TI Battery Charger1

IN — 13 — IN — OUT — 10 — BQ_OUT
OUT — 11
GND — R1 10k — 1 — TS — CHG — 9 — /CHG
BAT — 2 — BAT — PGOOD — 7 — /PGOOD
3 — BAT — EN1 — 6 — BQ_OUT
BAT1 Battery — 14 — TMR — EN2 — 5 — GND
SYSOFF — 15 — SYSOFF
R4 45.3k — 12 — ILIM — CE — 4
R5 1.1k — EP — 17
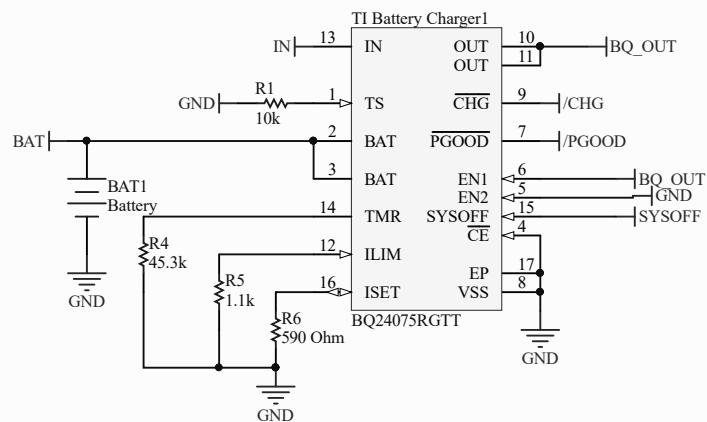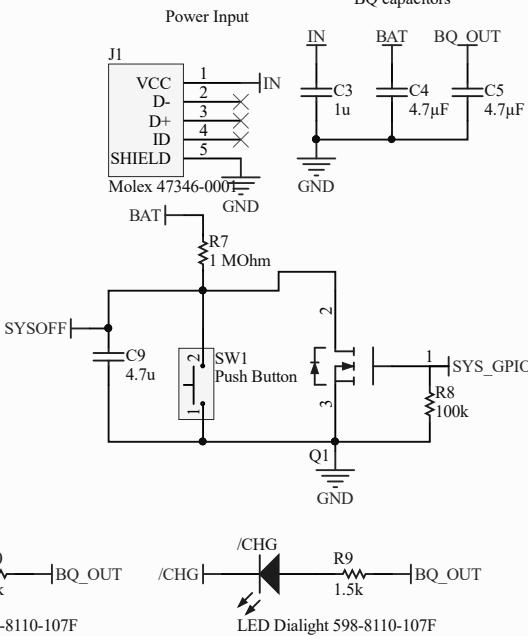R6 590 Ohm — 16 — ISET — VSS — 8
GND
BQ24075RGTT

Charger Information

R_TMR = 45.3k ->
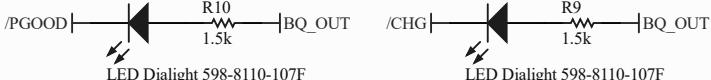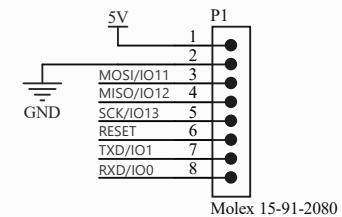R_ILIM = 1.1k
R_ISET = 590 Ohm
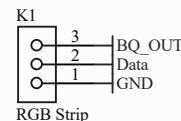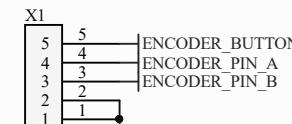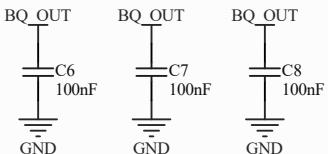EN2 = GND = 0
EN1 = HI = 1
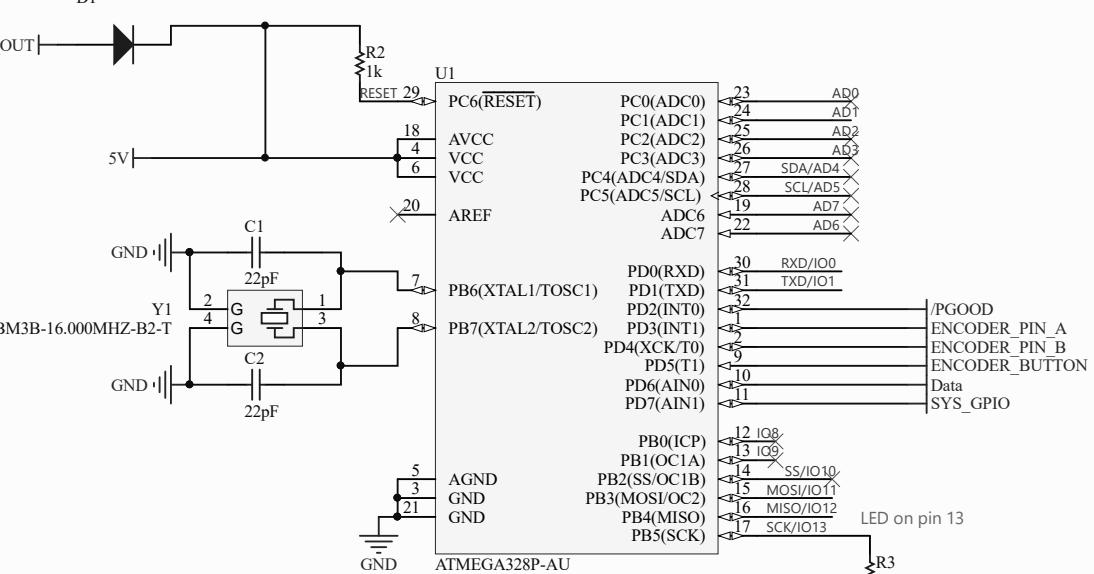
if button pushed:
    SYSOFF pulled low
if button not pushed:
    SYSOFF high
if GPIO = HIGH:
    SYSOFF pulled low
if GPIO = LOW:
    SYSOFF high

if SYSOFF low and BAT
power only:
    OUT powered by BAT
if SYSOFF high and BAT
power only:
    OUT = 0
if VIN?

Power Input

J1
VCC — 1 — IN
D- — 2
D+ — 3
ID — 4
SHIELD — 5
GND
Molex 47346-0001

BAT
R7 1 MOhm
SYSOFF
C9 4.7u
SW1 Push Button
Q1
GND
R8 100k
SYS_GPIO

BQ capacitors

IN — C3 1u
BAT — C4 4.7µF
BQ_OUT — C5 4.7µF
GND

/PGOOD — R10 1.5k — BQ_OUT
LED Dialight 598-8110-107F
/PGOOD

/CHG — R9 1.5k — BQ_OUT
LED Dialight 598-8110-107F
/CHG

D1
BQ_OUT

R2 1k
RESET — 29

U1
PC6(RESET) — PC0(ADC0) — 23 — AD0
PC1(ADC1) — 24 — AD1
5V — 18 — AVCC — PC2(ADC2) — 25 — AD2
4 — VCC — PC3(ADC3) — 26 — AD3
6 — VCC — PC4(ADC4/SDA) — 27 — SDA/AD4
PC5(ADC5/SCL) — 28 — SCL/AD5
20 — AREF — ADC6 — 19 — AD7
ADC7 — 22 — AD6

GND — C1 22pF
Y1 ABM3B-16.000MHZ-B2-T
2 — 1
4 — 3
GND — C2 22pF

7 — PB6(XTAL1/TOSC1) — PD0(RXD) — 30 — RXD/IO0
PD1(TXD) — 31 — TXD/IO1
8 — PB7(XTAL2/TOSC2) — PD2(INT0) — 32 — /PGOOD
PD3(INT1) — 1 — ENCODER_PIN_A
PD4(XCK/T0) — 2 — ENCODER_PIN_B
PD5(T1) — 9 — ENCODER_BUTTON
PD6(AIN0) — 10 — Data
PD7(AIN1) — 11 — SYS_GPIO

PB0(ICP) — 12 — IO8
PB1(OC1A) — 13 — IO9
5 — AGND — PB2(SS/OC1B) — 14 — SS/IO10
3 — GND — PB3(MOSI/OC2) — 15 — MOSI/IO11
21 — GND — PB4(MISO) — 16 — MISO/IO12
PB5(SCK) — 17 — SCK/IO13
GND — ATMEGA328P-AU

LED on pin 13
R3 1.5k
SCK1
LED Dialight 598-8110-107F
GND

AtMega Capacitors

BQ_OUT — C6 100nF — GND
BQ_OUT — C7 100nF — GND
BQ_OUT — C8 100nF — GND

X1
5 — 5 — ENCODER_BUTTON
4 — 4 — ENCODER_PIN_A
3 — 3 — ENCODER_PIN_B
2 — 2
1 — 1
Encoder Header
GND

K1
3 — BQ_OUT
2 — Data
1 — GND
RGB Strip

AVR ISP

5V — 1
P1
2
MOSI/IO11 — 3
MISO/IO12 — 4
GND — SCK/IO13 — 5
RESET — 6
TXD/IO1 — 7
RXD/IO0 — 8
Molex 15-91-2080

TotallyNotALiteSaber
Github.com/AnthoPham

RX TX
RST SCK
MISO MOSI
GND 5V

R2
SCK1
D1
C4
R1
R3
R6
C8
C7
C5
R10
R9
PGOOD
CHG
R4
C6
R5
C3
GND DAT PWR
C9
C2
C1

TMS
X1

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Github.com/AnthoPham