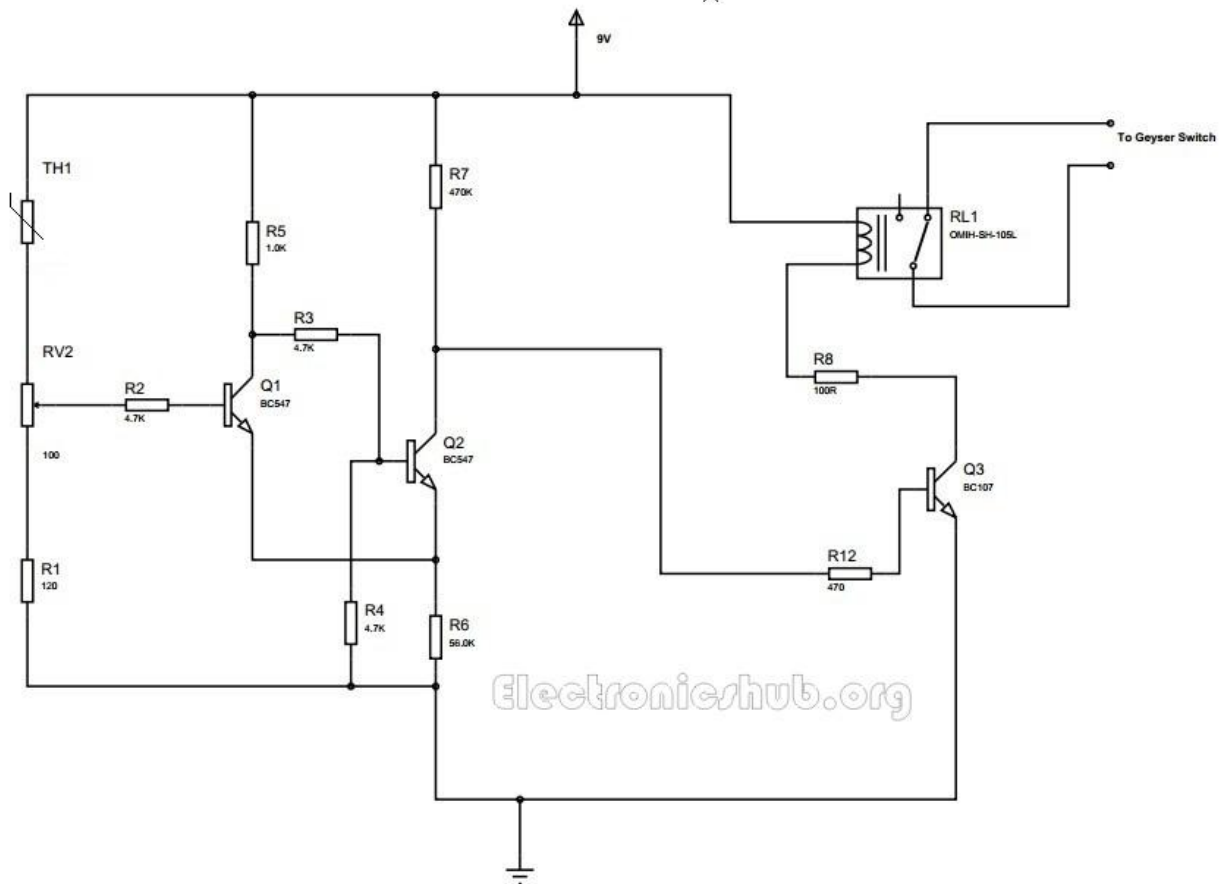


Hot Water Geyser Controller Circuit

This circuit is made to turn OFF geysers as soon as our water gets hot and are ready for bathing. Although modern domestic geysers have an inherent ability to detect the temperature and turn On or Off automatically, this circuit helps us to gain insight regarding how this is one in the geysers.

Hot Water Geyser Controller Circuit Diagram:



This circuit has a thermistor which is a temperature sensing element that helps the circuit to determine the temperature of the water. The thermistor is kept in contact with the water while assembling the circuit on field. The property of the thermistor is that its resistance is inversely proportional to the temperature applied to it. It means that if the temperature in its surroundings increases, the resistance offered by the thermistor decreases. Similarly, if the temperature in the surroundings decreases, the resistance offered by the thermistor increases. The name thermistor is derived from thermal and resistor the meaning of which is implied and the functionality of which can be easily understood from its name.

The thermistor in the circuit is arranged in a voltage divider arrangement using which the variations in the resistance of the thermistor is converted into the variations in voltage values. These voltages are then used to switch a transistor to ON state when the thermistor detects the water are sufficiently hot and are ready to use.

The output voltage of the potentiometer arrangement is given to the base of transistor BC547. The transistor BC547 is a general purpose NPN transistor which is used as an electronic switch in this circuit. When the thermistor senses a low

temperature, then the voltage divider arrangement provides a low voltage to the switching transistor. Due to this, the transistor is in the off mode. If the temperature reaches a value greater than a specific threshold, then the transistor gets turned on. As we have discussed earlier, the transistor acts as a switch which in turn turns on another transistor which drives the relay. When the driving transistor turns on, the DC current gets passed through the relay which turns the relay ON.

The relay is connected in the normally closed mode in which it is normally closed and the circuit is opened when the relay is turned ON. The circuit is closed means that the geyser is turned on and the circuit is open means that the relay is turned off. When the temperature is below the threshold value, the relay is off and so the geyser will remain on. When the temperature reaches the value equal to or exceeding the threshold value, then the relay turns on which further breaks the connection and so the geyser turns off.

Source: <http://www.electronicshub.org/hot-water-geyser-controller-circuit/>