

RJ45 & Transformer

Open drain LEDs set default to full-duplex on reset.

BOM DONE

[illegible]

Raspberry Pi Header

TH: Female Bottom or SMT Female Top Header
 SMT: Toby Electronics REF-182665-01/REF-182665-03
 TH: Digikey 1528-1385-ND
 Pin #s Match RPi. nostuff

Pin	Signal	Pin	Signal
1	RPI_3V3_1	2	RPI_VBUS
3	GPIO1_SDA1	4	RPI_VBUS
5	GPIO3_SCL1	6	GND
7	GPIO4	8	GPIO14_TXD0
9	GND	10	GPIO15_RXD0
11	GPIO17	12	GPIO18
13	GPIO27	14	GND
15	GPIO22	16	GPIO23
17	RPI_3V3_2	18	GPIO24
19	GPIO10_MOSI	20	GND
21	GPIO9_MISO	22	GPIO25
23	GPIO11_SCLK	24	GPIO8_CEO#
25	GND	26	GPIO7_CEO1#
27	GPIO0_ID_SD	28	GPIO1_ID_SC
29	GPIO5	30	GND
31	GPIO6	32	GPIO12
33	GPIO13	34	GND
35	GPIO19	36	GPIO16_CEO2#
37	GPIO26	38	GPIO20_MOSI
39	GND	40	GPIO21_SCLK

H1 H3
 hole-metalized-no4 hole-metalized-no4
 H2 H4
 hole-metalized-no4 hole-metalized-no4

+3V3

C17
 nostuff-0.1u
 W1 TEST_1P
 W2 TEST_1P
 R18 nostuff-1k
 U3
 A0 VCC
 A1 SDA
 A2 SCL
 7 WP
 R20 nostuff-1k
 R23 nostuff-3.9k
 GPIO0_ID_SD
 GPIO1_ID_SC
 nostuff-AT24CS32-SSHMM
 Housings_SSOP:TSSOP-8_4.4x3mm_Pitch0.65mm
 16-bit addressed I2C EEPROM, 32Kb+
 Stores RPi HAT configuration.
 GND

[illegible]

Raspberry Pi Power

Diagram illustrating the Raspberry Pi Power circuit, showing the connection of the 5V source, the PNP transistor (Q2), the PMOS transistor (Q3), the RPI_VBUS line, the linear regulator (U4, AP7365_SOT-23-5), and the 3.3V output.

Ideal Diode for RPi 5V Source

Q1: Low R_{ds} PFET like DMP3099L, 3A, $99m\Omega$ @ 4.5V V_{gs} .
 Q2: Matched PNP pair. Current mirror comparator pulls Q1 gate low (on) when $USB_VBUS_RVP > USB_VBUS$.

Extra Linear Reg. for 3.3V

Power ethernet phy whether we have PoE or not. Phy requires more power than allowed from RPi 3.3V.

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