



FUSB2805 Customer Evaluation Board Specification

Version 1.0

Introduction

The purpose of this board is to provide the customer with a method of electrically evaluating the FUSB2805. The board is designed to be either connected to bench equipment or integrated into a customer's platform. For this reason the board should be made as small as practically possible.

Requirements

- Simple header for power connections.
- Standard 0.1" header for logic analyzer connections.
- Type A USB connector for USB host applications.
- USB Switch for VBUS control

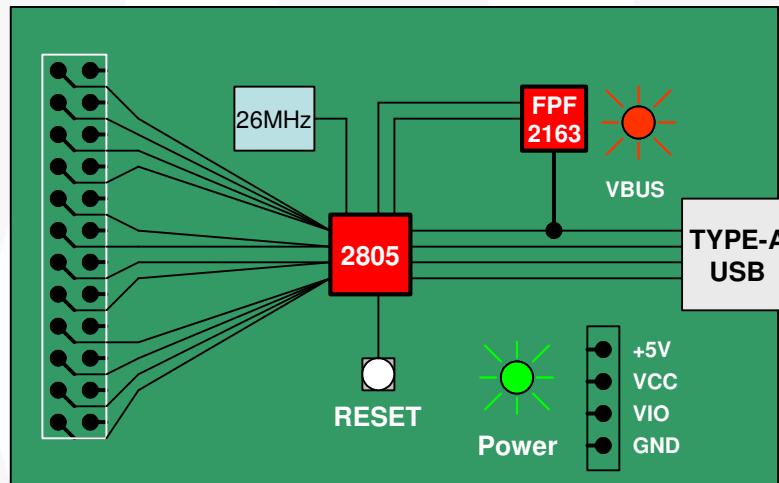


Figure 1 - Block Diagram

Critical Routes

The most critical pins on the FUSB2805 are the DP and DM pins. This is the high speed interface for the USB data and must pass compliance eye diagram tests. Using coupled transmission lines will provide the best immunity from common-mode noise and adding the co-planar structure should help maintain impedance while reducing interference and noise. As with all high speed lines, they should be as short as possible and not have vias or other impedance deviants attached. Please refer to Figure 2 for the general concept.

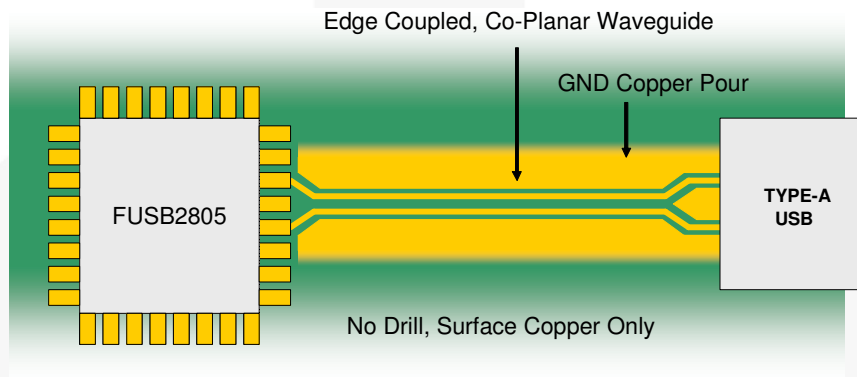


Figure 2 – 45Ohm Transmission Line Structure for DP/DM Lines

In cost-sensitive applications a two sided board might be considered. In this case there would be no power plane close enough to the transmission line structures to be of significance with respect to impedance control. With proper calculations a suitable transmission line could be constructed using the above technique and adjusting the trace-to-trace distance along with the distance from trace to ground on the surface layer (adjacent). Typically, the data traces get wider and the gaps get smaller.

Bill of Materials

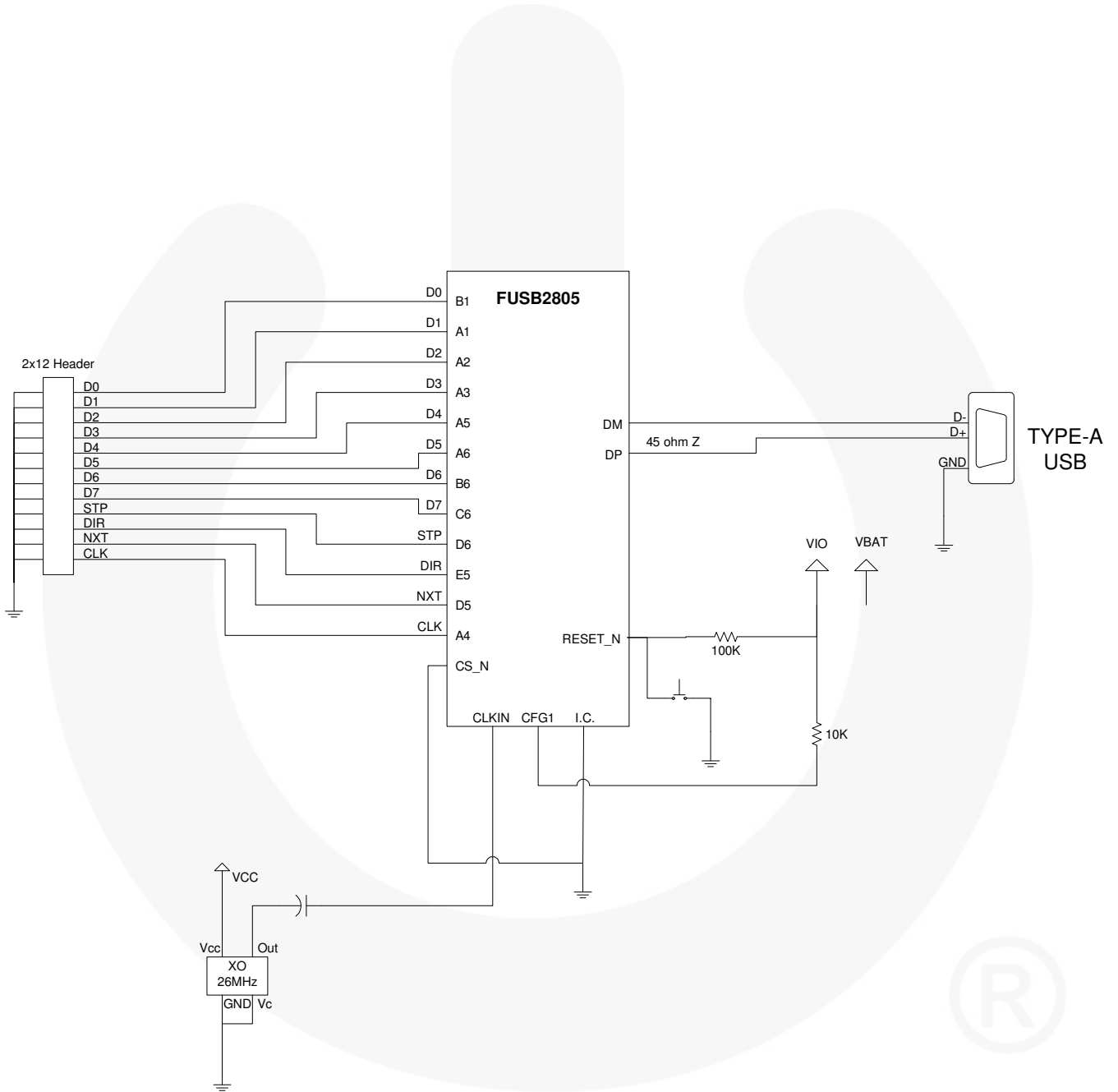
This is a proposed list of components to aid the board designer.

Item	Qty	Description	Manufacturer #	Supplier	Part Number
1	2	Momentary Push Button	Panasonic EVQ-PAE04M	Digi-Key	P8008S-ND
2	1	LED - Green	LG M47K-G1J2-24-0-2-R18-Z	Digi-Key	475-1404-1-ND
3	1	LED - Red	LS M47K-H2L1-1-0-2-R18-Z	Digi-Key	475-2507-1-ND
4	1	26MHz Crystal Oscillator	532L25DT26M0000	Digi-Key	CTX810CT-ND
5	1	Fairchild VBUS Switch	FPF2165	Digi-Key	FPF2165CT-ND
6	1	Fairchild Tinylogic Inverter	NC7SZ04M5X	Digi-Key	NC7SZ04M5XCT-ND

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ULPI Interface Block

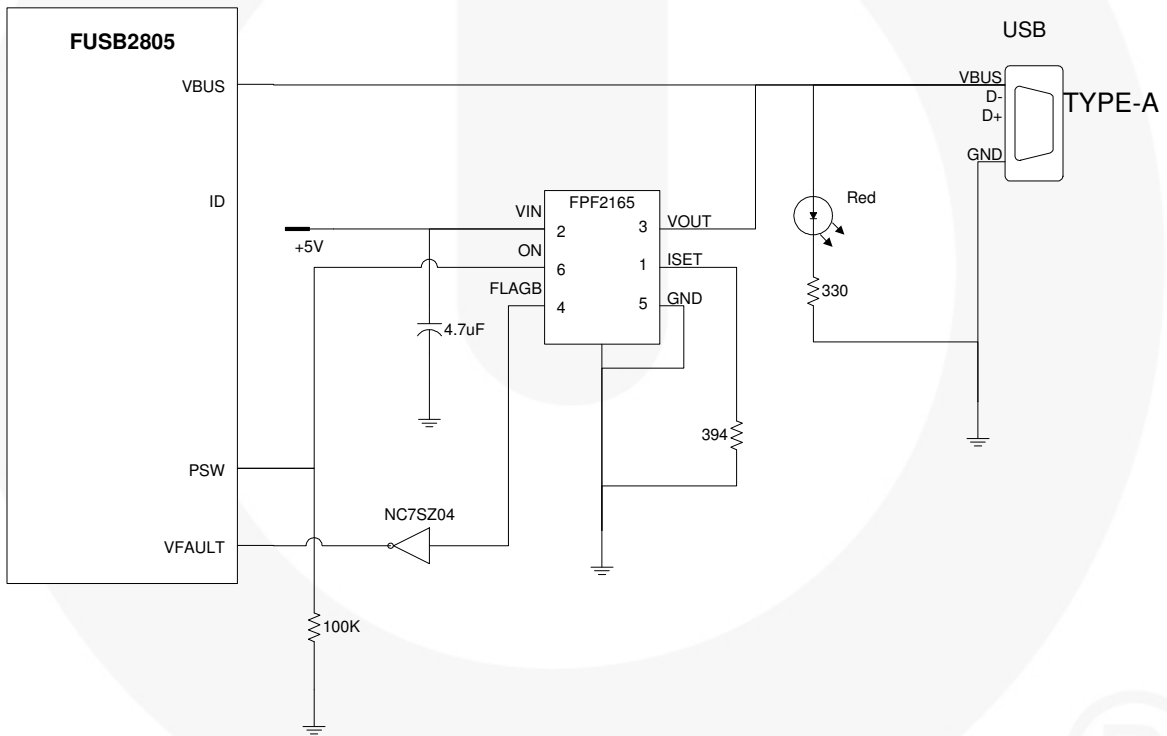
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V_{BUS} Block

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Power Supply Block

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