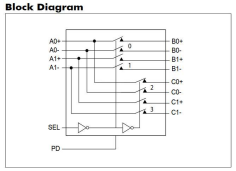
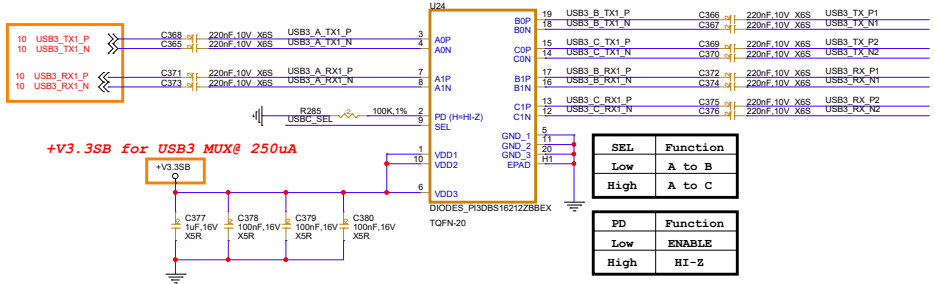
USBC_OTG_CONN

Block Diagram

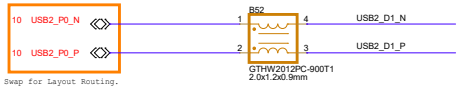




SEL	Function
Low	A to B
High	A to C

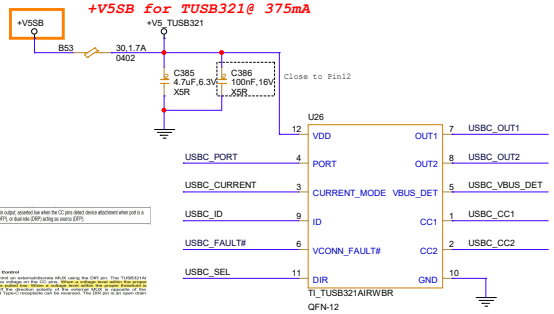
PD	Function
Low	ENABLE
High	HI-Z

+V3.3SB for USB3 MUX@ 250uA



Swap for Layout Routing.

+V5SB for TUSB321@ 375mA



0	9	0	Open drain output: asserted low when the CC pins detect device attachment when port is a source (DFP), or dual-role (DRP) acting as source (DFP)

7.3.4 Cable Orientation and External MUX Control

The TUSB321AI device has the ability to control an external/discrete MUX using the DIR pin. The TUSB321AI detects the cable orientation by monitoring the voltage on the CC pins. When a voltage level setting that signifies attachment is detected on either the CC1 or CC2 pin, the DIR pin is asserted high. If the direction polarity of the external MUX is opposite of the TUSB321AI, the CC1/CC2 connection to C/D&E Type-C receptacle can be reversed. The DIR pin of an open drain output.

10 Layout

10.1 Layout Guidelines

1. An extra trace (or stub) is created when connecting between more than two points. A trace connecting pin A6 to pin B6 will create a stub because the trace also has to go to the USB Host. Ensure that:
   - A stub created by short on pin A6 (DP) and pin B6 (DP) at Type-C receptacle does not exceed 3.5 mm.
   - A stub created by short on pin A7 (DM) and pin B7 (DM) at Type-C receptacle does not exceed 3.5 mm.
2. A 100-nF capacitor should be placed as close as possible to the TUSB321AI V_{DD} pin.

10.2 Layout Example

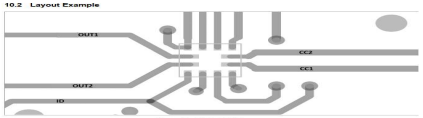
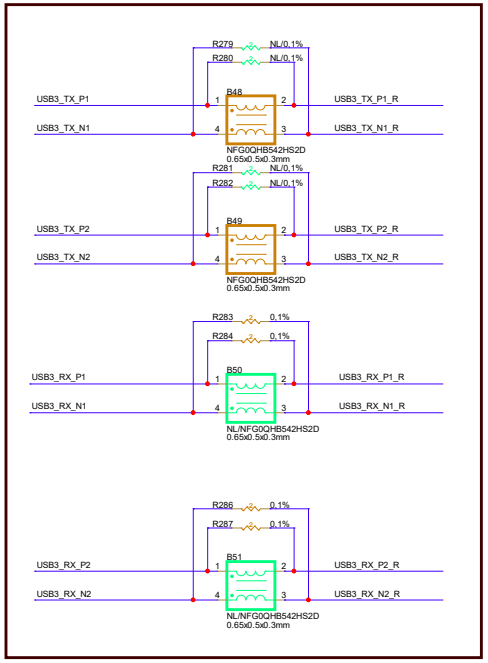
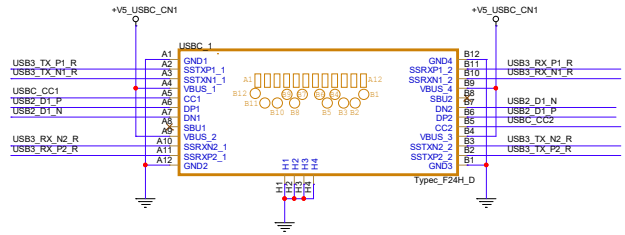
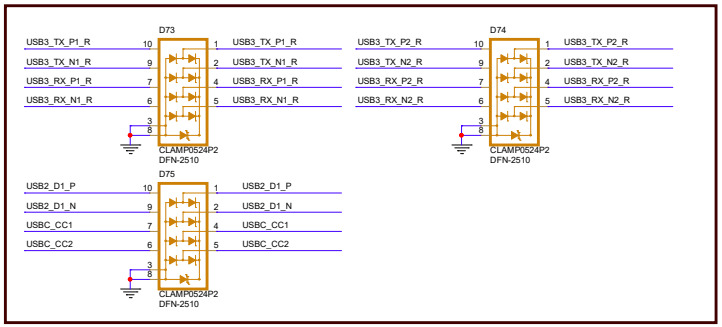
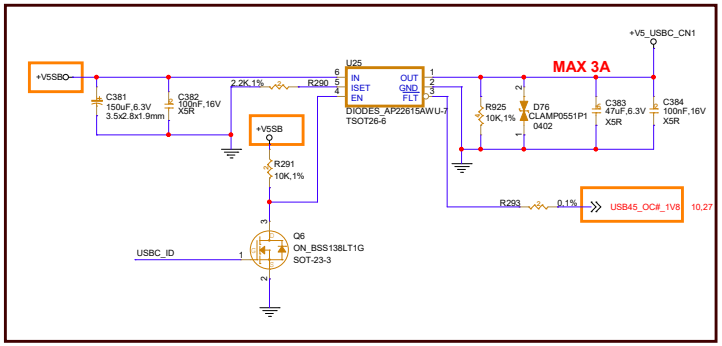


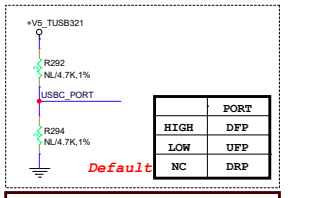
Figure 5. TUSB321AI Layout





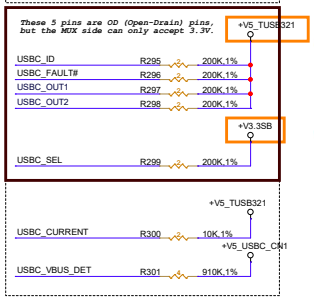






	PORT
HIGH	DFP
LOW	UFP
NC	DRP

Default



	Current Mode
10k	3A
500k	1.5A
PD or NC	DeDault

Default

over operating free-air temperature range (unless otherwise noted)(1)

		MIN	MAX	UNIT
Supply voltage	V_{DD}	–0.3	6.0	V
Control pins	CC1, CC2, PORT, CURRENT_MODE, ID, DIR, $\overline{VCONN_FAULT}$	–0.3	V_{DD} + 0.3	V
	OUT1, OUT2	–0.3	V_{DD} + 0.3	
	VBUS_DET	–0.3	4	
Storage temperature, T_{stg}		–65	150	°C

(1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions*. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.