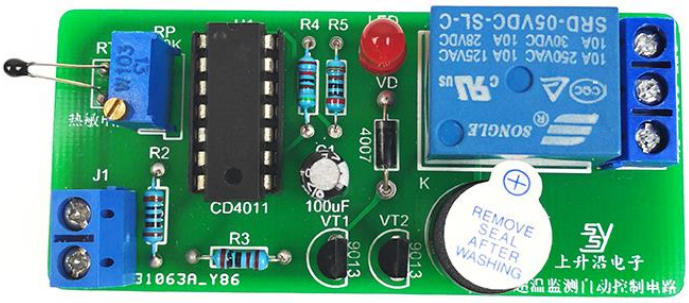
SYNACORP TECHNOLOGIES SDN. BHD. (1310487-K)
No.25 Lorong 1/SS3, Bandar Tasek Mutiara,
14120 Simpang Ampat, Penang, Malaysia.
T: +604.586.0026 F: +604.586.0026
WEBSITE: www.synacorp.my EMAIL: sales@synacorp.my

STS-146 HEAT TEMPERATURE RELAY DIY KIT

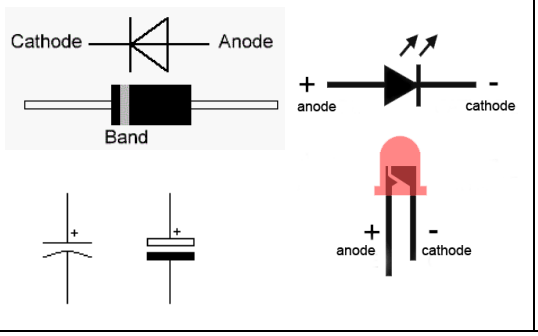
Supply voltage: 4.5-5.0V (DC voltage) at J1

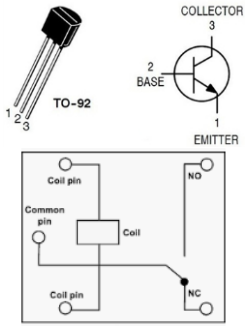


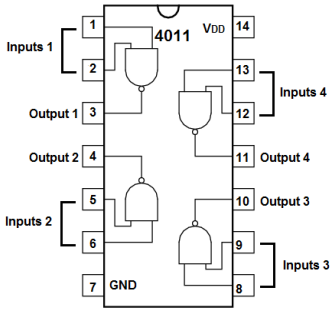
PCB Full Assembly
(Board size: 32*72mm)

Component List :

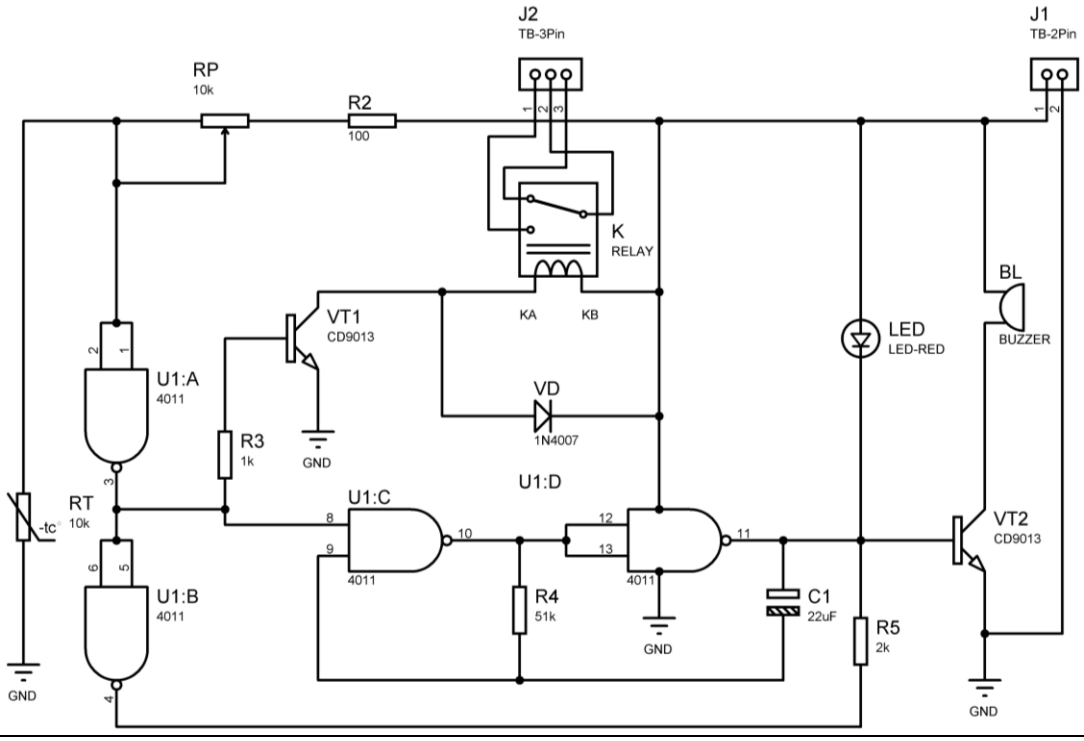
RT=Thermistor 10k, RP=Multi-Turn Preset 10k, R2=100, R3=1k, R4=51k, R5=2k, C1=22µF, VD=IN4007, VT1 & VT2=CD9013, BL=Buzzer, KB=Relay 5V, J1=TB2P, J2=TB3P, LED=Red LED, CD4011, IC Socket, PCB Board.







Schematic Diagram



SYNACORP TECHNOLOGIES SDN. BHD. (1310487-K)
No.25 Lorong 1/SS3, Bandar Tasek Mutiara,
14120 Simpang Ampat, Penang, Malaysia.
T: +604.586.0026 F: +604.586.0026
WEBSITE: www.synacorp.my EMAIL: sales@synacorp.my

Introduction:

The over-temperature monitoring automatic control circuit consists of a four-input NAND digital integrated circuit CD4011 and a thermistor RT to form a measurement and control circuit and a siren sound generation circuit, and a relay K as an execution circuit. The thermistor RT used as a temperature-measuring sensor. When the temperature exceeds the set temperature, the transistor VT1 drives the relay K. This DIY Kits can also use as over-temperature monitoring and alarm. The normally open and normally closed contacts of the relay can drive a variety of controlled devices

Circuit Operation:

The thermistor RT connected to the input terminal of U1A. The voltage division of the resistors R2 and RP already adjusted so that the input voltage of U1A is high level and the output voltage is low level. When the temperature exceeds the adjusted temperature limit, the resistance of the RT becomes smaller. This indirectly makes the voltages division of dividing circuit of U1A input terminal low level and the inverted output is high level. When the high-level output added to the 8 pin of the multi-vibrator of U1C, U1D and the RC circuit, the multi-vibrator will starts to oscillate. After the transistor VT2 amplified, the buzzer will sounds an alarm tone and it will turned on the base of transistor VT1 as well. The energized relay began to attract or triggered; on the other hand, after the inverted output of the U1B is low, the LED in the circuit will illuminated.

Pack list:

COMPONENTS	QUANTITY	REFERENCE
Resistor 1kΩ	1	R3
Resistor 2kΩ	1	R5
Resistor 100Ω	1	R2
Resistor 51kΩ	1	R4
Multi-Turn Preset 10k	1	RP
Electrolytic Capacitor 22µf	1	C1
Diode IN4007	1	VD
Transistor CD9013	2	VT1 & VT2
Red led	1	LED
Thermistor 10k	1	RT
Buzzer	1	BL
Relay 5VDC	1	KB
Terminal block 2-Pin	1	J1
Terminal block 3-Pin	1	J2
CD4011 IC	1	CD4011
IC Socket 7-Pin	1	-
PCB Board	1	-
TOTAL ITEM	18	-