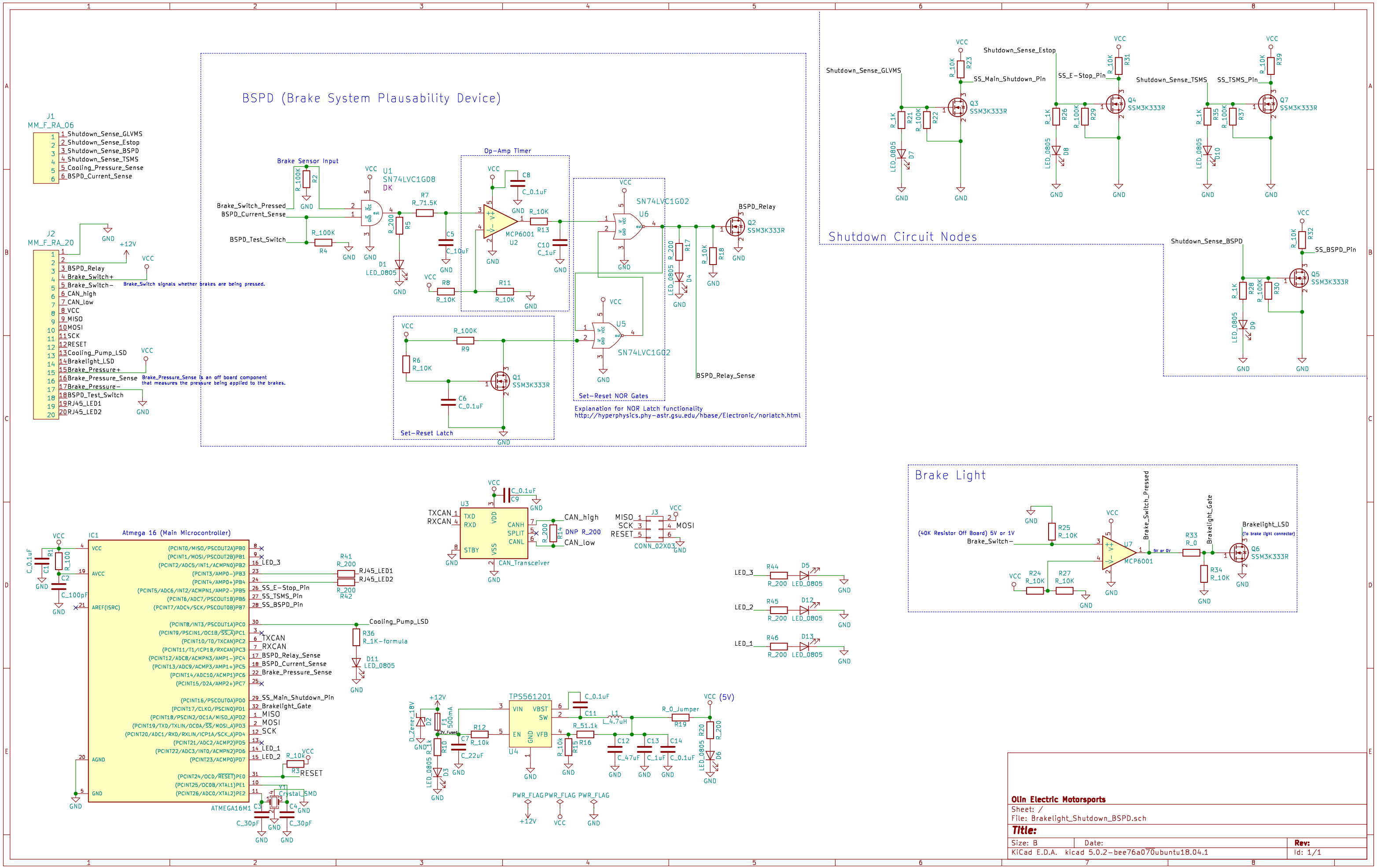
BSPD (Brake System Plausability Device)
Shutdown Circuit Nodes
Brake Light
J1
MM_F_RA_06
1 Shutdown_Sense_GLVMS
2 Shutdown_Sense_Estop
3 Shutdown_Sense_BSPD
4 Shutdown_Sense_TSMS
5 Cooling_Pressure_Sense
6 BSPD_Current_Sense
J2
MM_F_RA_20
3 BSPD_Relay
4 Brake_Switch+
5 Brake_Switch−
6 CAN_high
7 CAN_low
8 VCC
9 MISO
10 MOSI
11 SCK
12 RESET
13 Cooling_Pump_LSD
14 Brakelight_LSD
15 Brake_Pressure+
16 Brake_Pressure_Sense
17 Brake_Pressure−
18 BSPD_Test_Switch
19 RJ45_LED1
20 RJ45_LED2
Brake_Switch signals whether brakes are being pressed.
Brake_Pressure_Sense is an off board component that measures the pressure being applied to the brakes.
Brake Sensor Input
Brake_Switch_Pressed
BSPD_Current_Sense
BSPD_Test_Switch
U1
SN74LVC1G08
DK
Op-Amp Timer
MCP6001
U2
Set-Reset Latch
Q1
SSM3K333R
Set-Reset NOR Gates
SN74LVC1G02
U6
U5
BSPD_Relay
Q2
SSM3K333R
BSPD_Relay_Sense
Explanation for NOR Latch functionality
http://hyperphysics.phy-astr.gsu.edu/hbase/Electronic/norlatch.html
Shutdown_Sense_GLVMS
Shutdown_Sense_Estop
SS_Main_Shutdown_Pin
SS_E-Stop_Pin
Shutdown_Sense_TSMS
SS_TSMS_Pin
Q3
SSM3K333R
Q4
SSM3K333R
Q7
SSM3K333R
Shutdown_Sense_BSPD
SS_BSPD_Pin
Q5
SSM3K333R
IC1
Atmega 16 (Main Microcontroller)
ATMEGA16M1
LED_3
RJ45_LED1
RJ45_LED2
SS_E-Stop_Pin
SS_TSMS_Pin
SS_BSPD_Pin
Cooling_Pump_LSD
TXCAN
RXCAN
BSPD_Relay_Sense
BSPD_Current_Sense
Brake_Pressure_Sense
SS_Main_Shutdown_Pin
Brakelight_Gate
MISO
MOSI
SCK
LED_1
LED_2
RESET
U3
TXCAN_1
RXCAN_4
CAN_high
CAN_low
CAN_Transceiver
J3
CONN_02X03
MISO_1
SCK_3
RESET_5
MOSI
LED_3
LED_2
LED_1
(40K Resistor Off Board) 5V or 1V
Brake_Switch−
Brake_Switch_Pressed
Brakelight_Gate
Brakelight_LSD
(To brake light connector)
Q6
SSM3K333R
U7
MCP6001
5V or 0V
TPS561201
U4
D_Zener_18V
F1
500mA
2V_Fuse
R_0_Jumper
VCC (5V)
PWR_FLAG
Olin Electric Motorsports
Sheet: /
File: Brakelight_Shutdown_BSPD.sch
Title:
Size: B
Date:
Rev:
KiCad E.D.A. kicad 5.0.2-bee76a070ubuntu18.04.1
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