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Sheet: /
File: Nixie Clock.sch

Title: Root Sheet

Size: A Date: 2017-03-06
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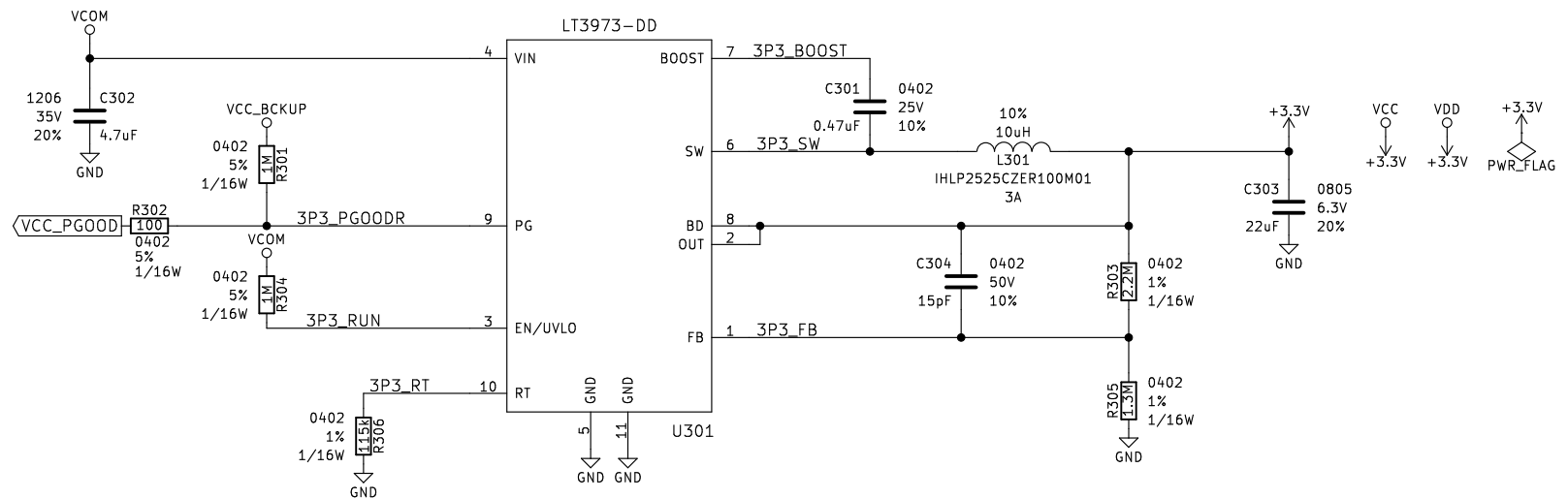
A



2

Id: 2/15

Monolithic Buck Switching Regulator with Burst Mode and PGOOD flag +3.3 Volts, 300mA @ 2.2MHz



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Sheet: /Controller Supply/
File: ControllerSupply.sch

Title: Controller Supply (Vdd and Vcc)

Size: A Date: 2017-03-06
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The image displays a detailed PCB layout for a Valve High Voltage Supply and a VVV PG00D Window Comparator. The layout is organized into a grid with labels A, B, C, D along the vertical axis and 1, 2, 3, 4, 5 along the horizontal axis.

Valve High Voltage Supply:

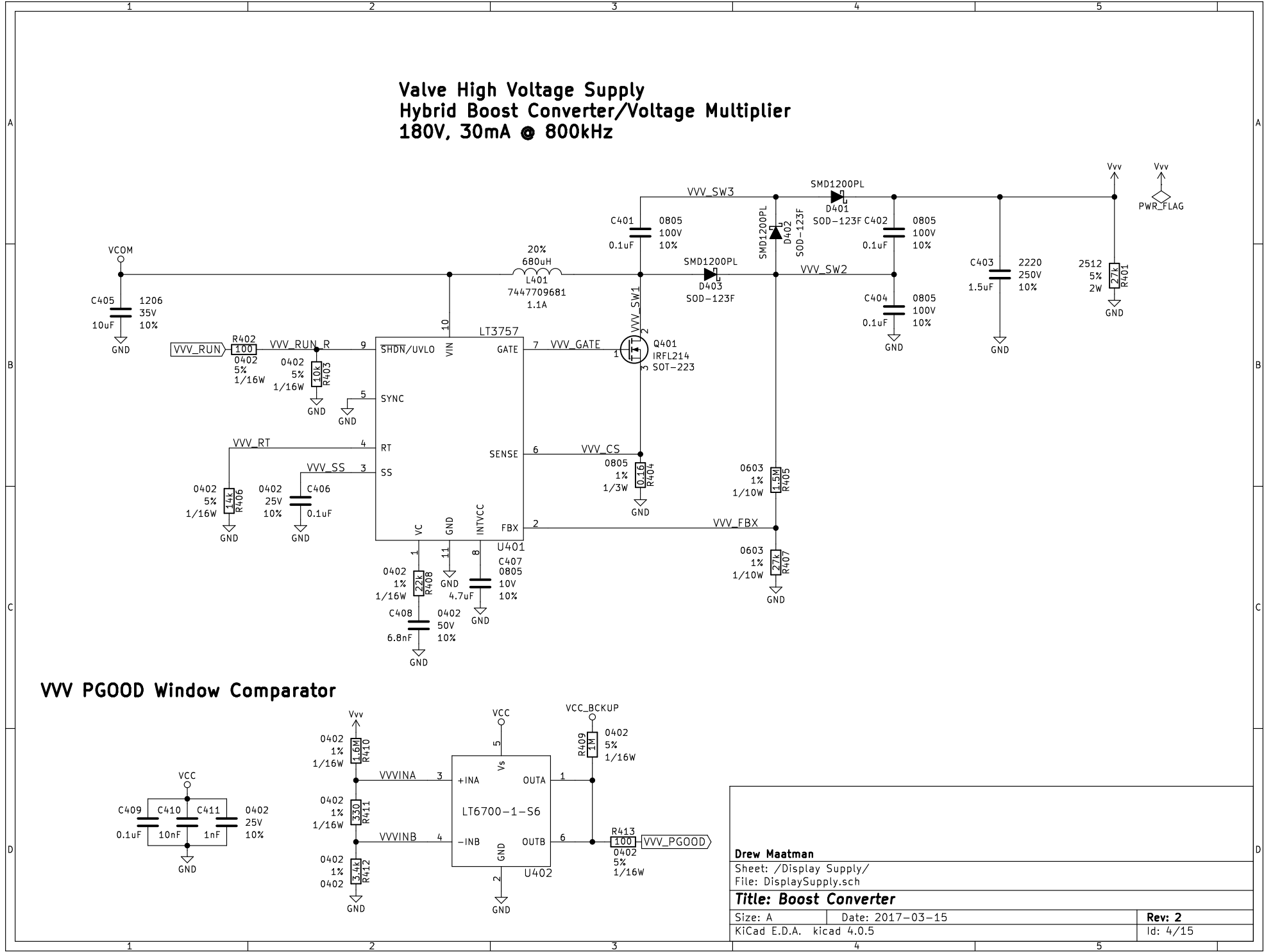
- ICs:** LT3757 (Hybrid Boost Converter/Voltage Multiplier), Q401 (IRFL214 MOSFET), U401 (C407 0805 10V 10% capacitor), U402 (LT6700-1-S6 Window Comparator).
- Power Section:** VCOM input, C405 (1206 35V 10% capacitor), VVV_RUN input, R402 (100 5% resistor), VVV_RUN_R, R403 (100 5% resistor), VVV_RT, R406 (14k 5% resistor), VVV_SS, C406 (25V 0.1uF capacitor), VVV_CS, C404 (0.1uF capacitor), VVV_FBX, R407 (27k 1% resistor), VVV_PG00D output.
- Control Section:** VVV_GATE, Q401 (IRFL214 MOSFET), VVV_SW1, VVV_SW2, VVV_SW3, D401, D402, D403 (SOD-123F diodes), SMD1200PL (SMD diodes), C401 (0.1uF capacitor), C402 (0.1uF capacitor), C403 (2220 250V 10% capacitor), C408 (50V 6.8nF capacitor), C409 (0.1uF capacitor), C410 (10nF capacitor), C411 (1nF capacitor).
- Other Components:** L401 (680uH inductor), R401 (2512 5% 2W resistor), R404 (1.5W 1% resistor), R405 (1.5W 1% resistor), R408 (22k 1% resistor), R409 (18k 5% resistor), R410 (1.6M 1% resistor), R411 (330 1% resistor), R412 (3.4k 1% resistor), R413 (100 5% resistor).

VVV PG00D Window Comparator:

- IC:** LT6700-1-S6 (Window Comparator).
- Inputs:** VVVINA, VVVINB, VVV_PG00D output.
- Outputs:** OUTA, OUTB.
- Power:** VCC, VCC_BCKUP, VCC (Vs).
- Other Components:** C409 (0.1uF capacitor), C410 (10nF capacitor), C411 (1nF capacitor), R409 (18k 5% resistor), R410 (1.6M 1% resistor), R411 (330 1% resistor), R412 (3.4k 1% resistor), R413 (100 5% resistor).

Legend:

- Size:** A
- Date:** 2017-03-15
- Rev:** 2
- Sheet:** /Display Supply/
- File:** DisplaySupply.sch
- Title:** Boost Converter
- KiCad E.D.A. kicad 4.0.5**

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Sheet: /Display Supply/ File: DisplaySupply.sch		
Title: Boost Converter		
Size: A	Date: 2017-03-15	Rev: 2
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BCD to Decimal Decoder

The schematic diagram illustrates a BCD to Decimal Decoder circuit. The central component is a 74HC4514 decoder chip. The inputs are BCD inputs (BCDA, BCDB, BCDC, BCDD) connected to pins A0, A1, A2, and A3. The enable pin (pin 1) is connected to a 'DecodeEN' signal through a 10k resistor (R602). The output pins (Y0-Y15) are connected to 'LowSideBase' signals (LowSideBase0 through LowSideBase9). The chip is powered by VCC (pin 24) and GND (pin 12). A pull-up resistor (R601, 10k) is connected to VCC and pin 23. A network of resistors (R603-R606, 10k) and capacitors (C601, C602, C603) is connected to the output pins. The output pins are also connected to a 10k resistor network (R607-R610) and a 10k resistor (R601) connected to VCC. The output pins are also connected to a 10k resistor network (R607-R610) and a 10k resistor (R601) connected to VCC.

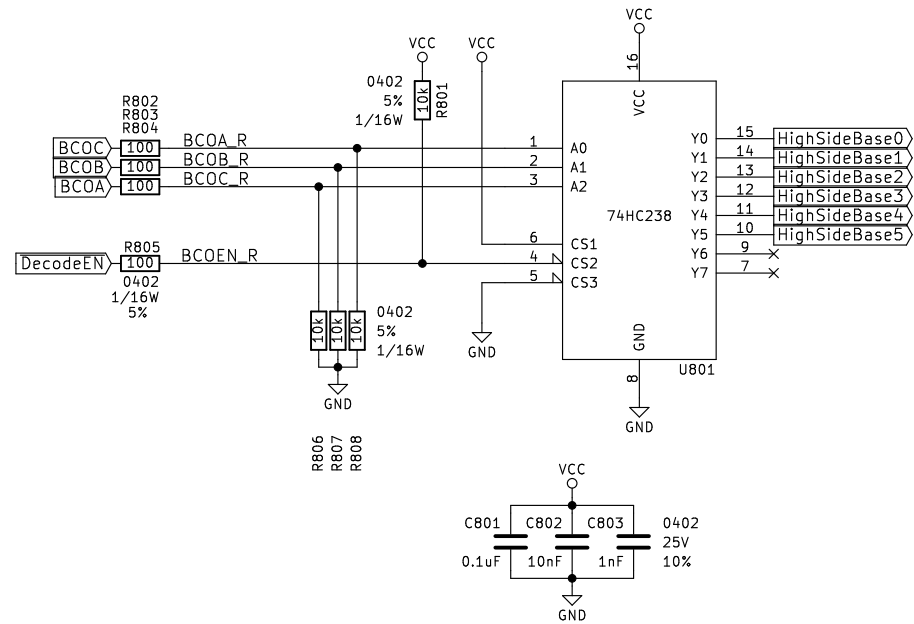
Drew Maatman		
Sheet: /Lowside Decoder/		
File: Decoders.sch		
Title: Lowside BCD Data Decoders		
Size: A	Date: 2017-03-06	Rev: 2
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Octal to Decimal Decoder



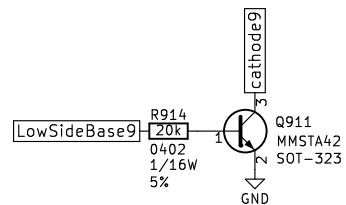
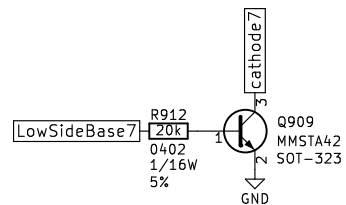
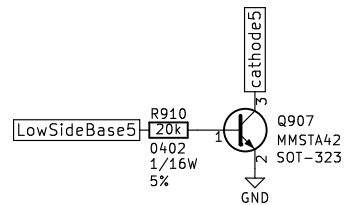
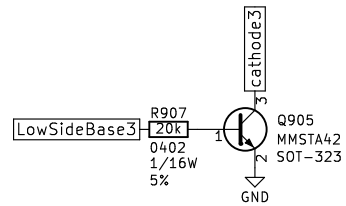
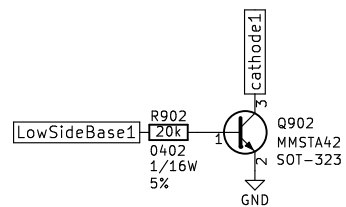
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Sheet: /Highside Decoder/
File: HighsideDecoder.sch

Title: High Side BCO Decoder

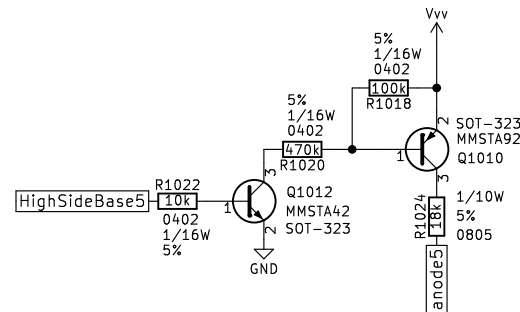
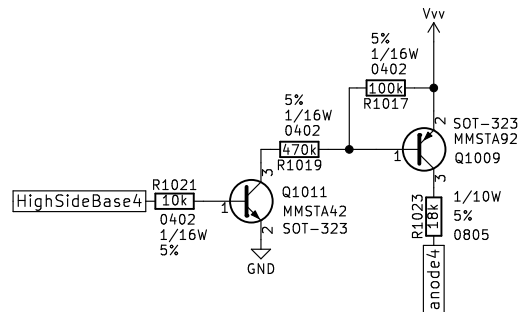
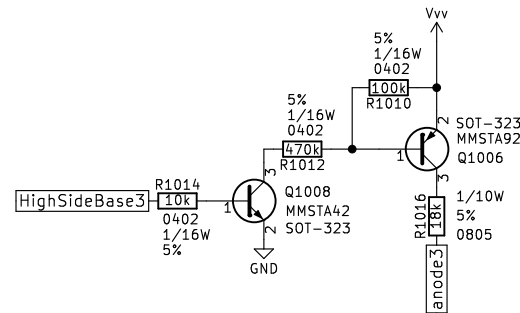
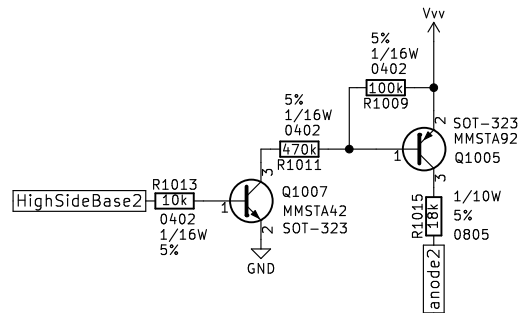
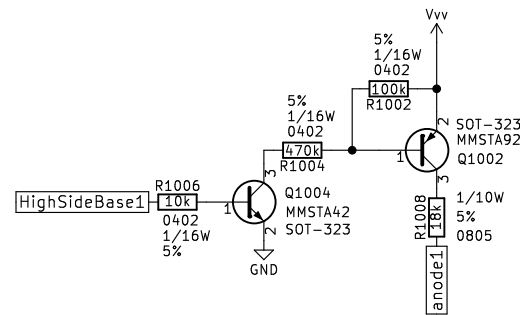
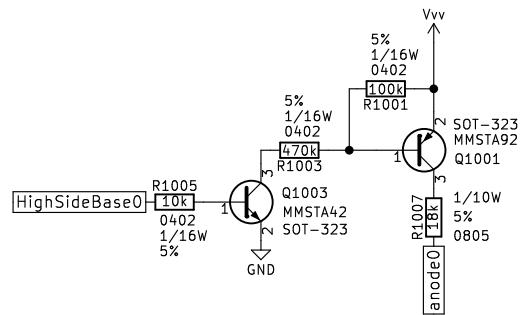
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High Side BJT Switches



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Sheet: /Highside Switches/
File: HighsideSwitches.sch

Title: High Side Anode Switches

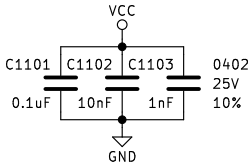
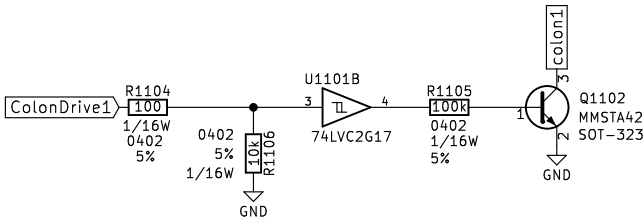
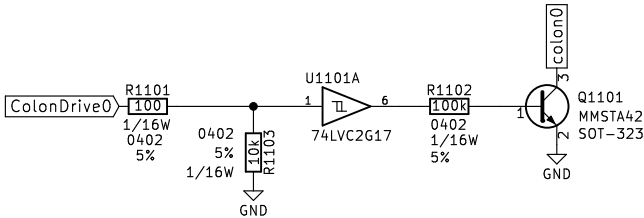
Size: A Date: 2017-03-06

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Rev: 2

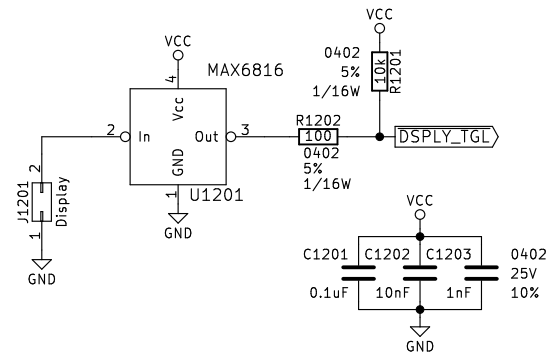
Id: 10/15

Colon Drivers/BJT Switches

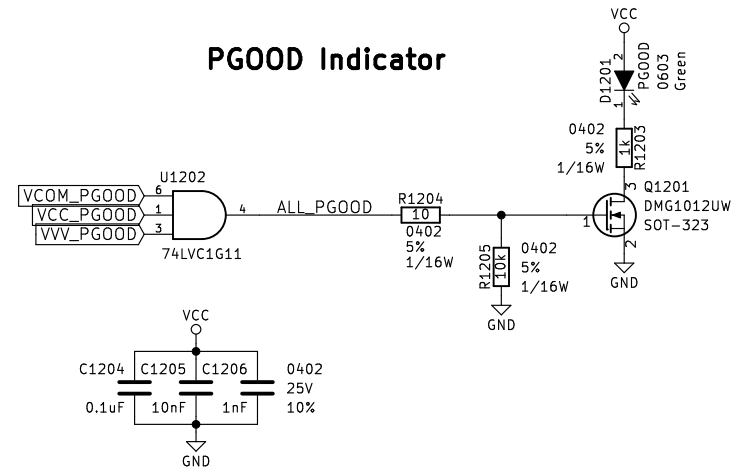


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Sheet: /Colon Switch/		
File: ColonSwitch.sch		
Title: Lowside Colon Switches		
Size: A	Date: 2017-03-06	Rev: 2
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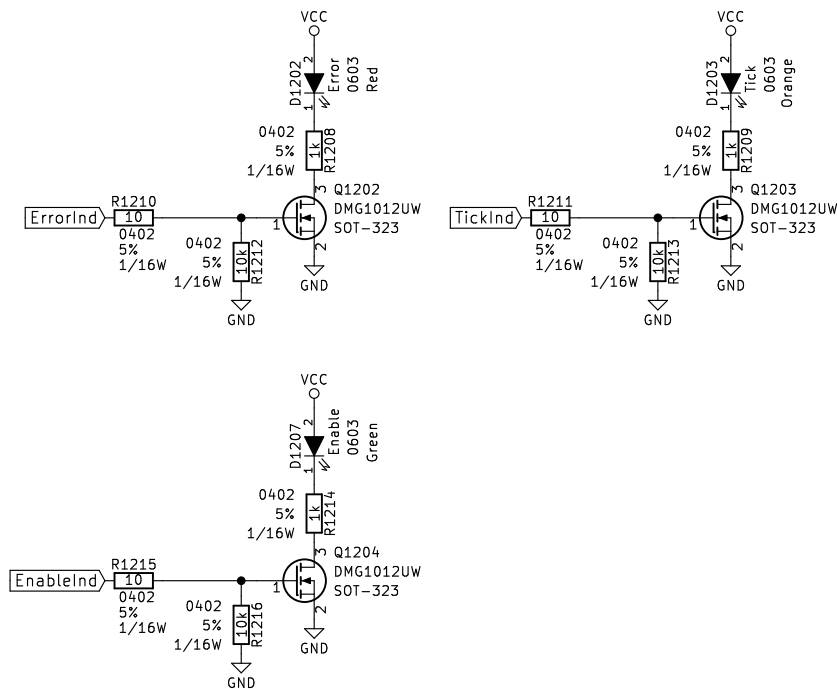
Display Toggle Pushbutton



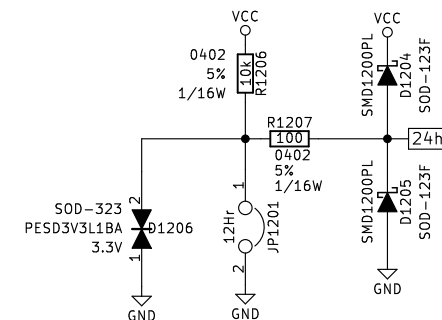
PGOOD Indicator



Status Indicators



24hr Set Jumper



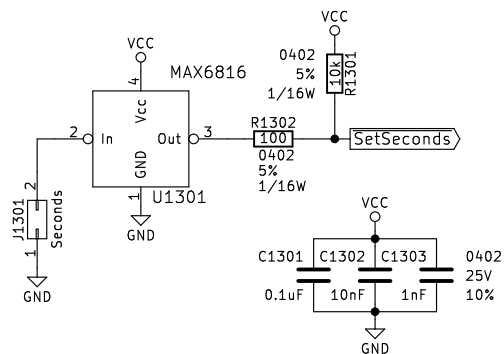
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Sheet: /Input/Output/
File: InputOutput.sch

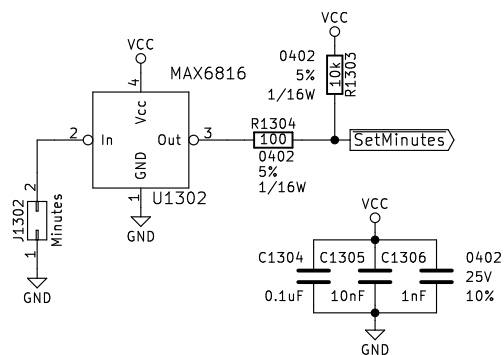
Title: Input/Output Facilities

Size: A Date: 2017-03-06
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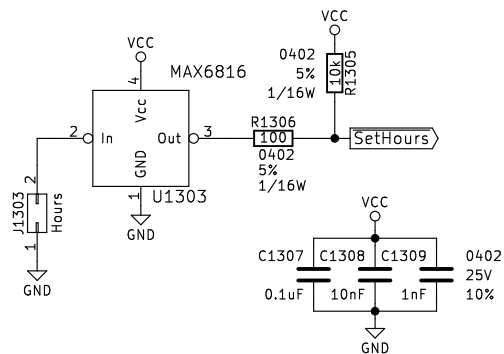
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Seconds Set Pushbutton



Minutes Set Pushbutton



Hours Set Pushbutton

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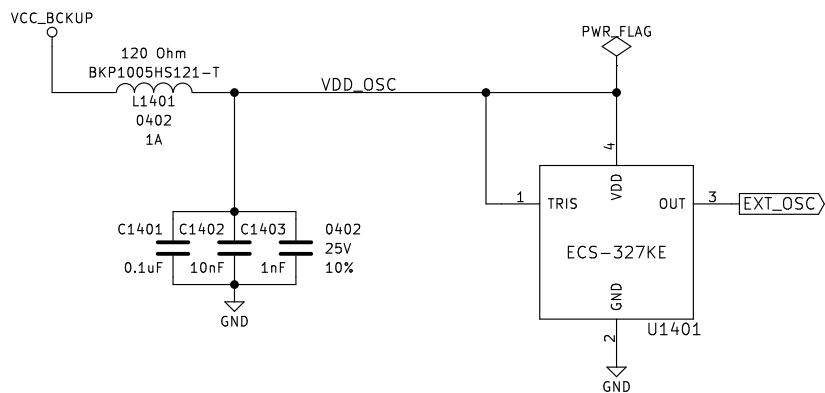
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File: TimeSet.sch

Title: Time Set Pushbuttons

Size: A Date: 2017-03-06
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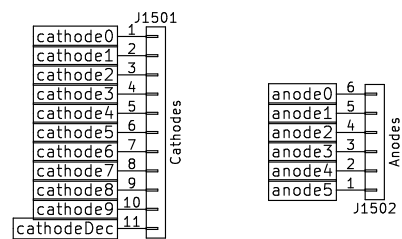
Rev: 2
Id: 13/15

Timekeeping Oscillator

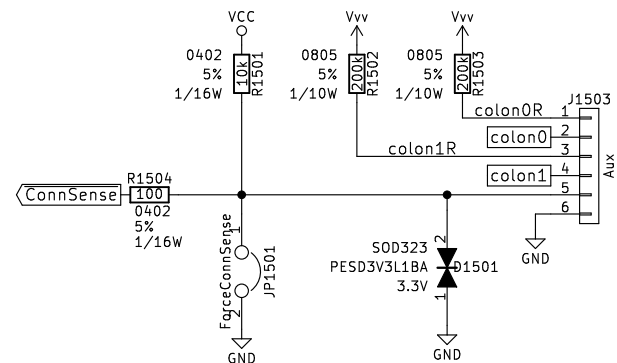


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Sheet: /External Oscillator/ File: ExternalOscillator.sch		
Title: External 32.768kHz CMOS Oscillator		
Size: A	Date: 2017-03-06	Rev: 2
KiCad E.D.A. kicad 4.0.5		Id: 14/15

Anode/Cathode Connectors



Aux Connector



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Sheet: /Connectors/
File: Connectors.sch

Title: Display Connectors

Size: A Date: 2017-03-06

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Id: 15/15