

## Circuit Descriptions

Components FUSE1 and D1, D2, D3, D4, C2 and C3 is rectifier Diodes L1 and C5, C6 intend to filter the electromagnetic interference, which transform input sine-wave into a DC voltage. When connected to power, Capacitor C4 charged through Resistors R1 and R2, When the voltage make the trigger diode DB3 operating, then currents flows into the base of transistor Q2, afterward transistor Q2 operating, Below is the current Path:

Currents through C5 - filament - C6 - filament - CH2- magnetic ring inductance of the transformer primary CH1 – Q1 collect – Ground,

Q2 collector current increased make the magnetic ring transformer primary winding of CH1 get a induce electromotive force. At the same time on the secondary winding also get a induced electromotive force, so that the base of Q2 potential increased. the collector currents and base currents more increased. That is get a feedback voltage make the Q2 operated and saturated. When transistor Q2 operated, Currents of capacitor C4 discharged through the diode DB3 and Q2. The voltage of C4 is drop. no longer trigger the diode DB3 operating. When Transistor Q2 operating, First, collector currents of Q2, the base current and voltage increased, in a certain time, voltage of the base of Q2 will reached a peak, also the base current will reached a peak, Because of Magnetic Permeability of CH1 will be dropped, The base voltage of Q2 is decrease by collector currents of Q2 increased. Also, the base currents of Q2 will be dropped and saturated. When the collector current of Q2 and Magnetic Permeability of CH1 decrease, the voltage of CH1 will lower than base voltage of Q2, Thus, make the base current reversed, Q2 base current is negativated, Take advantage of this reverse current, Q2 from saturated state entry Magnification state, once entry Magnification state, the collector current of Q2 decrease through feedback of magnetic ring coil, in the mean time the base current of Q2 is decreased, it quickly become Cut-off state. at the same time, the polarity of magnetic ring coil has been changed, After few times. Currents through transistor Q1, the electromotive force of magnetic ring coil and the collector of Q2 is reversed. Make the Q1 collector currents increase, Q1 base currents increase, When Q1 collector currents continue to increase, thus make Q1 operating, this circuit repeat above process cycle. Q1, Q2 alternate on and off, Between two half-bridge circuit midpoint generate square wave alternating voltage. This alternating voltage through capacitor C6 and choke winding of CH2 generate the series resonant. a high-voltage on capacitor C7 overpass the lamp, so that the lamp burned.

Operational description: 0.04MHz