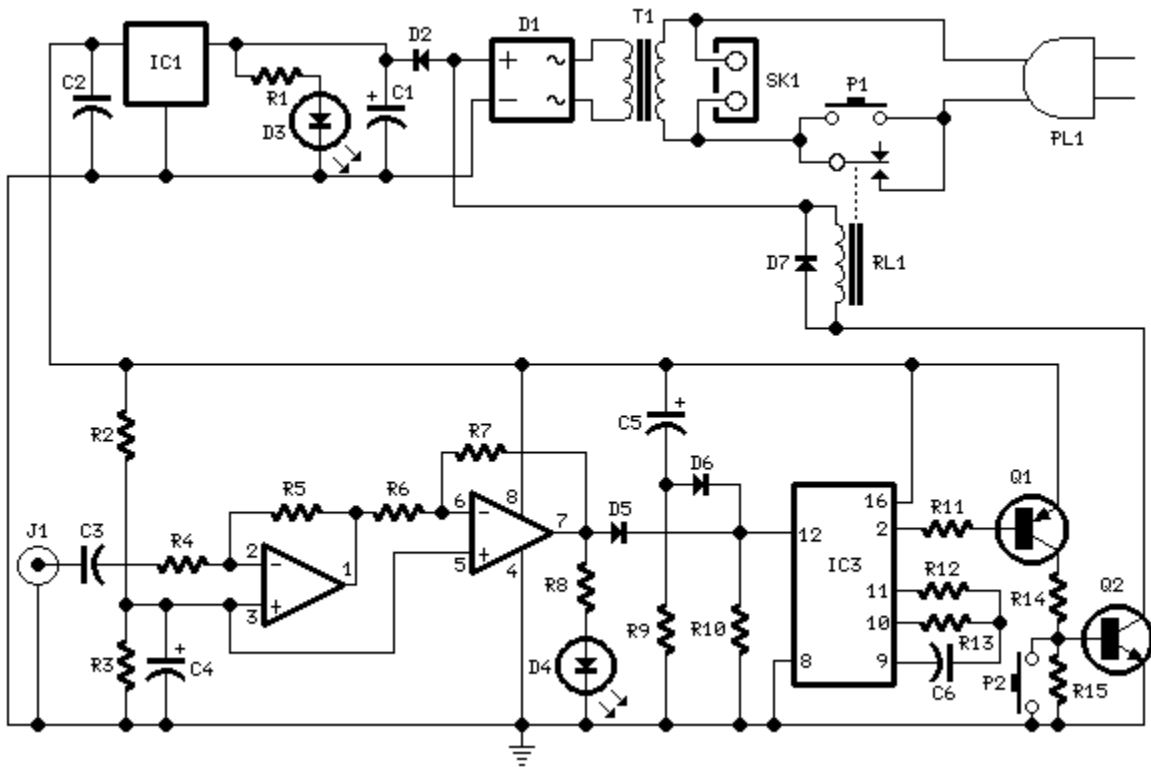


Amplifier Timer

**Turns-off your amplifier when idle for 15 minutes
Fed by amplifier tape-output**

Circuit diagram:



Parts:

| | | |
|-------|------|----------------|
| R1,R8 | 1K | 1/4W Resistors |
| R2,R3 | 4K7 | 1/4W Resistors |
| R4 | 22K | 1/4W Resistor |
| R5 | 4M7 | 1/4W Resistor |
| R6,R9 | 10K | 1/4W Resistors |
| R7 | 1M5 | 1/4W Resistor |
| R10 | 100K | 1/4W Resistor |
| R11 | 15K | 1/4W Resistor |
| R12 | 10M | 1/4W Resistor |
| R13 | 1M | 1/4W Resistor |
| R14 | 8K2 | 1/4W Resistor |
| R15 | 1K8 | 1/4W Resistor |

| | | |
|---------------|--------------|--|
| C1_____ | 470 μ F | 25V Electrolytic Capacitor |
| C2,C3,C6_____ | 100nF | 63V Polyester Capacitors |
| C4,C5_____ | 10 μ F | 25V Electrolytic Capacitors |
| D1_____ | Diode bridge | 100V 1A |
| D2,D7_____ | 1N4002 | 100V 1A Diodes |
| D3_____ | Red LED | 5mm. |
| D4_____ | Yellow LED | 5mm. |
| D5,D6_____ | 1N4148 | 75V 150mA Diodes |
| IC1_____ | 78L12 | 12V 100mA Voltage regulator IC |
| IC2_____ | LM358 | Low Power Dual Op-amp |
| IC3_____ | 4060 | 14 stage ripple counter and oscillator IC |
| Q1_____ | BC557 | 45V 100mA PNP Transistor |
| Q2_____ | BC337 | 45V 800mA NPN Transistor |
| J1_____ | RCA | audio input socket |
| P1_____ | SPST | Mains suited Pushbutton |
| P2_____ | SPST | Pushbutton |
| T1_____ | 220V | Primary, 12V Secondary 3VA Mains transformer |
| RL1_____ | 10.5V | 270 Ohm Relay with SPST 5A 220V switch |
| PL1_____ | Male | Mains plug |
| SK1_____ | Female | Mains socket |

Circuit operation:

This circuit turns-off an amplifier or any other device when a low level audio signal fed to its input is absent for 15 minutes at least.

Pushing P1 the device is switched-on feeding any appliance connected to SK1. Input audio signal is boosted and squared by IC2 A & B and monitored by LED D4. When D4 illuminates, albeit for a very short peak, IC3 is reset and restarts its counting. Pin 2 of IC3 remains at the low state, the two transistors are on and the relay operates. When, after a 15 minutes delay, no signal appeared at the input, IC3 ends its counting and pin 2 goes high. Q1 & Q2 stop conducting and the relay switches-off. The device is thus completely off as also are the appliances connected to SK1. C5 & R9 reset IC3 at power-on. P2 allows switch-off at any moment.

Notes:

- | Simply connect left or right channel tape output of your amplifier to J1.
- | You can employ two RCA input sockets wired in parallel to allow pick-up audio signals from both stereo channels.
- | The delay time can be varied changing R13 and/or C6 values.
- | Needing to operate a device not supplied by power mains, use a double pole relay switch, connecting the second pole switch in series with the device's supply.

