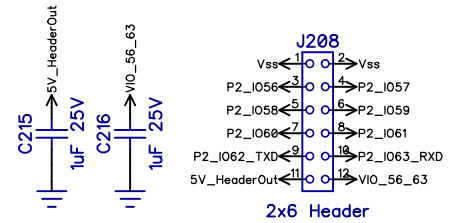
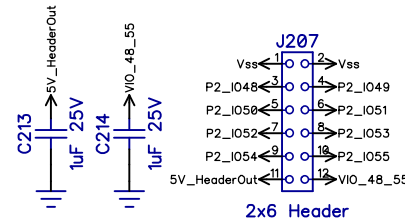
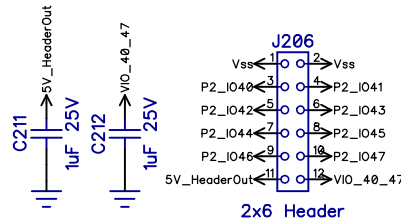
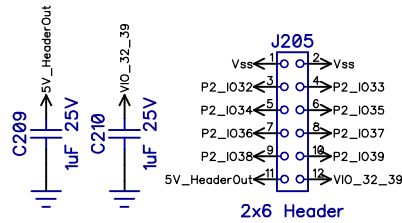
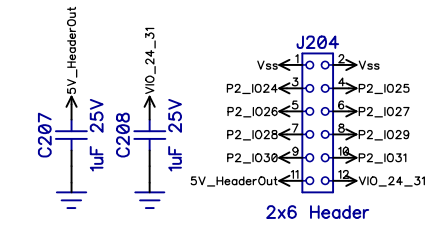
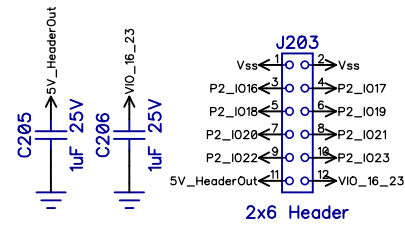
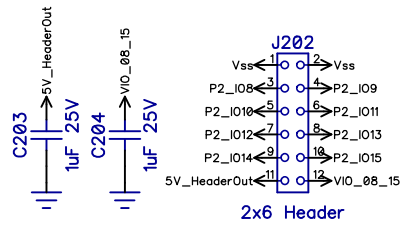
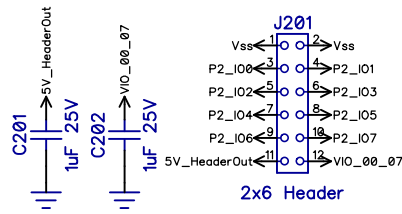


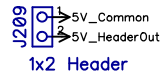


# I/O Headers

## Edge expansion headers



## Voltage Selection/Disable for Header 5V pins



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ENGINEERING SAMPLE - NOT FOR RESALE  
 PRE-PRODUCTION EVALUATION

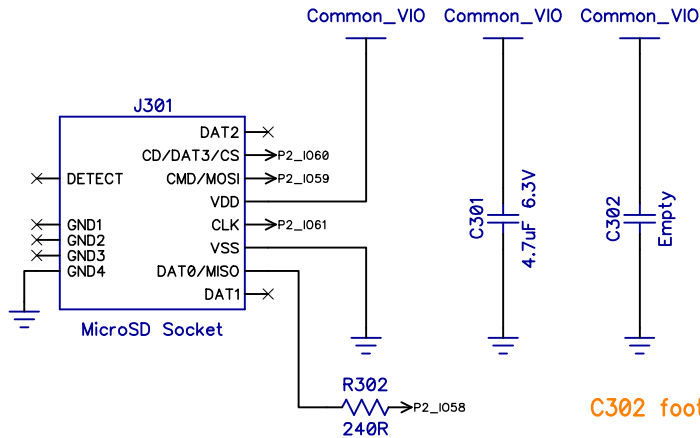
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Last Update: 17 Jun 2019 (MM)

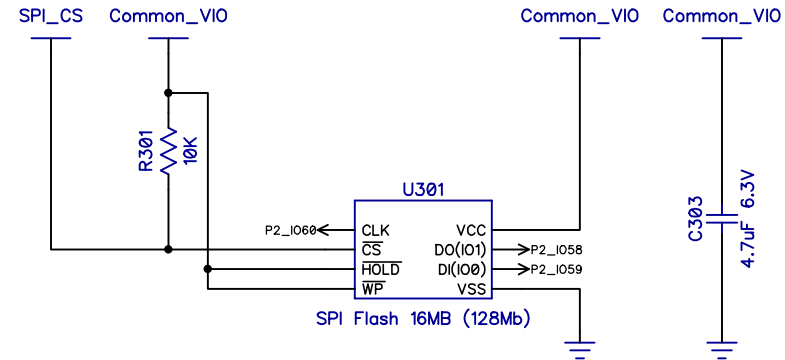
# Memory

## MicroSD



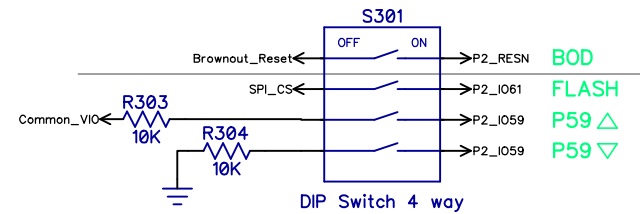
C302 footprint included for SD testing

## SPI Flash



Boot Mode Selection	FLASH	P59 $\triangle$	P59 $\nabla$
Serial window of 60 seconds, default. (When SD card is NOT inserted)	OFF	OFF	OFF
Serial window of 60 seconds, overrides SPI Flash and SD card.	ON or OFF	ON	OFF
Serial window of 100 ms, then SPI flash. If SPI flash fails then serial window of 60 seconds.	ON	OFF	OFF
SPI flash only (fast boot), no serial window. If SPI flash fails then shutdown.	ON	OFF	ON
SD card with serial window on failure. If SD card fails then serial window of 60 seconds.	OFF	OFF	OFF
SD card only, no serial window. If SD card fails then shutdown.	OFF	OFF	ON

## Boot options and "BOD" brownout enable switch



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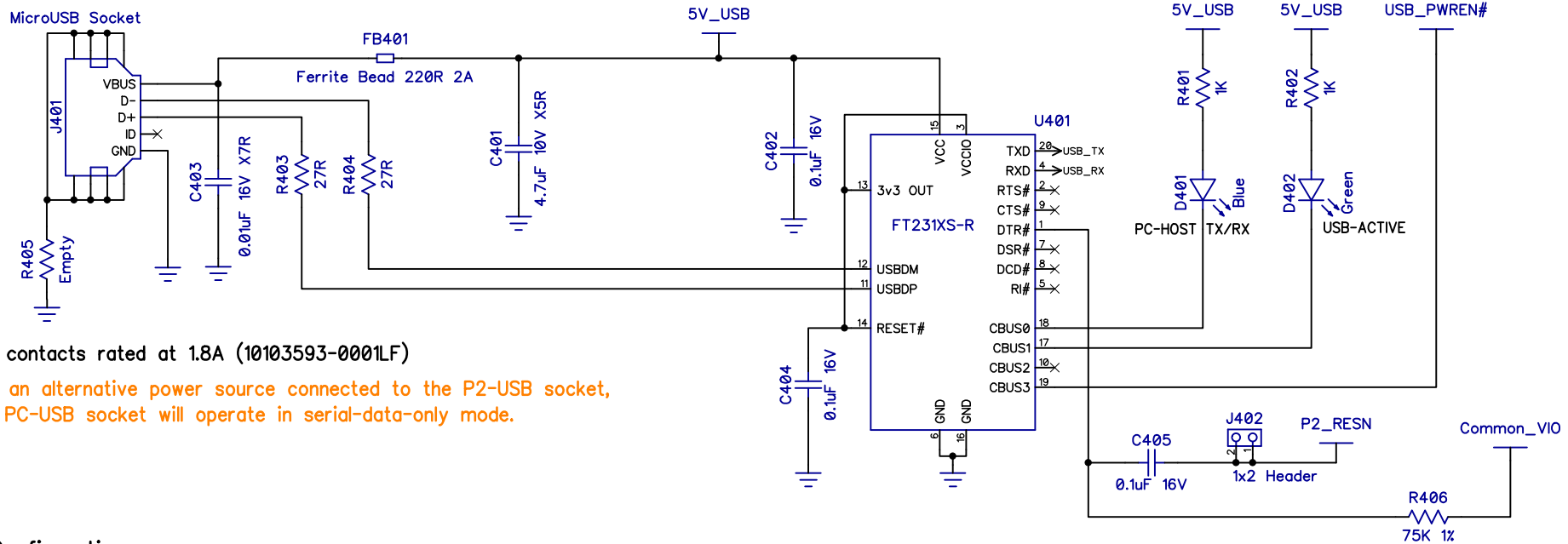
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# USB PC Socket

## PC-USB power socket and P2-to-PC serial data



USB contacts rated at 1.8A (10103593-0001LF)

With an alternative power source connected to the P2-USB socket, this PC-USB socket will operate in serial-data-only mode.

### FTDI Configuration

CBUS0 = TX&RXLED

CBUS1 = PWREN#

CBUS2 = TriState

CBUS3 = PWREN#

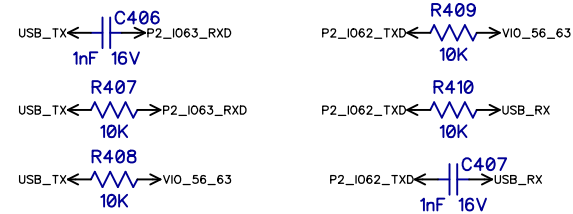
USB Config / MaxPower = 500mA

Manufacturer = Parallax Inc

Product Description = Propeller P2-EVAL-ES

Set CBUS3 to Tristate to disable PC-USB power (ie. Serial only)

J402 - Allow DTR disable AND remote control of RESn



Pull-up serial bus to prevent floating-state terminal chars  
 Include series to prevent parasitic power in either direction  
 Keep as single components to allow high-speed testing

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**PRE-PRODUCTION EVALUATION**

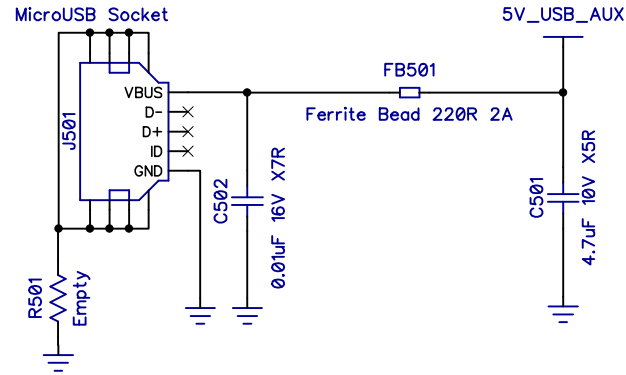
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# USB Aux Power Socket

## P2-USB high current power socket and P2 USB data



USB contacts rated at 1.8A (10103593-0001LF)

## Auxiliary power header pads (unpopulated)



The pads at J502 connect directly to the P2-AUX 5V input power rail.  
Source power here, for example to power a fan, or power your P2-EVAL instead of from USB.

\*IF\* you use these pads to supply power to the P2-EVAL board,  
you must ensure no other power source is connected to the P2-USB socket!  
Do NOT exceed the maximum input voltage of 5.5V. Minimum input voltage is 4.5V

Use of J502 header at USER OWN RISK!

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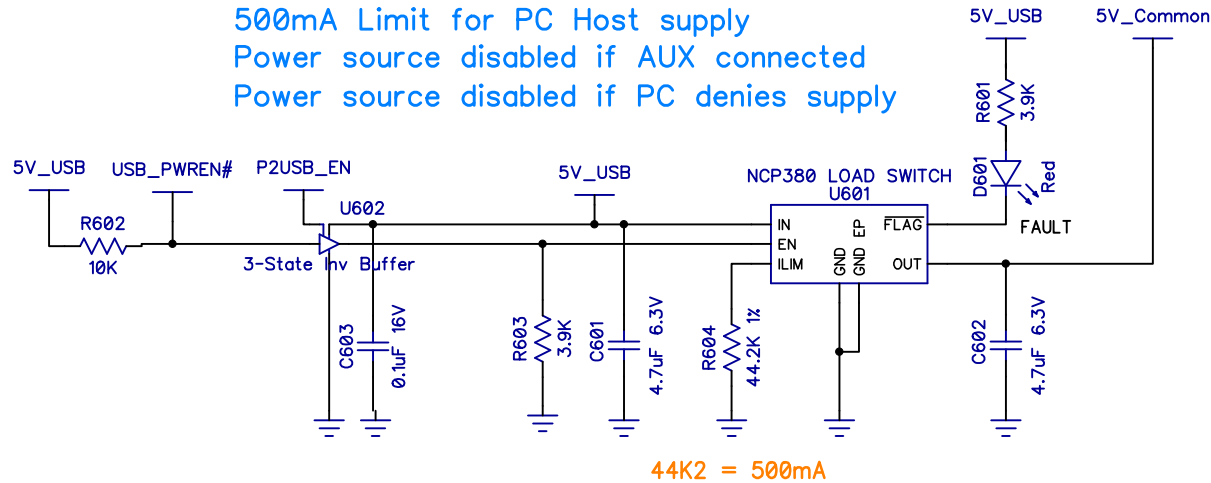
Part Number: 64000-ES  
Revision: B

Last Update: 17 Jun 2019 (MM)

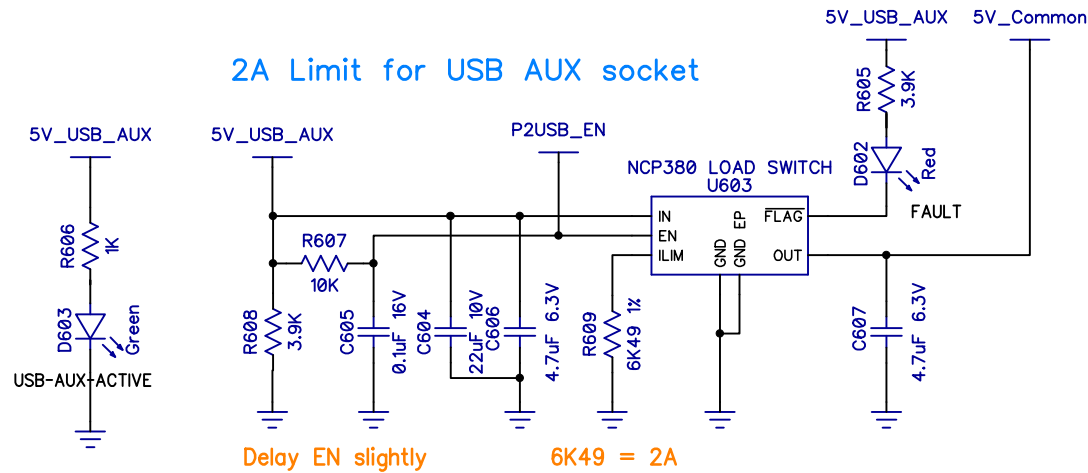
# USB Current Limit and Logic

500mA Limit for PC Host supply  
 Power source disabled if AUX connected  
 Power source disabled if PC denies supply

FLAG maximum sink 1mA !!



2A Limit for USB AUX socket



3K9 discharge path and also holds OE(inv buffer) low

Safe to connect power sources to both USB sockets at the same time. USB Switches will source power from only one socket, P2-USB preferred.

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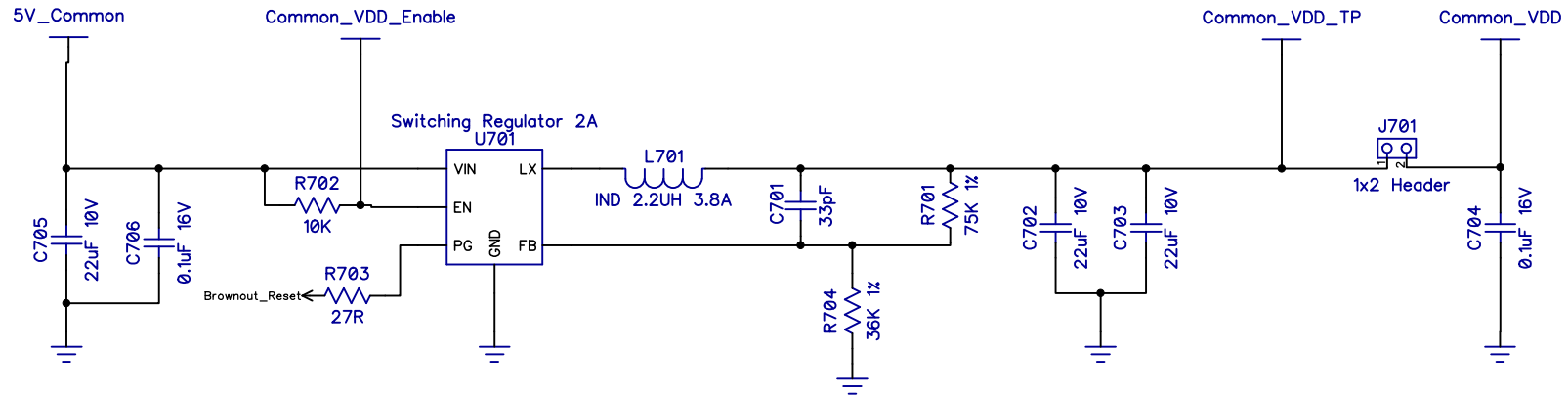
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# Common VDD 1V8

## VDD Power Supply - Nominal 1V8

## Current Test Point

VDD Male Header



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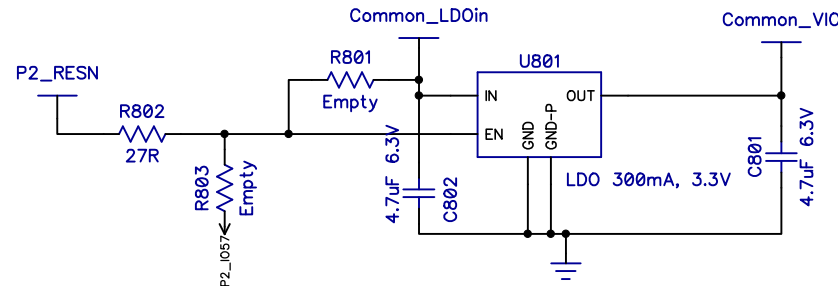
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VIO Power Supply - LDO 3V3 for Flash and SD card



Allow user to toggle SD card power from P57

P2\_RESn (Reset button press) will disable this LDO, to powercycle the SD card  
 Fast pulse on DTR may also provide reset- test on first article. R802/R803 footprints allow for RC  
 To disable this feature, move R802 to R801, leaving R802 empty.  
 R803 would allow user control of reset

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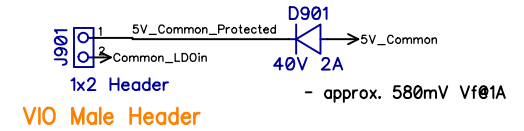
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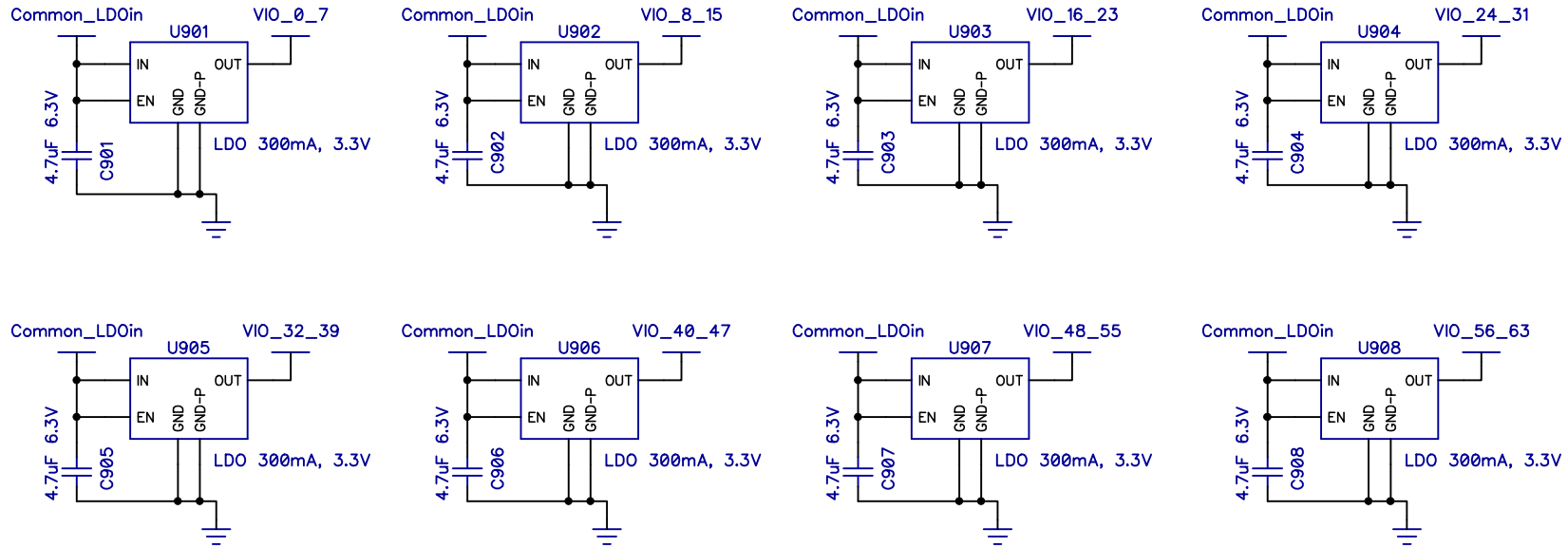


# LDO 3V3

## Current Test Point



## Low noise VIO 3V3 local regulation



Note: LDO output caps located beside P2 microcontroller

Use these power sources when you want a fixed 3V3 low noise supply for the P2 smart pins.

Recommended for analog experiments, such as when using the P2 smart pins in ADC and DAC modes.

Could use local beads/caps instead, but this scheme uses much the same boardspace and part cost, spreads heat, isolates groups of IO's from short-circuit damage, and removes requirement for a second buck converter.

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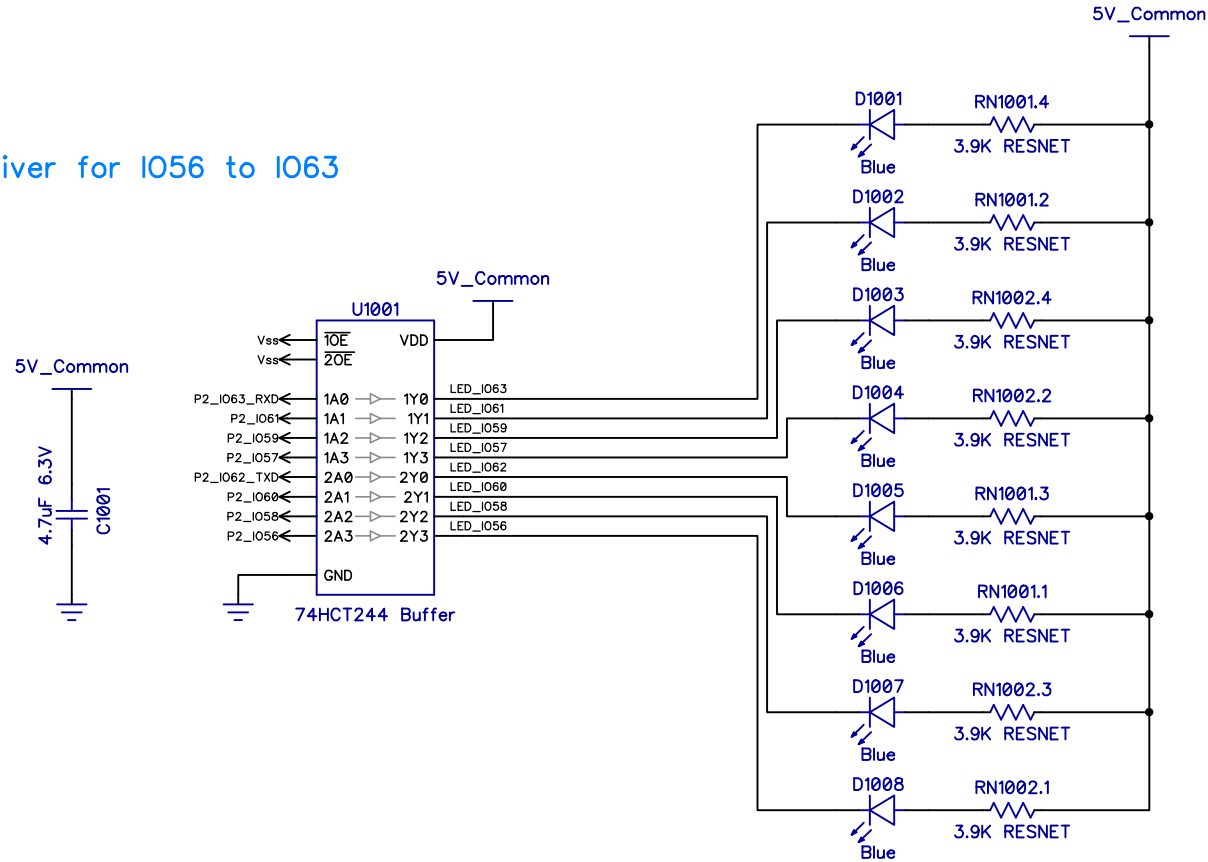
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# LEDs

## LED driver for IO56 to IO63



P2\_IO56 to P2\_IO63 are typically idle high and active low.

The LED's are wired such that they turn ON when the corresponding P2\_IO pin asserts low.

Buffer input capacitance typically 3.5pF.

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Mounting holes



Mounting hole diameter 3.2mm  
4mm hole spacing (56.56mm diagonal), suitable for 50mm fan

Gnd test points



BOM only - mfg

PCB  
PCB for P2 Eval Board RevB

BOM only - kitted parts

HW1101 CONN SHUNT  
HW1102 CONN SHUNT  
HW1103 CONN SHUNT  
HW1104 Self adhesive foot  
HW1105 Self adhesive foot  
HW1106 Self adhesive foot  
HW1107 Self adhesive foot

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