OpenWindow dev board schematic

Window regulator input

J1
Door connector
1
2
3 Ignition_in
4 WindowSwitch_in
PWR_FLAG
GND
PWR_FLAG
+12V

Supply protection

+12V
Q1
FQU17P06TU
PGKE18CA-E3_54
D1
GND
GND
R9 10K
R10 5K6
Q3
FQU17P06TU
PWR_FLAG
+12V_switched

Ignition power switching

Ignition_in
R8 1K
Q2 2N7000
R4 1M
GND
GND

Window motor control

+12V_switched
D3
1N4007
J4
Relay Connector 2
R12 1K
Q4
PN2222A
Motor_GPIO_1
GND

+12V_switched
D4
1N4007
J6
Relay Connector 1
R13 1K
Q5
PN2222A
Motor_GPIO_2
GND

C2 debug

J2
C2 connector
1 C2CK
2 C2D
3
GND

FTDI serial

J3
FTDI connector
6
5 UART1_TX
4 UART1_RX
3
2
1
GND

Reset button

+3V3
R2 1K
SW1 SW_Push
R1 1K
R3 100R
RESETb
C1 100n
GND
GND

Window switch comparator

+12V_switched
R5 8K2
WindowSwitch_in
R6 6K2
R7 2K2
C3 1uF
CMP0_in
CMP1_in
GND
GND

U3 EFM8BB21F16I-C-QSOP24

+3V3
C5 100n
C7 4.7u
VDD
GND
RSTn/C2CK
P3.0/C2D
GND
RESETb
C2CK
C2D
CMP0_in
UART1_TX
UART1_RX
ADC_in
P0.0 P0.1 P0.2 P0.3 P0.4 P0.5 P0.6 P0.7
P2.3
P2.2
P2.1
P2.0
Motor_GPIO_1
Motor_GPIO_2
P1.7 P1.6 P1.5 P1.4 P1.3 P1.2 P1.1 P1.0
CMP1_in

Current sensing

+5V
10K
R14
5K1
R15
J5
ACS712 PCB Connector
1
2
3
ADC_in
GND
GND

5V supply

+12V_switched
U1
LP2950-5.0_TO92
VI GND VO
+5V
C2 1uF
C4 2.2uF
GND
GND

3V3 supply

+12V_switched
U2
LP2950-3.3_TO92
VI GND VO
+3V3
R11 1K6
D2 LED
C6 1uF
C8 2.2uF
GND
GND
GND
GND