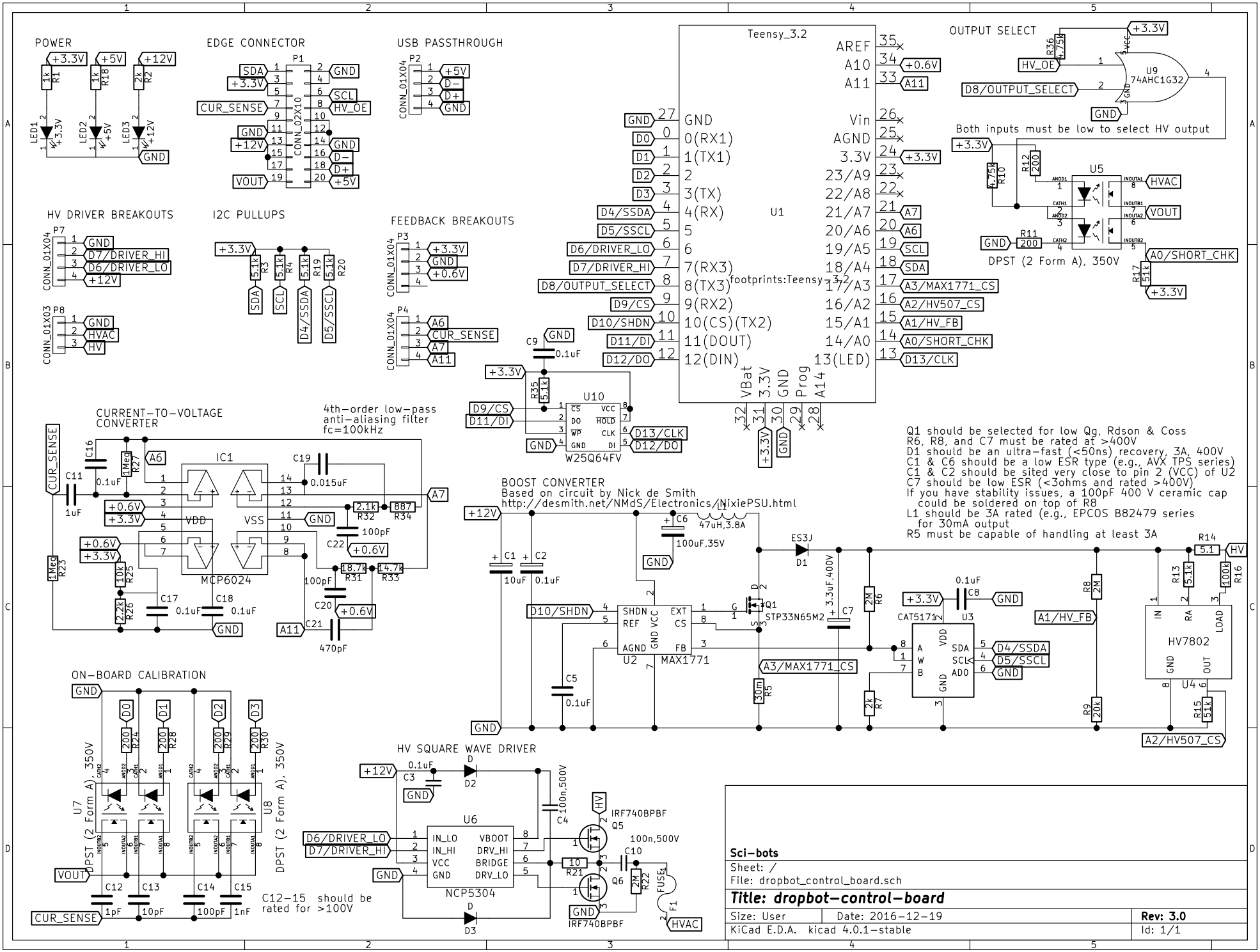
POWER
EDGE CONNECTOR
USB PASSTHROUGH
Teensy_3.2
OUTPUT SELECT
Both inputs must be low to select HV output
DPST (2 Form A), 350V
HV DRIVER BREAKOUTS
I2C PULLUPS
FEEDBACK BREAKOUTS
footprints:Teensy_3.2
CURRENT-TO-VOLTAGE CONVERTER
4th-order low-pass anti-aliasing filter fc=100kHz
MCP6024
W25Q64FV
BOOST CONVERTER
Based on circuit by Nick de Smith
http://desmith.net/NMdS/Electronics/NixiePSU.html
Q1 should be selected for low Qg, Rdson & Coss
R6, R8, and C7 must be rated at >400V
D1 should be an ultra-fast (<50ns) recovery, 3A, 400V
C1 & C6 should be a low ESR type (e.g., AVX TPS series)
C1 & C2 should be sited very close to pin 2 (VCC) of U2
C7 should be low ESR (<3ohms and rated >400V)
If you have stability issues, a 100pF 400 V ceramic cap could be soldered on top of R8
L1 should be 3A rated (e.g., EPCOS B82479 series for 30mA output
R5 must be capable of handling at least 3A
MAX1771
STP33N65M2
CAT5171
HV7802
ON-BOARD CALIBRATION
HV SQUARE WAVE DRIVER
NCP5304
IRF740BPBF
C12-15 should be rated for >100V
Sci-bots
Sheet: /
File: dropbot_control_board.sch
Title: dropbot-control-board
Size: User
Date: 2016-12-19
Rev: 3.0
KiCad E.D.A. kicad 4.0.1-stable
Id: 1/1