

SIMPLE PFC & FULL BRIDGE SMPS FOR CLASS AB AMPLIFIER SUPPLY.(330W Continuous)
Vin = 90-265VAC; Vout = +/-40V at 330W

FULL BRIDGE TRANSFORMER:

Ferrite core set is Epcos/TDK ETD44/22/15 (Material = N87) (Part number = B66365G0000X187)

Centre leg is gapped to 0.1mm.

$L_{pri}=1.9\text{mH}$; $L_{sec1} = 211\mu\text{H}$; L_s

Primary is 36 turns In total, Secondary is 24

(Enammelled copper wire is used)

There are 4 full layers altogether.

There are 2 equal primary layers & 2 equal secondary layers.

These interleave each other..PRI/SEC/PRI/SEC

(This reduces leakage)

Each primary layer is 18 turns of 2_strands_of_SWG25.

Each secondary layer is 12 turns of 2_strands_of_SWG21.

This makes as full use as possible of the bobbin length.

(obviously there are 3mm margins for isolation purpose.)

The requisite isolatory tape layers are used between layers.

Primary current is 1.8A RMS; Secondary current is 2.6A RMS

Leakage measured at primary with secondaries short circuit

should be no more than 30uH. ($k>0.992$).

(Leakage should be as low as possible.)

Allow for peak primary magnetising current of 0.7A peak

(Switching frequency of SMPS is 117KHz)

Requisite layers of tape between layers for isolation.

The primary coil current puts the field

to that of the secondary coil current.

