DAVTREND LIMITED
ELECTRONIC ENGINEERS

POWER SUPPLIES
AND SYSTEMS
DESIGN AND MANUFACTURE

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DRAE 6 AMP POWER SUPPLY

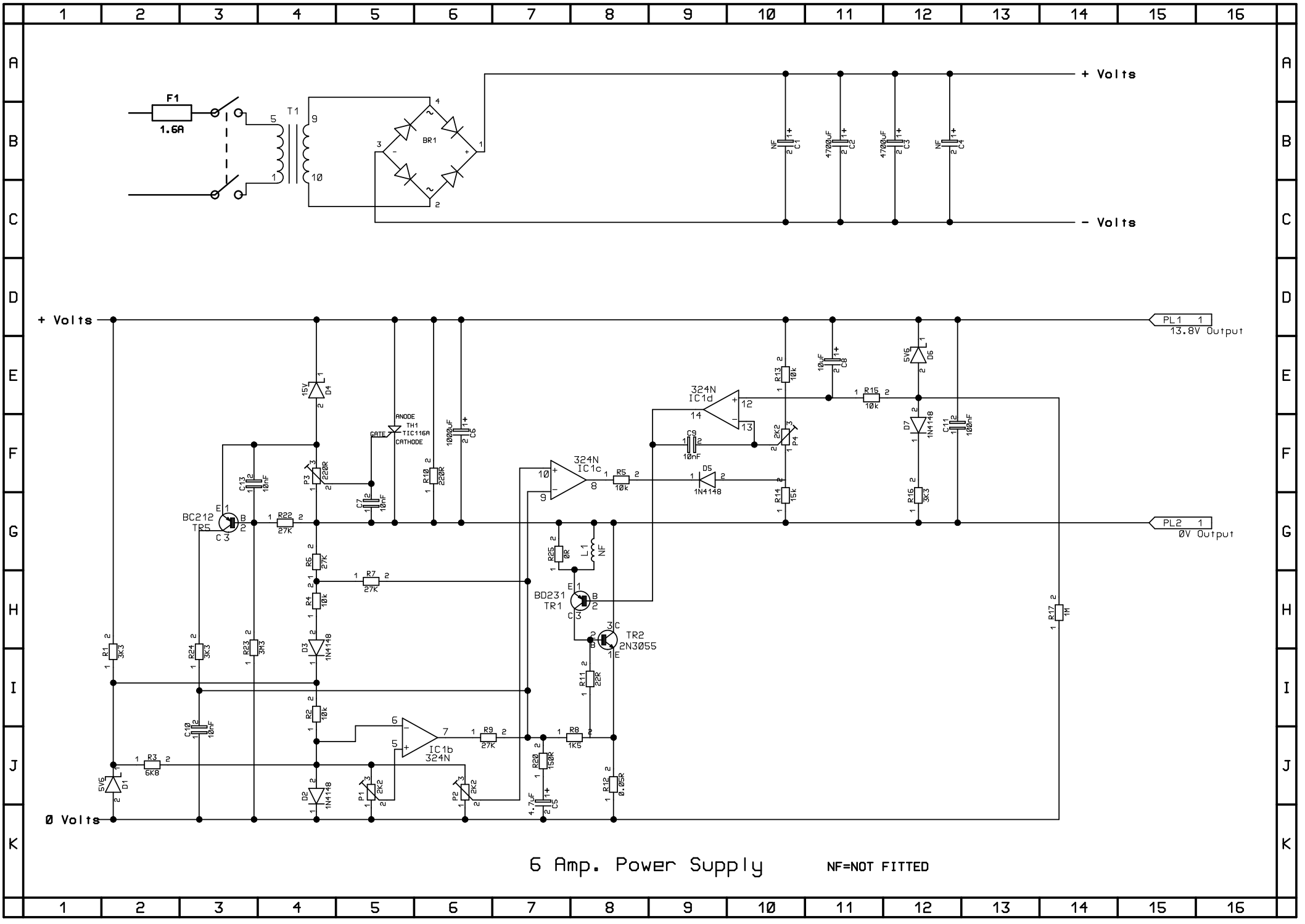
This Power Supply is specifically designed to operate mobile transceivers. It will supply 6Amps continuously (10 Amps surge), during transmit at 13.8V. If used at full power, the transmit periods should be limited to 15 minutes or the thermal protection may reduce the available current. The Power Supply must always be operated with a free flow of air into the base and out of the top of the cover. Although the supply has thermal protection, operation of any electronic equipment at high temperatures reduces the reliability.

CIRCUIT DESCRIPTION

Regulation is provided by IC1d which uses D6 as a reference. TR1 and TR2 boost the output of IC1d to 6 Amps. P4 sets the output to 13.8V. IC1c operates the current limit when the voltage across R12 rises above the reference from P2.

R4, R6 and R7 foldback the current limit to protect TR2 from a short circuit. C5 and R20 allow a high, but safe, surge current by averaging the voltage from R12. If the temperature rises above 90 deg C (approx) the voltage across D2 will drop below that of P1. IC1b then reduces the current limit.

In the unlikely event of a failure, it is possible for the output to rise above 14V. If the voltage exceeds 16V, D4 will turn on TH1, clamping the output to 1V or less. Should TH1 have been tripped accidentally, TR5 will cut off the current to TH1 and allow the supply to automatically reset.


F1
1.6A
T1
BR1
+ Volts
- Volts
0 Volts
PL1 1
13.8V Output
PL2 1
0V Output
BC212
TR5
BD231
TR1
TR2
2N3055
324N
IC1a
IC1b
IC1c
IC1d
TIC116A
ANODE
GATE
CATHODE
1N4148
6 Amp. Power Supply
NF=NOT FITTED