

USB2.0 HUB Controller IC

USB 2.0 HIGH SPEED 4-PORT HUB CONTROLLER

SL2.1A

Data Sheet

Data Sheet

CoreChips ShenZhen CO.,Ltd

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Chapter 1 Pin Assignment

SL2.1A Pinout

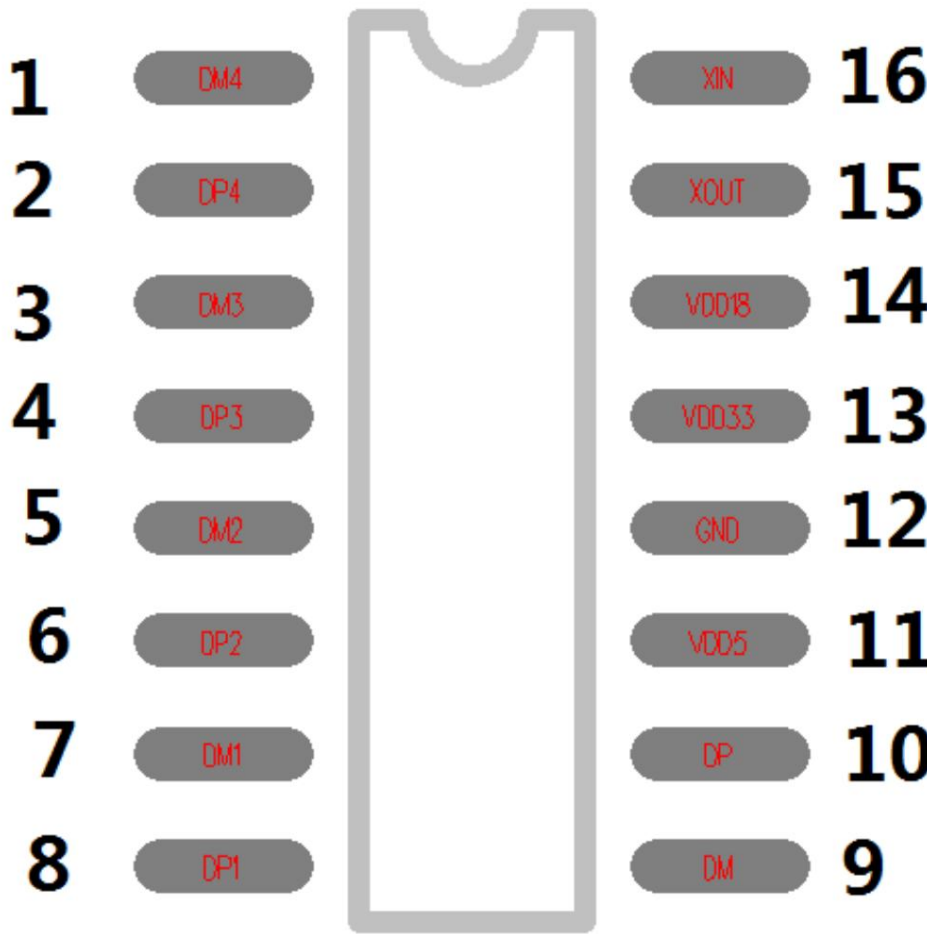


Figure 1: SL2.1A pinout

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SL2.1A Pin Definition

Pin Name	16 Pin#	Die IO	type	definition
DM4	1		B	USB DM signal of downstream port 4
DP4	2		B	USB DP signal of downstream port 4
DM3	3		B	USB DM signal of downstream port 3
DP3	4		B	USB DP signal of downstream port 3
DM2	5		B	USB DM signal of downstream port 2
DP2	6		B	USB DP signal of downstream port 2
DM1	7		B	USB DM signal of downstream port 1
DP1	8		B	USB DP signal of downstream port 1
DM	9		B	USB DM signal of the upstream port
DP	10		B	USB DP signal of the upstream port
VDD5	11		P	5v input
GND	12		P	Chip Ground
VDD33	13		P	Internal 3.3v
VDD18	14		P	Internal 1.8v
XOUT	15		THE	Crystal Oscillator PAD
ASK FOR	16		I	

Note: O, output; I , input; B, bidirectional; P, power/ground;

Chapter 2 Functional Description

2.1 Overview

SL2.1A is a highly integrated, high-performance, low-power USB2.0 hub controller chip;

Adopting STT technology, single power supply mode, the chip power supply voltage is 5V, internal integrated 5V to 3.3V, only need

Add filter capacitors to the external power supply; the chip has its own reset circuit, and the low-power technology makes it even more outstanding.

The chip can use an external crystal or a built-in crystal. If the built-in crystal is used,

Connect the XI input of the chip to ground. it is recommended that you use an external crystal oscillator, which is more stable*.

Perfectly supports **USB2.0 high speed (480MHz)**, **USB2.0** full speed (12MHz), and low speed mode (1.5MHz)

Integrated 12M crystal oscillator

Integrated 12MHz-to-480MHz PPL (Phase Lock Loop)

Using Single Transaction Translator (STT) technology, it is the most cost-effective and efficient solution in the TT series

Supports automatic enumeration switching from self-powered to bus-powered

2.2 Charging support

SL2.1A supports the standard BC1.2 charging protocol.

Chapter 3 Electrical Characteristics

3.1 Extreme working conditions

Table 1: Maximum ratings

symbol	parameter	Minimum	Maximum	Unit
VDDM	Power Supply	-0.5	+5.5	V
COME	Input Voltage for digital I/O	-0.5	+5.5	V
VINUSB	Input Voltage for USB signal (DP, DM) pins	-0.5	+3.6	V
TS	Storage Temperature under bias	-60	+100	°C
FOSC	Frequency	12 MHz ± 0.05%		

3.2 Scope of work

Table 2: Scope of work

symbol	parameter	Min. Typ.	Max. Unit		
VDD	Power Supply	4.0	5.0	5.25	V
FIND	Input Voltage for digital I/O pins	-0.5	3.3	5.5	V
VINUSB	Input Voltage for USB signal (DP, DM) pins	0.5	3.3	5.25 V	
TA	Ambient Temperature	0		70	°C

3.3 DC characteristics

Table 3: DC characteristics

symbol	parameter	Min. Typ.	Max. Unit		
IDD	Supply Current	50		120	mA
JESUS	Suspend Current			2.5	mA

3.4 HS/FS/LS electrical characteristics

See USB 2.0 standard.

3.5 ESD Characteristics

The ESD capability of this chip port is ±4KV (HBM).

Appendix Packaging

SL2.1A SOP16

标注	尺寸	最小 (mm)	最大 (mm)	标注	尺寸	最小 (mm)	最大 (mm)
A		9.80	10.00	C3 ₂		0.05	0.15
A1		0.356	0.456	C4		0.203	0.233
A2		1.27TYP		D		1.05TYP	
A3		0.302TYP		D1		0.40	0.70
B		3.85	3.95	D2		0.15	0.25
B1		5.84	6.24	R1		0.20TYP	
B2		5.00TYP		R2		0.20TYP	
C		1.40	1.60	θ 1		8° ~ 12° TYP4	
C1		0.61	0.71	θ 2		8° ~ 12° TYP4	
C2		0.54	0.64	θ 3		0° ~ 8°	
C3 ₁		0.05	0.25	θ 4		4° ~ 12°	

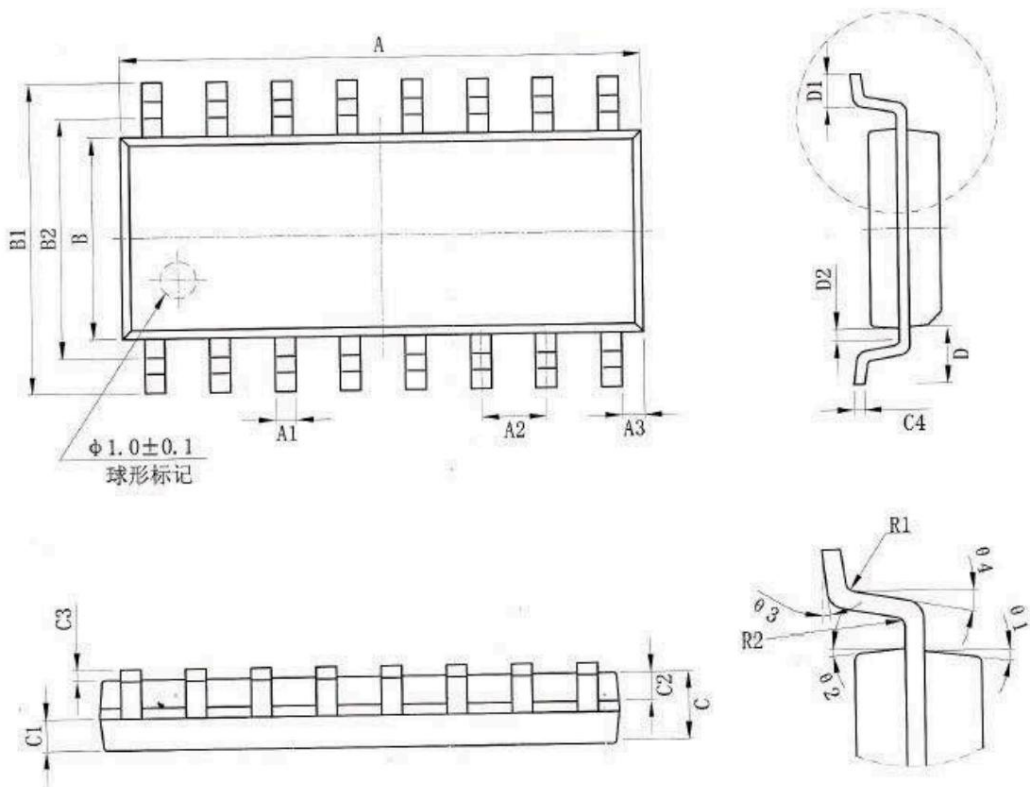


Figure 2: Package dimensions

