

USB <-> UART

0.5A FUSE

5V_USB

J1

F1

VBUS

1

2 D-

3 D+

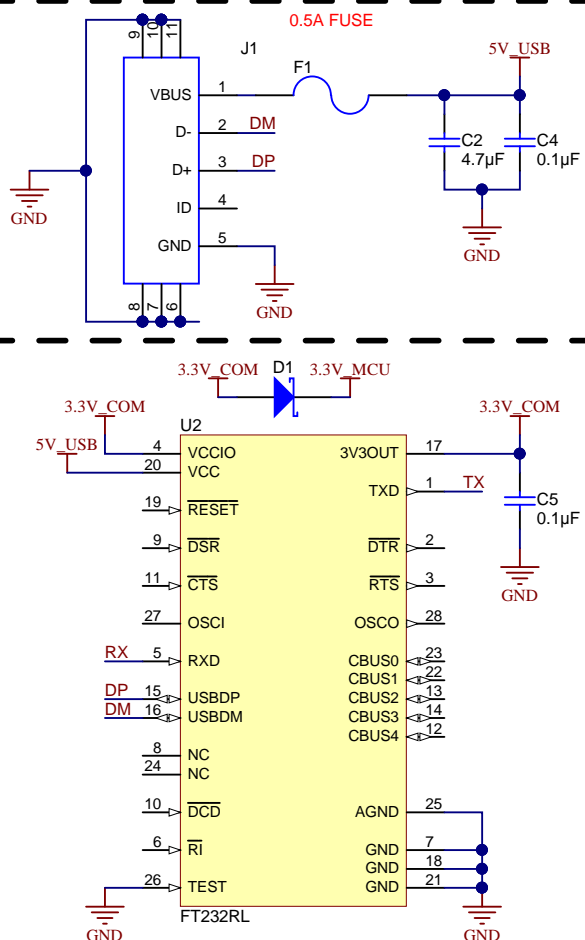
4 ID

5 GND

C2 4.7µF

C4 0.1µF

GND



DRV8702D-Q1 / DRV8703D-Q1

DRV8702D-Q1 / DRV8703D-Q1

U4: DRV8703DQQRHBRQ1

Power Supply and Decoupling:

- AVDD (14):** Connected to 3.3V via R25 (750Ω) and C13 (1μF).
- DVDD (12):** Connected to 3.3V via R26 (10kΩ) and C12 (1μF).
- VM (28):** Connected to 3.3V via R26 (10kΩ) and C10 (10μF).
- VDRRAIN (27):** Connected to 3.3V via R26 (10kΩ) and C14 (0.1μF).
- VCP (29):** Connected to 3.3V via R26 (10kΩ) and C11 (0.1μF).
- CPH (30):** Connected to 3.3V via R26 (10kΩ) and C9 (0.1μF).
- CPL (31):** Connected to 3.3V via R26 (10kΩ) and C9 (0.1μF).

Control and Status Pins:

- IN1 (2):** Connected to 3.3V via R25 (750Ω).
- IN2 (3):** Connected to 3.3V via R25 (750Ω).
- nSLEEP (8):** Connected to 3.3V via R25 (750Ω).
- MODE (11):** Connected to 3.3V via R25 (750Ω).
- SCLK (7):** Connected to 3.3V via R25 (750Ω).
- SDI (6):** Connected to 3.3V via R25 (750Ω).
- SDO (4):** Connected to 3.3V via R25 (750Ω).
- SCS (5):** Connected to 3.3V via R25 (750Ω).
- IDRI:** Connected to 3.3V via R25 (750Ω).

Output and Fault Pins:

- GH (18):** Connected to 3.3V via R27 (10kΩ).
- SH (19):** Connected to 3.3V via R27 (10kΩ).
- GL (20):** Connected to 3.3V via R27 (10kΩ).
- RSVD (26):** Connected to 3.3V via R27 (10kΩ).
- GND (25):** Connected to 3.3V via R27 (10kΩ).
- RSVD (24):** Connected to 3.3V via R27 (10kΩ).
- SP (23):** Connected to 3.3V via R27 (10kΩ).
- SP (21):** Connected to 3.3V via R27 (10kΩ).
- SN (22):** Connected to 3.3V via R27 (10kΩ).
- SO (16):** Connected to 3.3V via R32 (7.50kΩ).
- VREF (15):** Connected to 3.3V via R32 (7.50kΩ).
- FAULT (10):** Connected to 3.3V via R32 (7.50kΩ).
- NC (32):** Connected to 3.3V via R32 (7.50kΩ).
- GND (1, 13, 17, 33):** Connected to 3.3V via R32 (7.50kΩ).
- PAD:** Connected to 3.3V via R32 (7.50kΩ).
- nFAULT:** Connected to 3.3V via R32 (7.50kΩ).

Optional Components:

- R29 (10kΩ):** Connected to 3.3V via R29 (10kΩ).
- R30 (10kΩ):** Connected to 3.3V via R30 (10kΩ).
- R31 (10kΩ):** Connected to 3.3V via R31 (10kΩ).

[illegible]

MSP430G2553IPW20

Pin Connections:

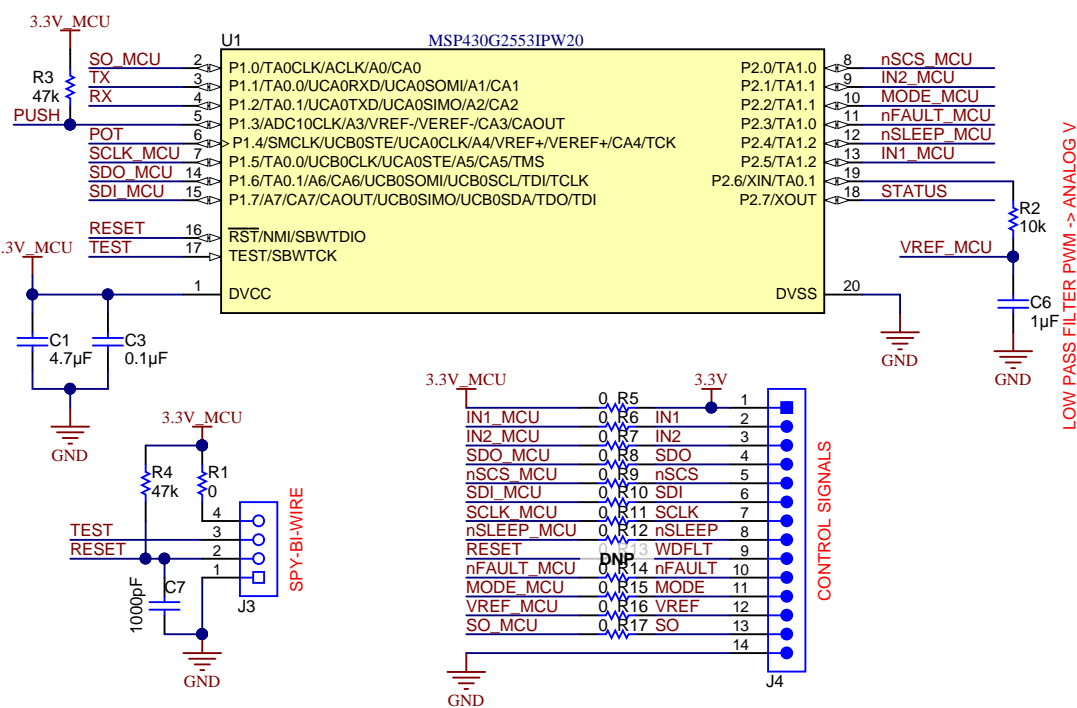
Pin	Signal	Pin	Signal
1	DVCC	18	STATUS
2	SO MCU	19	IN1 MCU
3	TX	20	DVSS
4	RX	21	IN2 MCU
5	POT	22	MODE MCU
6	SCLK MCU	23	nFAULT MCU
7	SDO MCU	24	nSLEEP MCU
14	SDI MCU	25	IN1 MCU
15	RESET	26	XIN/TA0.1
16	TEST	27	XOUT
17	TEST		

Module Connections:

Pin	Signal	Pin	Signal
0	R5	1	3.3V
1	IN1 MCU	2	IN2 MCU
2	IN2 MCU	3	SDO MCU
3	SDO MCU	4	nSCS MCU
4	nSCS MCU	5	SDI MCU
5	SDI MCU	6	SCLK MCU
6	SCLK MCU	7	nSLEEP MCU
7	nSLEEP MCU	8	RESET
8	RESET	9	nFAULT MCU
9	nFAULT MCU	10	MODE MCU
10	MODE MCU	11	VREF MCU
11	VREF MCU	12	SO MCU
12	SO MCU	13	SO MCU
13	SO MCU	14	SO MCU

Control Signals:

- IN1 MCU
- IN2 MCU
- SDO MCU
- nSCS MCU
- SDI MCU
- SCLK MCU
- nSLEEP MCU
- RESET
- nFAULT MCU
- MODE MCU
- VREF MCU
- SO MCU



BUTTON & POT

The diagram illustrates the wiring for a button and a potentiometer. On the left, a button labeled SH-J1 is shown with a switch symbol. Below it, a 4-pin header J2 is connected to the button's pins. The connections are as follows: J2 pin 1 is connected to the button's RESET pin (labeled 1); J2 pin 2 is connected to the button's PUSH pin (labeled 2); J2 pin 3 is connected to the button's common pin (labeled 3); and J2 pin 4 is connected to the button's common pin (labeled 4). The button's common pin is also connected to a switch S1. The switch S1 is connected to a 50k resistor R18, which is connected to the 3.3V MCU supply. The other end of the resistor R18 is connected to GND. The potentiometer is represented by a variable resistor symbol with a wiper. The wiper is connected to the 3.3V MCU supply. The potentiometer's outer terminals are connected to GND. The potentiometer is labeled POT and R18 50k.

SELECT PUSH
BUTTON FUNCT

SH-J1

DEFAULT
PINS 1-2

RESET

PUSH

J2

1

2

3

4

3.3V_MCU

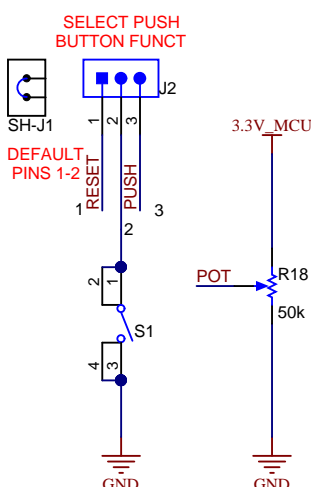
POT

R18

50k

GND

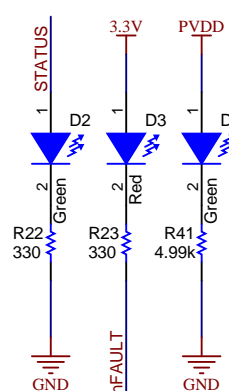
GND



LEDs

The diagram illustrates the connection of three LEDs (D2, D3, D4) to a microcontroller. Each LED is connected to a specific pin and has a current-limiting resistor.

- D2 (Green LED):** Connected to the **STATUS** pin (pin 1) through resistor **R22 (330)**. The other end of R22 is connected to **GND**. The LED's other terminal (pin 2) is connected to **Green**.
- D3 (Red LED):** Connected to the **3.3V** pin (pin 1) through resistor **R23 (330)**. The other end of R23 is connected to the **nFAULT** pin. The LED's other terminal (pin 2) is connected to **Red**.
- D4 (Green LED):** Connected to the **PVDD** pin (pin 1) through resistor **R41 (4.99k)**. The other end of R41 is connected to **GND**. The LED's other terminal (pin 2) is connected to **Green**.



IDRIVE (DRV8702D-Q1)

**SELECT IDRIVE
SETTING**

**DEFAULT
PINS 5->6**

SH-J2

DNP

DNP

DNP

DNP

DNP

DNP

AVDD

R28
500k

R31
200k

R35
500k

GND

1 2 3 4 5 6 7 8 9 10 11 12

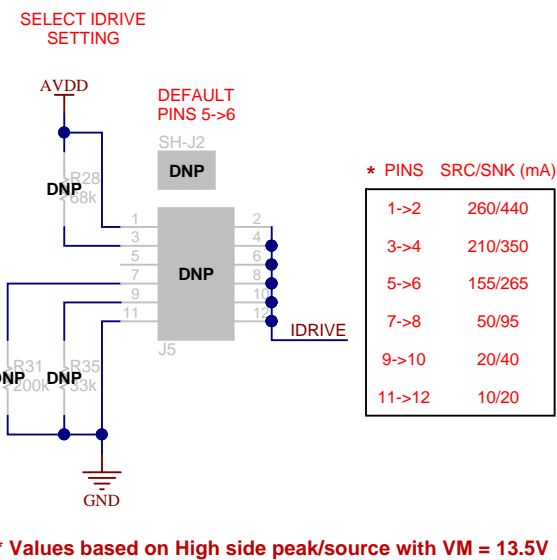
IDRIVE

*** PINS SRC/SNK (mA)**

1->2	260/440
3->4	210/350
5->6	155/265
7->8	50/95
9->10	20/40
11->12	10/20

*** Values based on High side peak/source with VM = 13.5V**

Orderable:	DRV8703D-Q1EVM	Designed for:	
TID #:	N/A	Project Title:	



3.3V LDO

The schematic diagram illustrates a 3.3V LDO (Low Dropout) regulator circuit. The central component is the LM9036QMX-3.3/NOPB voltage regulator, labeled U3. The input pin (VIN, pin 8) is connected to a PVD (Programmable Voltage Detector) input, which is also connected to a 0.1μF capacitor (C15) and ground (GND). The output pin (VOUT, pin 1) is connected to a 3.3V output terminal, which is also connected to a 22μF capacitor (C8) and ground (GND). The regulator has four ground pins (pins 2, 3, 6, and 7) connected to GND. The regulator is labeled LM9036QMX-3.3/NOPB.

Public Release
ORV870xD-Q1EVM

Mod. Date: 3/13/2017

TEXAS

