-port basis
- 28-pin QFN (5 x 5 mm) lead-free RoHS compliant package
- Supports the commercial temperature range: 0ºC to +70ºC

Highlights

- High performance, low-power, small footprint hub controller IC with two downstream ports
- Fully compliant with the USB 2.0 specification
- 28QFN low pin count package
- Optimized for minimal bill-of-materials and low cost designs

Applications

- Automobile/home audio systems
- Cable/DSL modems
- Embedded systems
- Gaming consoles
- HDD enclosures
- IP telephony
- KVM switches
- LCD monitors and TVs
- Multi-function USB peripherals
- Mobile PC docking
- PC motherboards
- PC media drive bay
- Portable hub boxes
- Point-of-Sale (POS) systems
- Printers and scanners
- Server front panels
- Set-top boxes, DVD players, DVR/PVR
- Thin client terminals

PRODUCT PREVIEW

Order Number(s):

ORDER NUMBERS	PACKAGE TYPE	PACKAGE SIZE	REEL SIZE
USB2412-DZK	28-Pin QFN Lead-Free, RoHS Compliant Package (includes tape and reel option)	5 x 5 x 0.5 mm	-
USB2412-DZK-TR			

This product meets the halogen maximum concentration values per IEC61249-2-21

For RoHS compliance and environmental information, please visit www.smsc.com/rohs

80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000 or 1 (800) 443-SEMI

Block Diagram

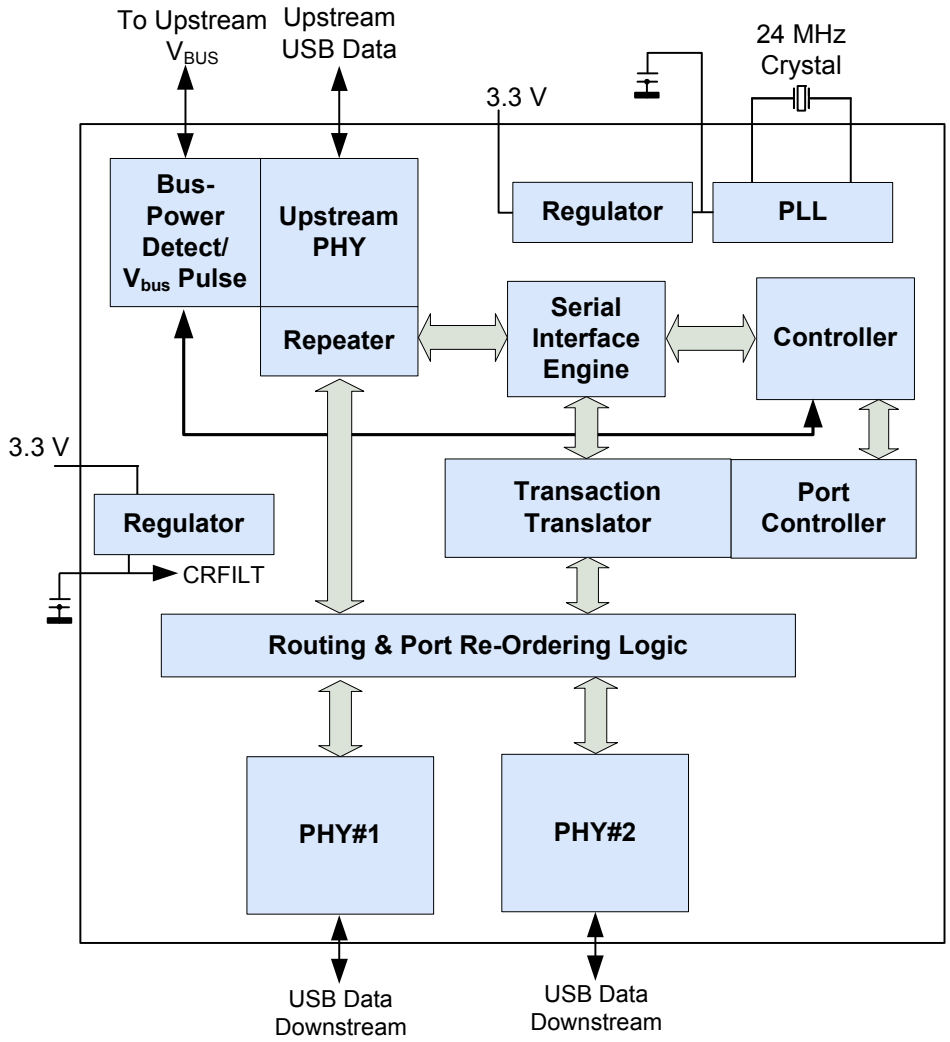


Figure 1 USB2412 Block Diagram

Package Outline

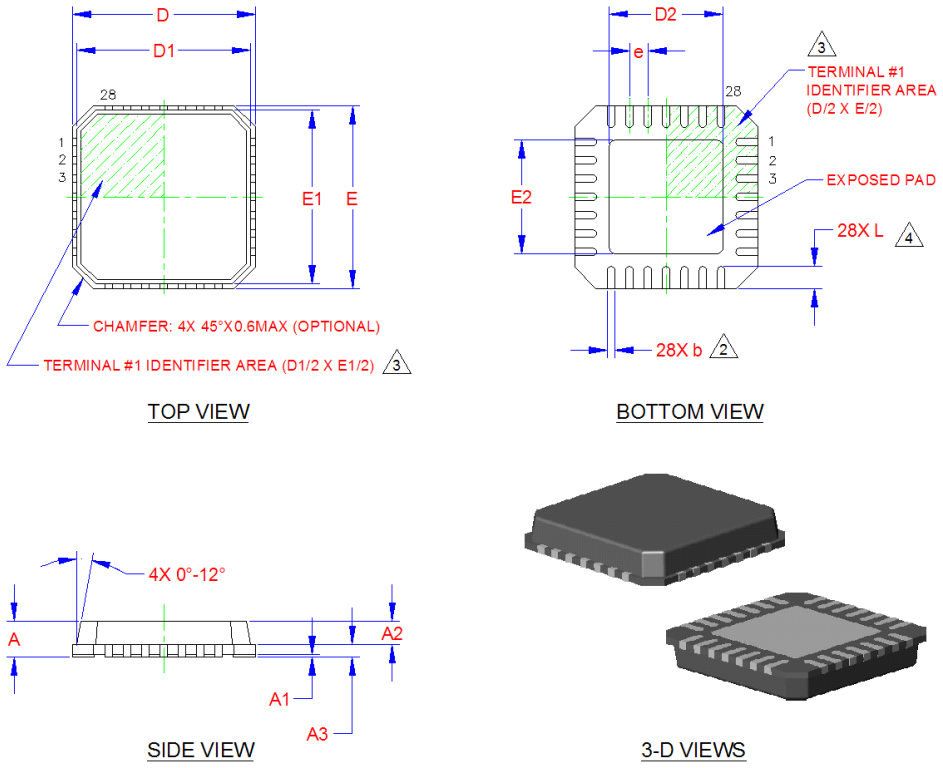


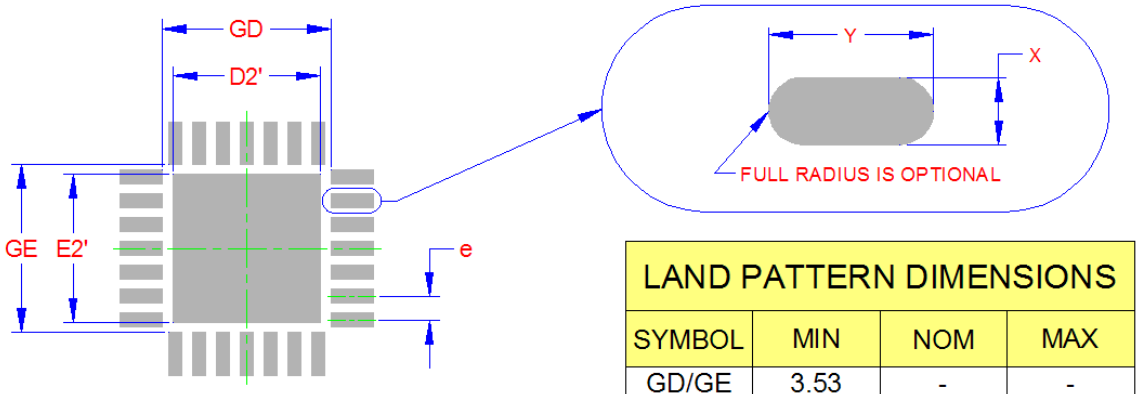
Figure 2 USB2412 28-Pin QFN Package Outline (5x5 mm Body, 0.5 Pitch, 3.1 ePad)

Table 1 Package Parameters

	MIN	NOMINAL	MAX	NOTE	REMARKS
A	0.80	0.85	1.00	-	Overall Package Height
A1	0	0.02	0.05	-	Standoff
A2	0.60	-	0.80	-	Mold Cap Thickness
D/E	4.90	5.00	5.10	-	X/Y Overall Body Size
D1/E1	4.55	4.75	4.95	-	X/Y Mold Cap Size
D2/E2	3.00	3.10	3.20	-	X/Y Exposed Pad Size
L	0.30	0.40	0.50	-	Terminal Length
b	0.18	0.25	0.30	2	Terminal Width
K	0.45	0.55	-	-	Terminal to ePad Clearance
e	0.50 BSC			-	Terminal Pitch

Notes:

1. All dimensions are in millimeters.
2. Position tolerance of each terminal and exposed pad is ±0.05 mm at maximum material condition. Instances of dimension “b” apply to plated terminals and is measured between 0.15 and 0.33 mm from the terminal tip.
3. Details of terminal #1 identifier are optional. However, they must be located within the area indicated.
4. Coplanarity zone applies to exposed pad and terminals.



LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD/GE	3.53	-	-
D2'/E2'	-	3.10	-
X	-	-	0.28
Y	-	-	0.89
e		0.50	

RECOMMENDED PCB LAND PATTERN

Figure 3 Recommended Printed Circuit Board (PCB) Land Pattern