

# **Burglar Alarm: Manufacturing Instructions**

## **Stage 1:**

1. Use liquid solvent cement to join, Part 1 and Part 2 at  $90^{\circ}$  to make a corner of the box.
2. To help hold Part 1 and Part 2 at  $90^{\circ}$  use 2 try squares in inside and the other out side the corner.
3. Place a drop of liquid solvent cement in the corner and capillary action will allow the liquid to flow into the joint.
4. Repeat process for the other 3 corners

## **Stage 2:**

1. In this stage the top and bottom are joined onto the box
2. When cutting out the top and bottom they can be over size by 4mm in length and width
3. Place the 4 sides on the bottom and use the liquid solvent cement to glue on the bottom
4. Then place the 4 sides and bottom on the top and glue it on with liquid solvent cement, so that you end up with a sealed box.

## **Stage 3:**

1. Mark a line along both sides 33mm up from the base
2. Setup the Band saw at  $45^{\circ}$ .
3. Use the band saw to cut along each line so to remove the two corners as in diagram for stage 3
4. The  $45^{\circ}$  side are again over size by 4mm in length and width by 4mm.
5. Glue on the  $45^{\circ}$  side so there is 2mm trim all round.
6. Using wet emery paper to remove all the trim around the box so that all sides are flush with each other.

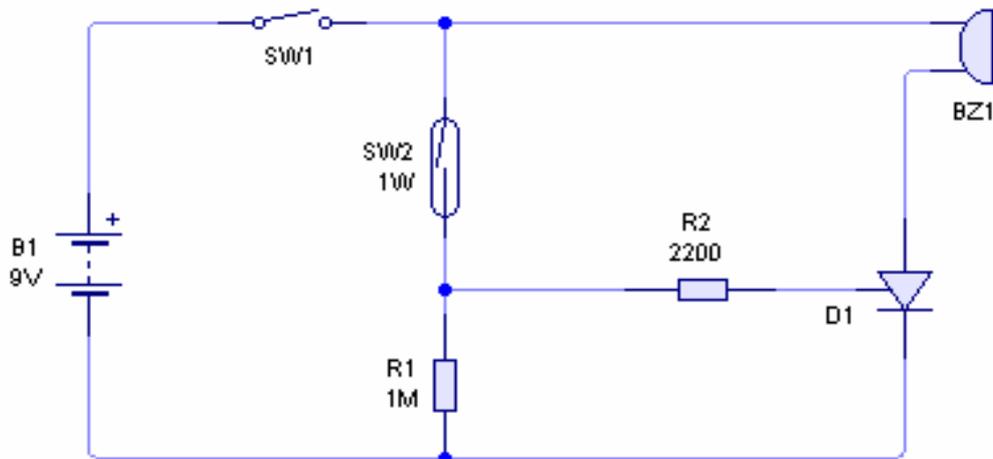
## **Stage 4:**

1. Mark a line 18mm up from the base of the box.
2. Use the band saw to cut along the 18mm line so you get the top and bottom of the box.
3. Glue the trim to the inside of the four side of the bottom half of the box. The trim acts as the catch for the box as the top can slide on and off over it.

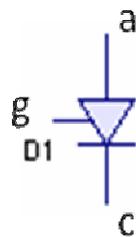
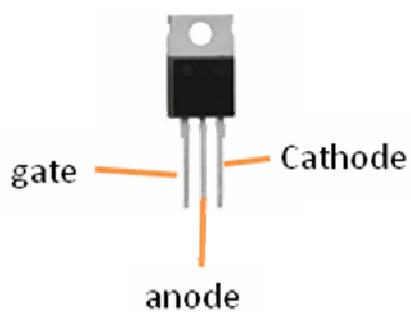
## **Stage 5:**

1. Make and solder the PCB for the Burglar Alarm.
2. Fix the PCB in the base of the box and position the reed switch close to the side of the box.

## Circuit



- 9V Battery
- Toggle switch
- Reed Switch
- 1M Resistor
- 2k2 Resistor
- Buzzer
- Thyristor



The Burglar Alarm circuit works by using a reed switch and thyristor. The Thyristor is a latch device, once it is triggered by a small voltage at the gate leg, the buzzer will stay on until the circuit is switched off by the main switch and stopping the power to the anode. The reed switch is used to trigger the Thyristor, this happens when the reed switch passes the magnet. Once the thyristor is triggered the buzzer stays on no matter if the reed switch is on or off.