

# General purpose power supply

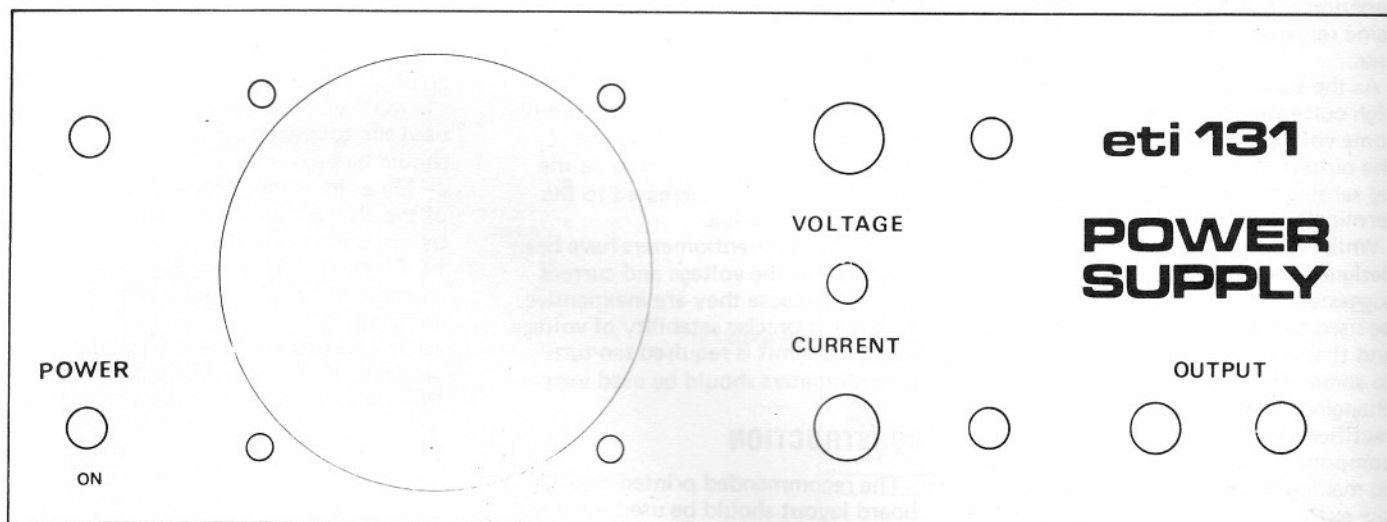


Fig. 9. Artwork for the front panel. Full size 224 x 82 mm.

insulate the terminals and then mount the switch onto the front panel.  
g) Assemble the heatsink and screw it onto the rear of the chassis via two bolts — then mount the power transistor using insulation washers and silicon grease.

h) Mount the assembled printed-circuit board to the chassis using 10 mm spacers.

i) Wire the transformer secondary, rectifier diodes and filter capacitors. The diode leads are stiff enough not to need any additional support.

j) The wiring between the board and the switches may now be made by connecting points with corresponding letters on the front panel diagram and component overlay diagrams.

The only setting up required is to calibrate the meter. Connect an accurate voltmeter to the output terminals and wind up the voltage control of the power supply until the external meter reads 15 volts (or 30 volts on the alternate arrangement). Switch the internal meter to read volts and adjust RV4 to obtain the same reading.

To set up the current reading first wind the supply voltage down to zero and connect an accurate ammeter across the output. Wind up the voltage control and observe that the current limit LED is on. Now adjust the current limit control so that the external meter indicates two amps (or one amp on the alternative unit). Now adjust RV2 so that the same reading is obtained on the internal meter when it is switched to the current position.

## PARTS LIST — ETI 131A

### Resistors

|    |   |          |     |    |
|----|---|----------|-----|----|
| R1 | — | 1 k      | ½ W | 5% |
| R2 | — | 1 k      | "   | "  |
| R3 | — | 1 k5     | "   | "  |
| R4 | — | 10 k     | "   | "  |
| R5 | — | 0.22 ohm | 5 W |    |

|     |   |      |     |    |
|-----|---|------|-----|----|
| R6  | — | 10 k | ½ W | 5% |
| R7  | — | 1 k  | "   | "  |
| R8  | — | 1 k  | "   | "  |
| R9  | — | 1 k  | "   | "  |
| R10 | — | 1 k  | "   | "  |

|     |   |      |   |   |
|-----|---|------|---|---|
| R11 | — | 47   | " | " |
| R12 | — | 18 k | " | " |
| R13 | — | 5 k6 | " | " |
| R14 | — | 15 k | " | " |

### Potentiometers

|     |   |                 |
|-----|---|-----------------|
| RV1 | — | 10 k lin rotary |
| RV2 | — | 1 k trim        |
| RV3 | — | 10 k lin rotary |
| RV4 | — | 10 k trim       |

### Capacitors

|    |   |                     |
|----|---|---------------------|
| C1 | — | 2500 µF 35V electro |
| C2 | — | 2500 µF 35V electro |
| C3 | — | 68 pF ceramic       |
| C4 | — | 150 pF "            |
| C5 | — | 820 pF "            |
| C6 | — | 68 pF "             |
| C7 | — | 68 pF "             |
| C8 | — | 47 µF 50V electro   |

### Transistors

|    |   |                              |
|----|---|------------------------------|
| Q1 | — | BC559                        |
| Q2 | — | BC547                        |
| Q3 | — | BD140                        |
| Q4 | — | 2N3055 (with insulation kit) |

### Diodes

|      |   |        |
|------|---|--------|
| D1,2 | — | IN5404 |
| D5   | — | IN914  |

### Other Semiconductors

|         |                    |                 |
|---------|--------------------|-----------------|
| ZD1     | Zener Diode        | 5.1V 400 mW     |
| LED 1,2 | LED                | 5023 or similar |
| IC1     | Integrated Circuit | LM341P-12       |
| IC2,3   | "                  | CA3130          |

### Miscellaneous

PC board ETI 131  
Transformer 40V CT 2A A&R 5755  
SW1,2 switch DPDT toggle  
Meter 1 mA FSD scaled 0-20V, 0-2.5A  
Chassis to Fig. 11  
Cover to Fig. 13  
Heatsink to Fig. 10  
Front panel to Fig. 9  
Two terminals  
Power cord & clamp  
Two knobs  
Four 10 mm long spacers  
20 PC board pins  
Four rubber feet  
nuts, bolts, washers etc.

## PARTS LIST — ETI 131B

All parts for ETI 131A except

|        |     |    |          |
|--------|-----|----|----------|
| Change | R3  | to | 1 k8     |
|        | R5  | to | 0.47 ohm |
|        | R12 | to | 39 k     |
|        | R14 | to | 33 k     |
|        | RV4 | to | 25 k     |

Complete kits of components for this project can be obtained from Nebula Electronics Pty Ltd, 4th Floor, 15 Boundary St, Rushcutters Bay (telephone 33-5850).