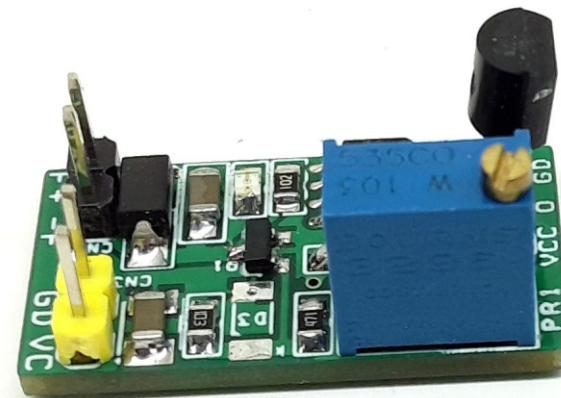


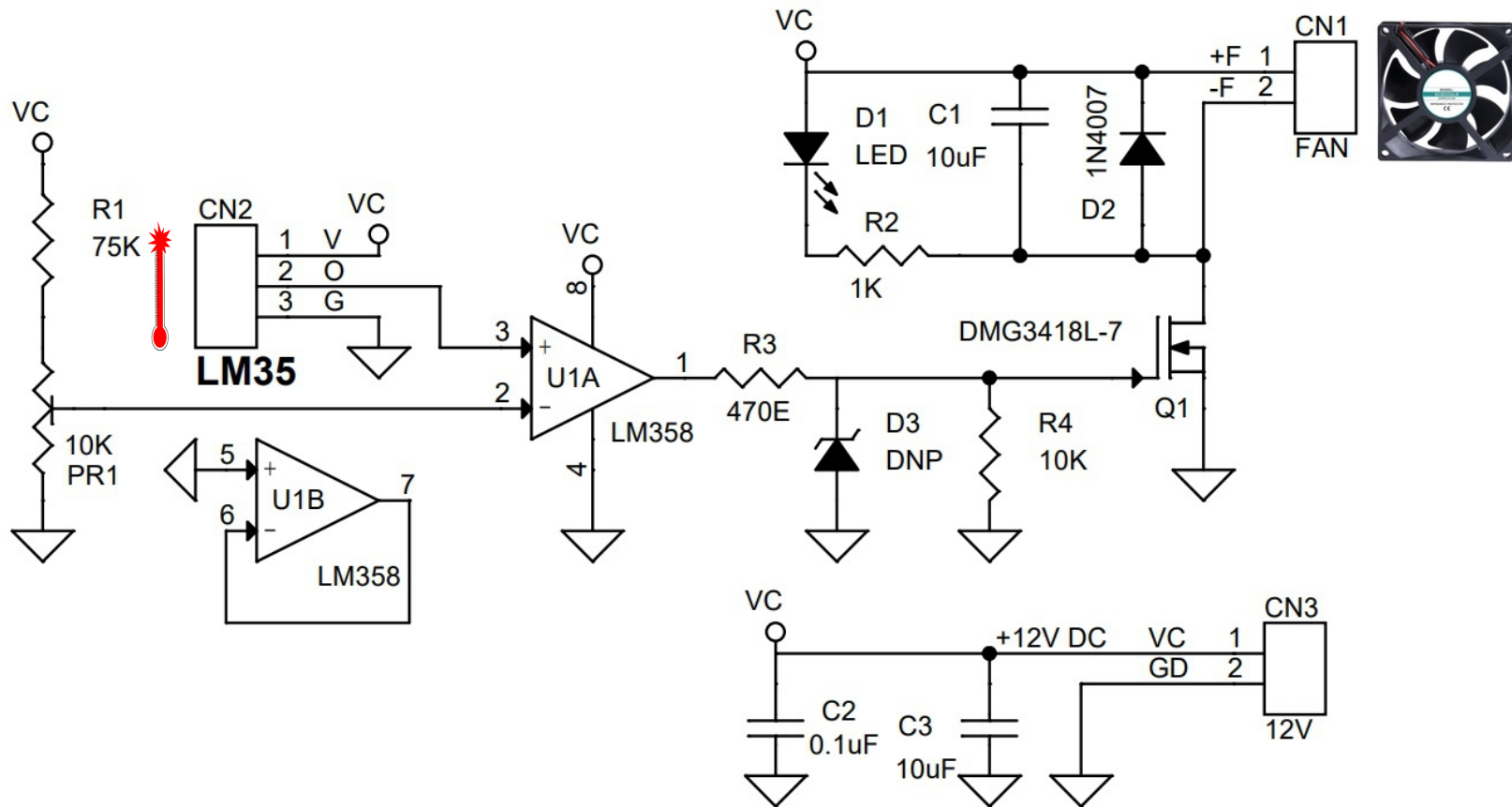
## Cooling Fan Controller Using Temperature Sensor LM35

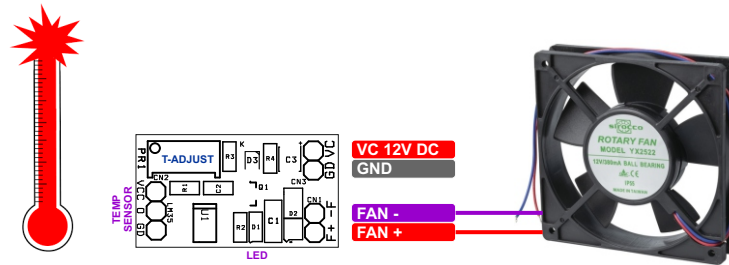
The project presented here is a low-cost solution for heat management of the heatsink and various equipment that requires automatic control of a cooling Fan. The project is built using a very cheap LM358 OPAMP. LM358 is used as a comparator, and a trimmer PR1 is provided to set the temperature threshold (Fan ON trigger point). LM35 is used as a temperature sensor, it outputs an analog output voltage that is proportional to temperature. Capacitors C2 and C3 are bypass capacitors, D2 is a clamp diode to protect the Q1 MOSFET from reverse electromagnetic noise coming from the fan. Capacitor C1 helps in noise control while Fan is ON/OFF. LED D1 indicates Fan ON/OFF operations. Q1 MOSFET DMG3418L-7 can handle current up to 4A. LM35 can be mounted directly on the heatsink using silicon glue or with help of a mechanical fixture for proper temperature sense. The sensor senses the temperature, the output of the sensor rises as the temperature rise, and the comparator compares the sensor output with the threshold voltage of the PR1 trimmer potentiometer. When the sensor output is the above-set the point, LM358 provides a high output which triggers the MOSFET, and finally, the fan goes ON. The fan runs until the temperature drops less than the set point.

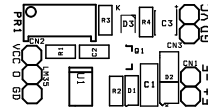
### Features

- Supply 12V DC (Range 5V to 12V DC)
- Fan Load Up to 1Amp Continues (Maximum Load 4Amps)
- Temperature Threshold Range Adjustable 10 to 100 Degree Centigrade using Multiturn Trimmer Potentiometer.
- Simple and Low-Cost Temperature Management Solution for Heatsink or Equipment's
- On Board Trimmer Potentiometer to Adjust the Temperature Threshold
- PCB Dimensions 26.83 x 14.13MM

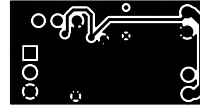




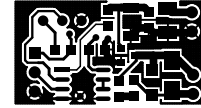




SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 26.83 x 14.13MM

BOM						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
2	1	CN2	LM35	TI	DIGIKEY	LM35DZ/NOPB-ND
3	1	CN3	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
4	2	C1,C3	10uF/25V SMD SIZE 1206	YAGEO/MURATA	DIGIKEY	
5	1	C2	0.1uF/25V SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
6	1	R2	1K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
7	1	D2	1N4007	SMC DIODE	DIGIKEY	1655-1N4007FLCT-ND
8	1	D3	DNP			
9	2	R4	10K 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
10	1	Q1	DMG3418L-7	DIODE INC	DIGIKEY	DMG3418L-7DICT-ND
11	1	R1	75K 1% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
12	1	R3	470E 5% SMD SIZE 0805	YAGEO/MURATA	DIGIKEY	
13	1	U1	LM358 SOIC8	ONSEMI	DIGIKEY	LM358ADR2GOSCT-ND
14	1	PR1	10K MULTITURN TRIMMER POT	BOURNS	DIGIKEY	3296W-1-103RLFTR-ND
15	1	D1	LED SMD SIZE 0805	LITE ON INC	DIGIKEY	160-1427-1-ND