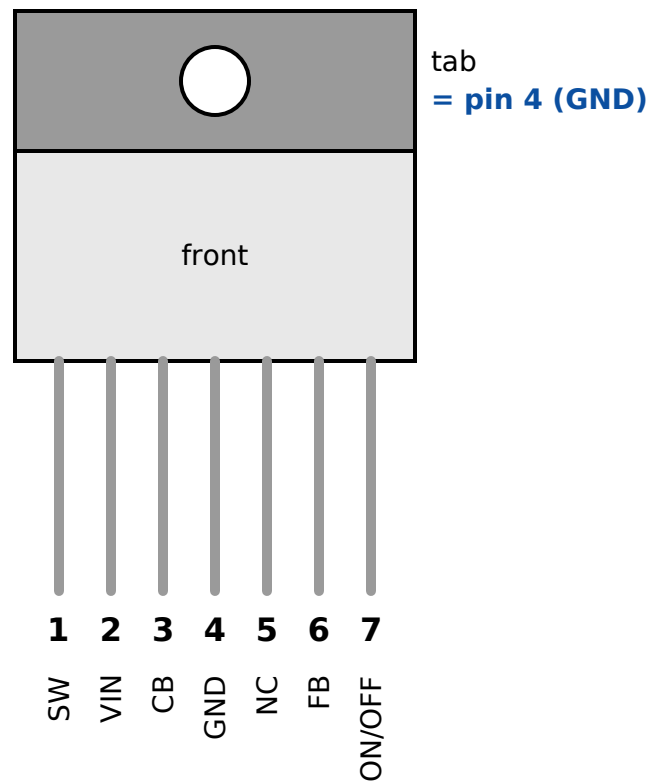


Pinout and wiring reference: single Raspberry Pi 5 supply (Rev B)

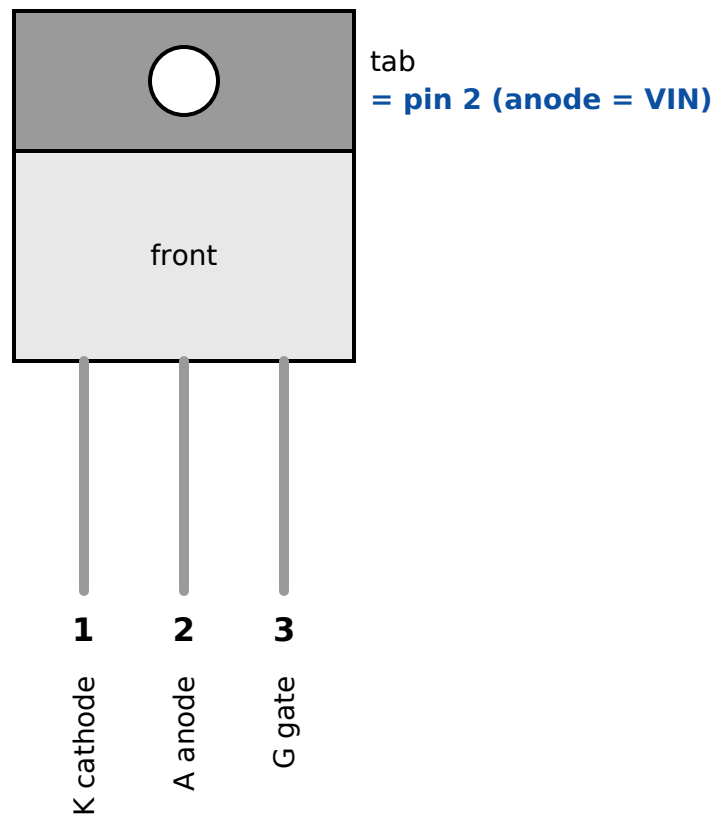
TO-220 and TO-92 parts are drawn from the FRONT (marking / flat face toward you, leads pointing down). Always confirm against the part in your hand.

U1 LM2678T-ADJ (TO-220-7, TI NDZ)



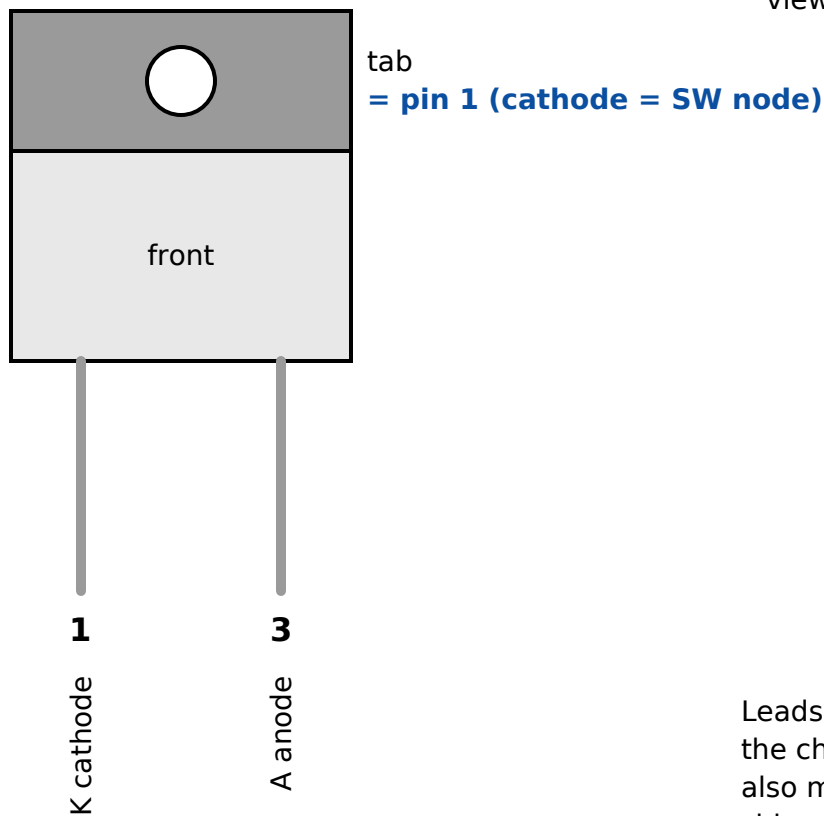
Lead pitch 1.27 mm (0.050 in). Pins 1, 3, 5, 7 are formed 5.08 mm (0.200 in) away from pins 2, 4, 6, so each row is on a 0.1 in pitch but the rows are offset 0.05 in: drill or open up holes for one row. Pin 7 ON/OFF: leave open (internal pull-up). C6 0.01 μ F from pin 3 to pin 1.

Q1 2N6504G SCR (TO-220AB)



Tab is the anode, at VIN: no heatsink needed, but keep the tab clear of other parts. K (1) to 0 V, A (2) to VIN, G (3) to R9. R5 1 k Ω and C8 0.1 μ F go directly from G (3) to K (1) at the device.

D1 MBR1045G Schottky (TO-220AC)

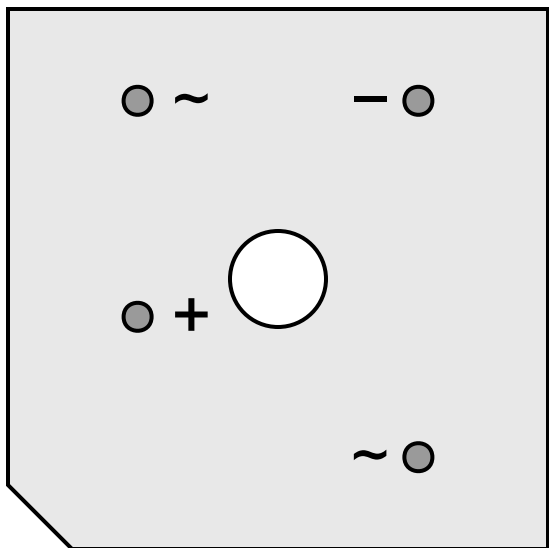


Two-lead TO-220: there is no pin 2. K (1, tab) to U1 pin 1 (SW) and L1. A (3) to 0 V, right beside C3 and U1 pin 4.

**⚠ HS2 is at the switching node:
0 to $\approx$ 23 V square wave at 260 kHz.
Insulate or space it 3 mm from everything.**

BR1 GBPC3510W (wire leads)

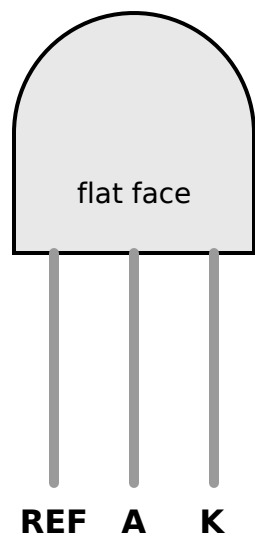
view of the LEAD side (as in the datasheet outline)



chamfered corner = + side

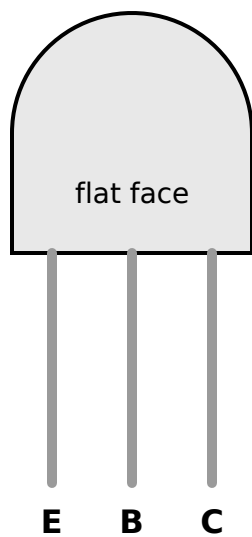
Leads: AC ~ top-left and bottom-right; DC + near the chamfered corner; DC - top-right. The + is also marked on the case. Seen from the component side of a board, the layout is mirrored. Metal base is isolated from the leads: bolt it to a finned heatsink $\leq$ 5 $^{\circ}$ C/W with paste ($\approx$ 4 W).

U2 TL431AILP (TO-92)



Left to right, flat face toward you: REF, ANODE, CATHODE. Pin NUMBERS differ by maker: TI LP package 1 = K, 2 = A, 3 = REF; onsemi 1 = REF, 2 = A, 3 = K. The physical order is the same. A to 0 V, REF to R4/R7, K to R10.

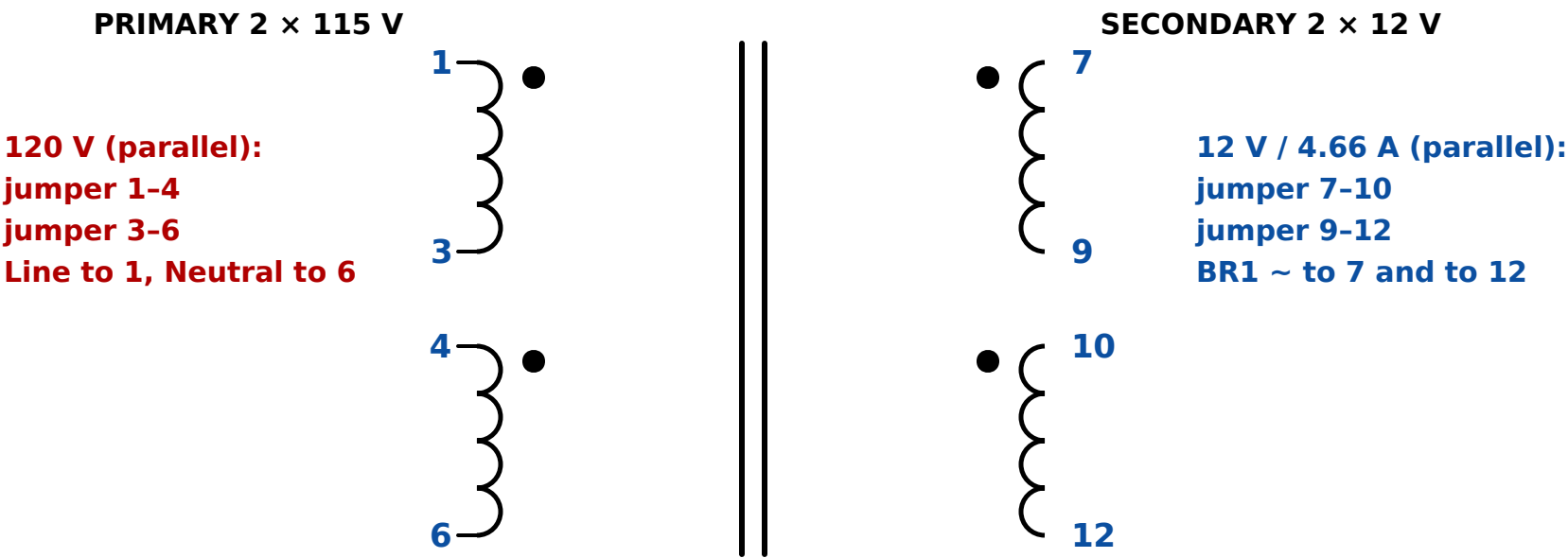
Q2 2N3906 PNP (TO-92) new



Left to right, flat face toward you: EMITTER, BASE, COLLECTOR (pins 1, 2, 3). E to VOUT sense, B to R10/R11, C to R9. Check your maker's sheet; some TO-92 PNPs (e.g. BC327) differ.

T1 Triad VPP24-2330 (56 VA, PC mount): pin numbers and parallel jumpers

schematic from the Triad datasheet (top view); pins 2, 5, 8 and 11 are not fitted



● marks the start of each winding (Triad's series hookup, 3 to 4 and 9 to 10, puts 1/4 and 7/10 in phase). Check before you parallel: with only 1-3 powered (via a dim-bulb tester), join 1 to 4 and measure 3 to 6. $\approx$ 0 V AC = correct; $\approx$ 230 V = reversed. Then join 7 to 10 and measure 9 to 12: $\approx$ 0 V correct, $\approx$ 24 V reversed. Triad specs: 4000 V AC hipot primary to secondary; 25% regulation ($\approx$ 15 V AC unloaded at 115 V).