HOST CONNECTION AND CHAINING

J1 — I IN
JP8 — CHAIN P8 BRIDGED
JP9 — CHAIN P9 BRIDGED
J2 — I CHAIN

QWIIC AND I2C

J6 — QWIIC 3V3
J7 — ALT I2C HEADER

12V EFUSE

J3 — 12V DC IN
J4 — 12V LINK OUT
UF1 — TPS26600PWPR
CF1 100nF 25V X7R
CF2 100nF 50V X7R
CF3 1uF 50V X7R
R13 100k 1%
RF1 72.0k 0.1%
RF2 10k 0.1%
RF3 110k 0.1%
RF4 10k 0.1%
RF5 24.0k 1%
DF1 1N4148WS-7-F
DF10 BAT54WS-7-F
DF2 RED FAULT
SJF1 CUT FAULT LED
D1 B340A
D2 SMBJ15A
SJ2 12V TO REMOTE
D3 GREEN 12V
JP10 CUT 12V LED
R10 4.7k

LINK CAT5E (J5)

C1 100nF 16V X7R
C2 100nF 16V X7R
C3 10uF 16V X7R
C4 1nF 2kV X7R
J5 — LINK CAT5E
R9 1M
SJ1 SHIELD BOND

REVERSE POLARITY LAMP

QF1 — MMBT3904-7-F
QF2 — MMBT3904-7-F
CF4 10uF 16V X7R
CF5 10uF 16V X7R
RF12 47k 1%
RF13 47k 1%
RF14 10k 1%
RF15 10k 1%
DF7 BZT52C3V9S-7-F
RF11 4.7k 0.25W
DF6 1N4148WS-7-F
RF16 2.2k 1%
SJF3 CUT REVERSE LED
DF8 RED REVERSE

CABLE LINES

U2 — TPD4E1U06DBVR

OVERVOLTAGE CUTOFF

QF3 — BSS84-7-F
RF17 100k 1%
DF11 BZT52C12S-7-F

SUPPLY RAILS

PWR_FLAG ×3 (+3V3, +5V, GND)

I2C DIFFERENTIAL BUFFER

U1 — PCA9615DP
R14 47k 1%
JP11 EN FOLLOWS 12V
JP7 EN TO PIN 3
R3 604R 1%
R4 120R 1% 0.25W
R5 604R 1%
R6 604R 1%
R7 120R 1% 0.25W
R8 604R 1%

OVERVOLTAGE LAMP

UF2 — TL431BIDBZR
RF6 10k 1%
RF7 45.3k 0.1%
RFB 10k 0.1%
RF9 8.2k 0.25W
DF3 BAT54WS-7-F
DF4 BZT52C12S-7-F
DF9 BAT54WS-7-F
RF10 10k 0.25W
SJF2 CUT OV LED
DF5 RED OVERVOLTAGE

SUPPORT CIRCUITRY

JP1 PULLUP SDA
JP2 PULLUP SCL
R1 3k3 1%
R2 3k3 1%
D4 RED 5V
JP12 CUT 5V LED
R15 1k

TEST PADS

TP1 GND
TP2 +3V3
TP3 +5V
TP4 12V_PROT
TP5 SDA
TP6 SCL

CAD-checked prototype, not physically qualified
License: CERN-OHL-S-2.0
Smoothieware extension boards
Sheet: /
File: die-host.kicad_sch

Title: Differential I2C Extender, host	
Size: A1 — Date: 2026-11-26	**Rev: v02**
KiCad E.D.A. 9.0.8	Id: 1/1