

TELEPHONE LINE BASED AUDIO MUTING AND LIGHT-ON CIRCUIT

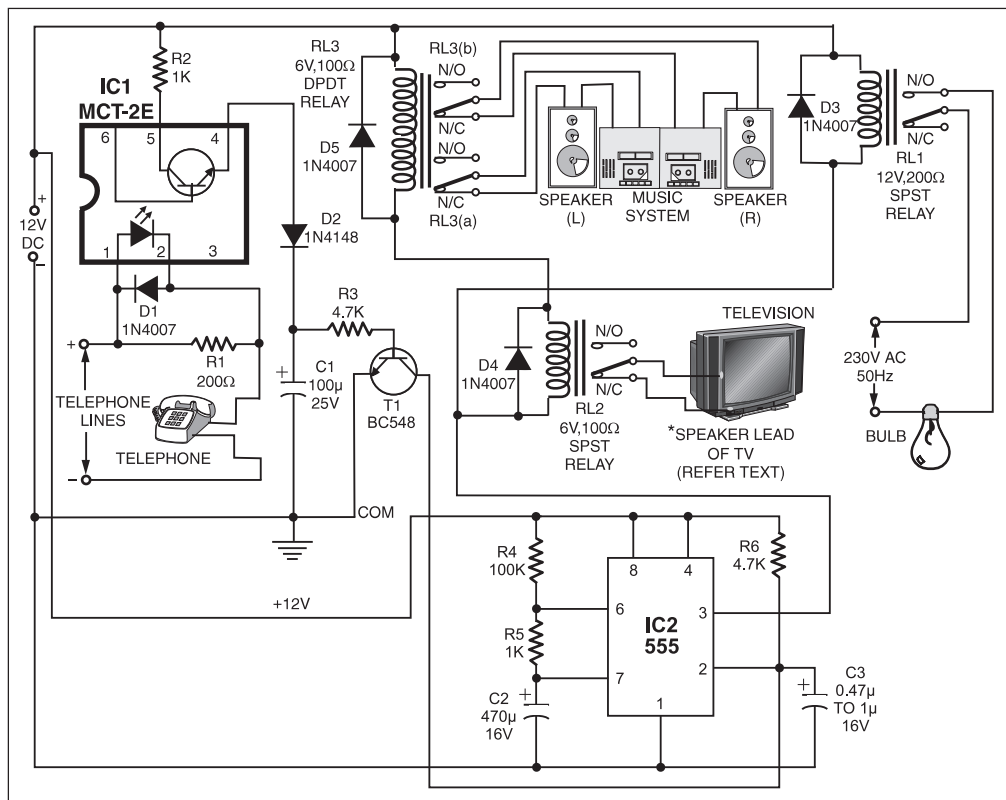
Very often when enjoying music or watching TV at high audio level, we may not be able to hear a

telephone ring and thus miss an important incoming phone call. To overcome this situation, the circuit presented here can be used. The circuit would automatically light a bulb on arrival of a telephone ring and simultaneously mute the music system/TV audio for the duration the telephone handset is off-hook. Lighting of the bulb would not only indicate an incoming call but also help in locating the telephone during darkness.

On arrival of a ring, or when the handset is off-hook, the inbuilt transistor of IC1 (opto-coupler) conducts and capacitor C1 gets charged and, in turn, transistor T1 gets forward biased. As a result, transistor T1 conducts, causing energisation of relays RL1, RL2, and RL3. Diode D1 connected in anti-parallel to inbuilt diode of IC1, in shunt with resistor R1, provides an easy path for AC current and helps in limiting the voltage across inbuilt diode to a safe value during the ringing. (The RMS value of ring voltage lies between 70 and 90 volts RMS.) Capacitor C1 maintains necessary voltage for continuously forward biasing transistor T1 so that the relays are not de-energised during the negative half cycles and off-period of ring signal. Once the handset is picked up, the

relays will still remain energised because of low-impedance DC path available (via cradle switch and handset) for

The timer IC2 (555) is configured in monostable mode and connected between transistor T1 and relay units provides a



the in-built diode of IC1. After completion of call when handset is placed back on its cradle, the low-impedance path through handset is no more available and thus relays RL1 through RL3 are deactivated.

As shown in the figure, the energised relay RL1 contacts switch on the light, while energisation of relay RL2 causes the path of TV speaker lead to be opened. (For dual-speaker TV, replace relay RL2 with a DPDT relay of 6V, 200 ohm.)

holding time of around 0.5 minutes.

Similarly, energisation of DPDT relay RL3 opens the leads going to the speakers and thus mutes both audio speakers. Use 'N/C' contacts of relay RL3 in series with speakers of music system and 'N/C' contacts of RL2 in series with TV speaker. Use 'N/O' contact of relay RL1 in series with a bulb to get the visual indication of an incoming call as well as light during off-hook period.