### PARTS LIST - Inductors

- **L1**: Core - from old TV flyback transformer
  - About 1 CM^2 cross section area.
  - Winding 245 turns # 21 AWG or as needed to obtain 56 mHy with no air gap in core.
  - Adjust core air gap for 11.6 mHy inductance with no DC in winding.

### PARTS LIST - Miscellaneous

- **F1**: 15 Ampere fuse
- **FL1**: 15 Amp noise filter (from old computer power supply)
- **K1**: DPDT 20 Ampere relay
- **K2**: 3 Second Time Delay to ON, DPST 5 Ampere relay
- **M1**: 1 mA FS, marked 0 - 15 VDC, Radio Shack 270-1754
- **S1**: SPST 20 Ampere switch
- **Y1**, **Y2**: 4 W 130 V “nite-lite” bulbs

### PARTS LIST - Resistors

- **R1**: 5 Ohms 10 W
- **R2**, **R3**: 22 Ohm 1/4 W
- **R4**: 47 Ohm 25 Watt
- **R5**: 2500 Ohms 100 W
- **R6**: 20 Ohms 50 W
- **R7**: 15 x 100 K 1/4 W in series. (HV metering)
  - (Trim value as needed to make M1 read 0-1500 V)
- **R8**: R11 - 470 Ohms 1/2 W
- **R12**: 33 K 1/4 W
- **R13**, **R34**, **R35**: 100 K 1/4 W
- **R15**: 5100 + 270 Ohms in series
  - (adjust for an oscillator frequency of 27 KHz)
- **R16**: 3900 Ohms 1/4 W
- **R17**, **R19**: 120 K 2 W
- **R20**: 12 K 1 W
- **R21**: 3900 Ohms + 220 Ohms 1/4 W in parallel
  - (adjust for +10.5 V output)
- **R22**: 2700 Ohms 1/4 W
- **R23**: 1000 Ohms 1/2 W
- **R24**, **R25**: 3900 Ohms 1/4 W
- **R26**: 43 Ohms 5 W (T3 loading- see text.)
- **R29**: 270 Ohms 1/4 W
- **R30**: 390 Ohms 1/4 W
- **R31**, **R33**: 820 Ohms 1/4 W
- **R32**: 1500 Ohms 1/4 W
- **R34**: 8200 Ohms 1/4 W
- **VR1**: 4700 Ohms
- **VR2**, **VR3**: 10 K Ohms

### PARTS LIST - Capacitors

- **C1**: 12 uF - 250 V poly film (6 x 2 Uf - 250 V from old computer power supplies)
- **C2**: 4700 pF - 1 KV disk (from old computer power supply)
- **C3**, **C4**: 4080 uF - 200 V electrolytic (6 x 680 Uf -250 V from old computer power supplies)
- **C5**: 600 pF - 2500 V Mica (see text)
- **C6**: 2 uF (2 x 1 uF - 2000 VAC from old microwave ovens)
- **C7**: 1.0 uF Mylar
- **C8**: 4400 pF - 50 V Disk (4700 pF OK)
- **C9**: 470 uF - 35V Electrolytic (mount close to U1)
- **C10**: (not used)
- **C11**: 220 uF - 25 V (tantalum preferred)
- **C12**: 2200 uF - 50 V electrolytic
- **C13**: .01 uF 50 disc
- **C14**: 4.7 uF 16 V Electrolytic
- **C15**: 330 uF 16 V Electrolytic
- **C16**, **C17**: 1000 uF 10 V Electrolytic
- **C18**: 1000 pF Disk

### PARTS LIST - Diodes, Transistors & Integrated Circuits

- **D1**, **D2**: 25 A - 350 V (bridge rectifier from old computer power supply)
  - Connect both AC leads on bridge together.
  - Connect the + and - bridge outputs to the filter capacitors.
- **D3**, **D44**, **D49**, **UF4007**: 1 A - 1 KV, 75 nS recovery time
- **D45**, **D46**: 1N4001 - 1 A - 50 V
- **D50**, **D51**, **D57**: 1N914
- **D47**, **D54**: LED
- **C1**, **Q2**: HG7G27N120BN (Use separate heat sinks; Use no insulators; bolt transistors directly to the heat sinks)
- **C3**, **Q4**: TIP-42 (Use separate heat sinks; Use no insulators; bolt transistors directly to the heat sinks)
- **U1**: TL-494, KA-7500-B, KA-7500-C, NTE-1729
- **U2**: LM-317T (Adjustable regulator)
- **U3**: NTE-40938 (Quad Dual Input CMOS NAND Schmidt Trigger)
- **U4**: 7805 (+5 V @ 1A Fixed Regulator)
- **ZD1**: 12 V - 1 W Zener
- **ZD2**: 1,000 V - 1 W Zener (selected 1N4005-6-7 diode)
- **ZD3**: 8.2 V - 1 W Zener

### PARTS LIST - Transformers

- **T1**: Core #43 or “J” material, 3/4" od x 1/2"id x 3/8" high (from old computer power supply.)
  - Primary 10 turns bifilar wound (10-0-10.)
  - Each Secondary 15 turns close wound. All windings #26 AWG from CAT5-E cable.
- **T2**: Core requires (1) Ferroxcube “U-Core” P/N U100/57/25-3C90, and (1) “I-Core” P/N I100/57/25-3C90
  - Primary 15 turns of 8 parallel strands of #18 AWG enamelled wire wound over secondary.
  - Wind the primary winding over the secondary winding.
  - See text for winding and assembly instructions.
  - Secondary 205 turns # 18 AWG enamelled wire wound over secondary.
  - See text for winding and assembly instructions.
- **T3**: Core #43 or “J” material, 1”od x 9/16”id x 15/32” high (from old computer power supply.)
  - Primary is a single pass-through of the primary lead from T2.
  - Secondary 23 turns bifilar wound (23-0-23) #26 AWG from CAT5-E cable.
- **T4**: Radio Shack - # 273-1366 - 24 VAC-CT @ 300 MA

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  - Adjust core air gap for 11.6 mHy inductance with no DC in winding.