100 WATTS HI-FI CLASS-D POWER AMPLIFIER PARTS LIST:
ONE CHANNEL LISTED

ALL RESISTORS ARE 0.25W 5% UNLESS NOTED

RESISTORS:
R1, R6 = 100R
R2 = NA
R3, R8, R32, R33, R64 = 10R
R4, R10 = 750R
R5, R11 = 1.5k
R7, R12 = 620R
R9, R15, R20, R24 = NA
R27, R42, R45, R46 = 1k
R30, R31, R34 = NA
R35 = 4.7k
R36 = 470R
R37 = 1.2K
R38 = NA
R39, R44, R57, R62 = 10K
R40 = 47K
R41 = 2.2K
R43 = 270k
R44 = 68K
R54 = 220R
R58 = 18K
R59 = 100K
R7, R12 = 600R 1W (two 1.2k 0.5W resistors in parallel)
R53, R56 = 75R 5W wire-wound
R55 = 100K Trim-pot.

CAPACITORS:
C1, C2, C5, C22, C27 = 220uF/25-35V radial electrolytic
C3 = NA
C4 = 4.7uF/50V radial electrolytic
C6 = 0.01uF/50V Ceramic
C7 = NA
C13, C15 = 0.0022uF/50V stacked-film
C14 = 0.022uF/50V stacked-film
C16 = 0.1uF/50V ceramic
C19 = 0.1uF/100V polyester film

C20, (C28, C29) C21 = 10000uF/35V upright electrolytic
or 4x 4700uF/35V
C23, C26 = 10uF/25V radial electrolytic
C24, C25 = 0.1uF/50V ceramic

MISCELLANEOUS:
L1 = 60uH high current output inductor
LD1 = T1-3/4 green LED
LD2 = T1-3/4 red LED

SEMICONDUCTORS:
Q1 = MTP8P10 or IRF9530 P-channel POWER MOSFET
Q2 = IRF530 N-channel POWER MOSFET
Q9, Q12, Q13 = PN2907A PNP Transistor
Q10, Q11, Q14, Q15 = PN2222A NPN Transistor
U1 = LM311 comparator Ic
U2 = NE555 Timer Ic
U3 = LM381 or similar low noise (dual for stereo) op-amp
CR1, CR2 = BYW-29-100 or similar ultra-fast 200V 8A diode
CR5, CR6 = 1N4148
CR7 = 1N4002
CR10, CR11, CR14, CR15 = 1N4742 Zener Diode 12V 1W
CR16, CR17 = MR504 or 1N5404 Diode
CR20 - CR23 = 3A 200V Rectifier Bridge or Diodes
CR24 = 1N5351 Zener Diode 14V 1W

POWER SUPPLY:
T1 Power Transformer:
117/230VAC primary, 50VAC CT (2x25V) 1.5A (3A for stereo) secondary winding
Line Fuse F1 = 1A Slow (2A stereo)
EMI Filter = power entry filter 3-6 Amps with IEC receptacle (ea. 03AC1)

CLASS D - Digital Audio Amplifier

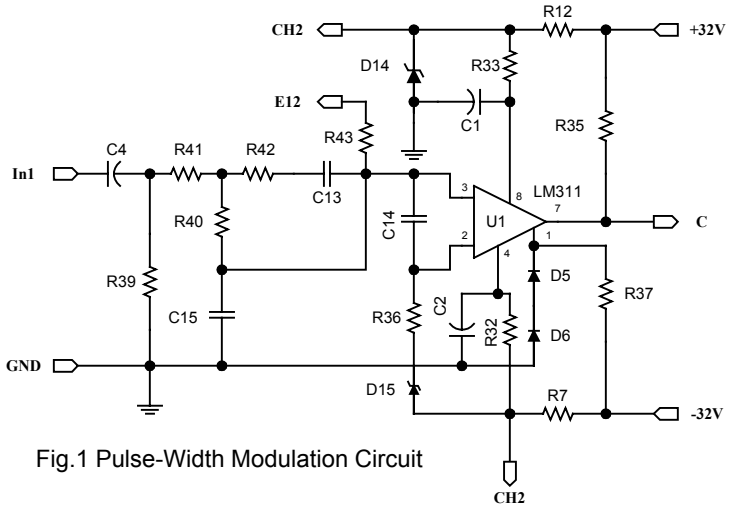

Fig.1 Pulse-Width Modulation Circuit

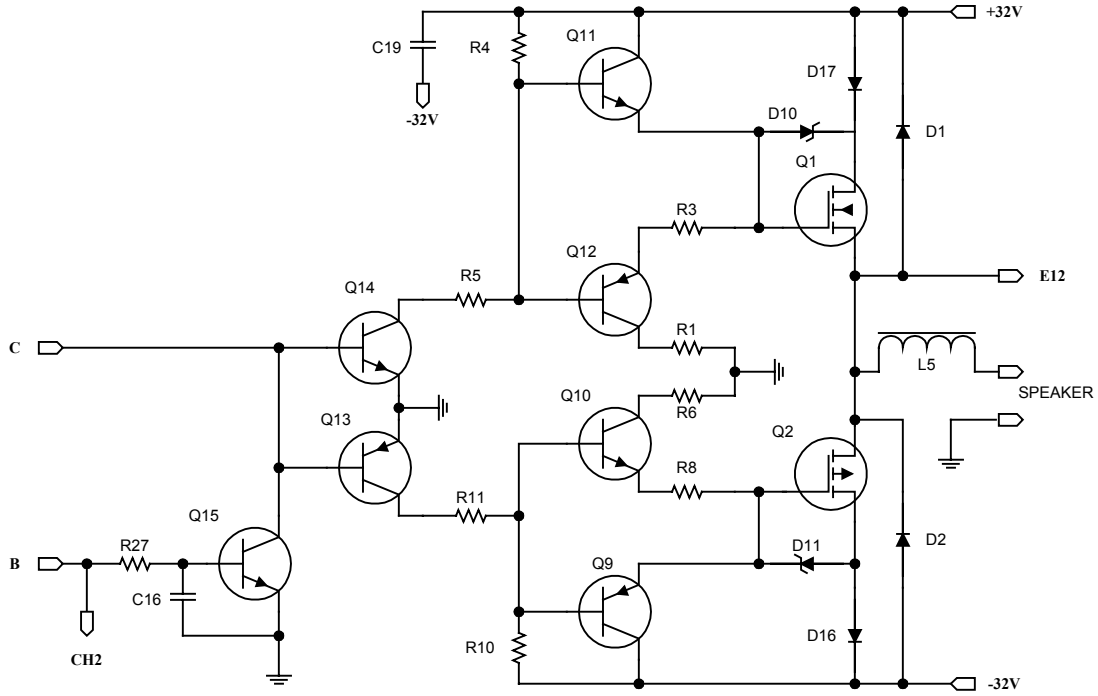

Fig.2 Driver and PA Stages

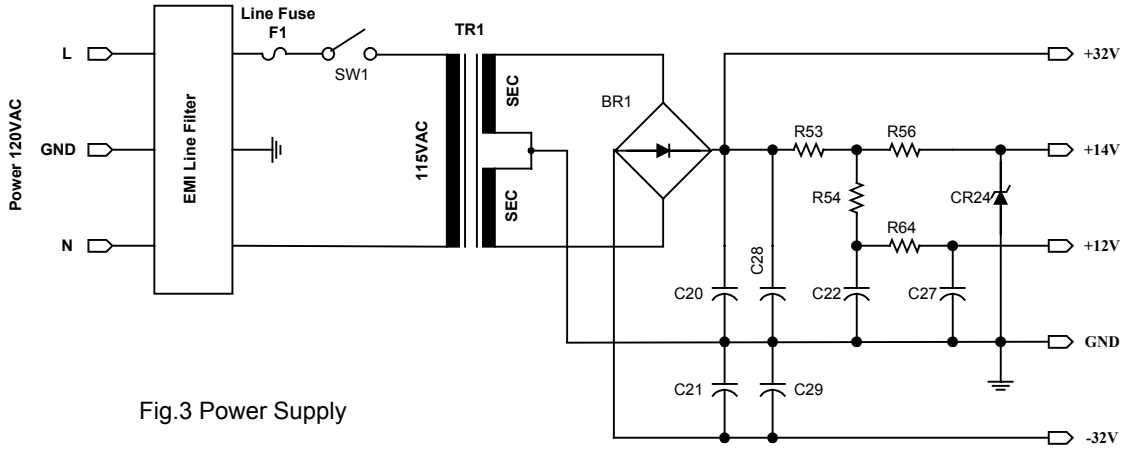

Fig.3 Power Supply

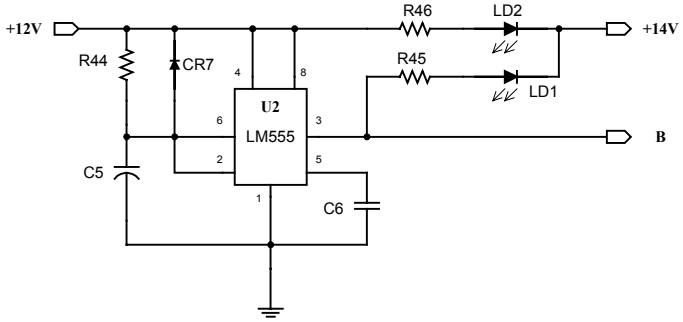

Fig.4 ON-Delay Circuit

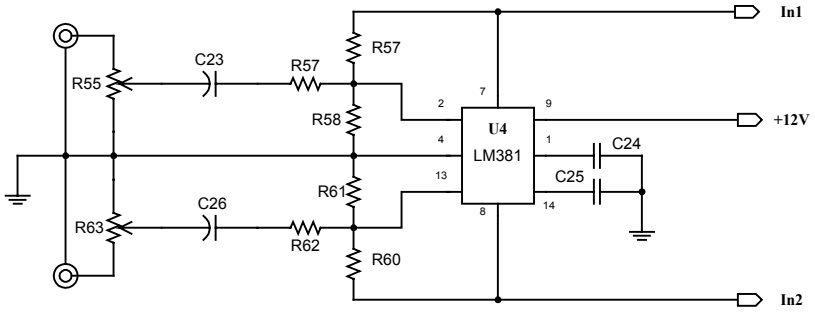

Fig.5 Optional Pre-Amplifier

Based on an article published in “Modern Electronics” 12/1987.