

## Simplified High Voltage Ferrite Transformer T1 Design for Half Bridge Circuit as Shown

1. Select switching frequency..Usually around 25 kHz
2. Determine cross sectional area of core in square cm  
Locate a suitable plastic tube to use as a winding form
3. Determine operating DC voltage...usually  $1.4 \times 115 = 160$  vdc or 320 vdc if you voltage doubler
4. Determine number of primary turns required to support 80 or 160 VDC....  $1/2$  of DC voltage. Use formula  
$$N = (E \times t \times 10e8) / (B \times A)$$
 Set B flux to 2000 as this is the approximate value of these cores.
5. Locate a suitable plastic tube to use as a winding form. This should snugly fit around the core halves
6. These are the turns for the primary and should be #20-22 wire
7. Wind secondary with turns required for your open circuit voltage. Use appropriate size wire for secondary current and use high voltage winding techniques dependent on your voltage level.
8. Air cap cores starting with one layer of scotch tape. Add layers as need to final adjust frequency and output
9. Sample schematic is for 10,000 volt plasma driver and has is shown wired for 360 VDC rail to rail

### PVM400 115 vac basic 709

