EDUCATIONAL ELECTRONIC KITS

12 V fan speed controller

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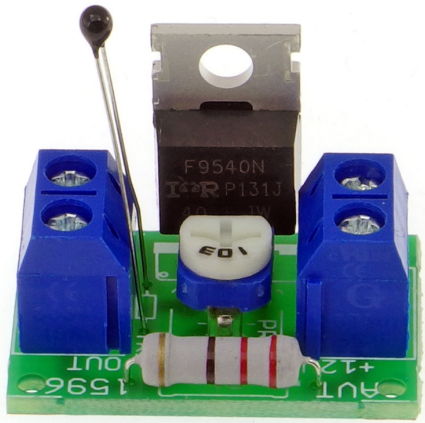
AVT 1596



ASSEMBLY DIFFICULTY

The device enhances the comfort of the PC, that is, it adjusts the fan speed to the momentary needs for cooling. Fewer revolutions reduce the noise generated by the air supply and increase the life of the fan motor.

Characteristics

- controlling the speed of the cooling fan depending on the temperature
- reducing the noise generated by the fan
- increasing the life of the fan
- assembly without interfering with the computer system
- 12 V DC power supply
- current carrying capacity max: 1 A, 10 W

Circuit description

The schematic diagram of the controller is shown in Fig. 1. In the idle state, the T1 transistor is occluded and the fan runs at a speed determined by the R1 resistance. When the temperature of the TR1 thermistor increases, its resistance decreases. This causes an increase in the current flowing through the T1 transistor. Its determined trigger threshold can be adjusted by changing the resistance of the PR1 potentiometer.

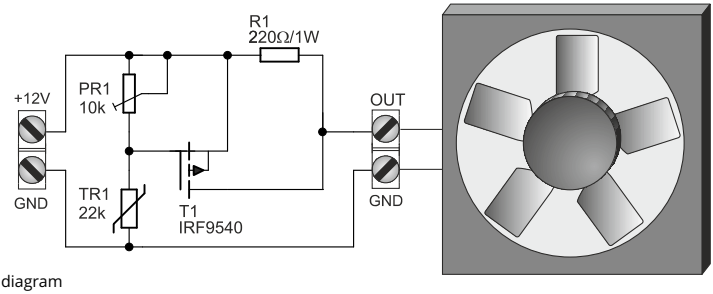


Fig. 1 Schematic diagram

A properly assembled regulator can immediately be placed in a computer power supply. The temperature sensor should be attached to the heat sink inside it, preferably gluing it with silicone glue. We disconnect the fan power wires from the power supply board and attach them to our circuit. We do the same with the fan. The last important step will be to check the correct assembly of cables inside the computer.
Causing a short circuit in the assembly should theoretically only end up blowing a fuse, but in practice you can usually damage the power supply. Once the computer is powered up, the positive effects of the regulator will be felt immediately.

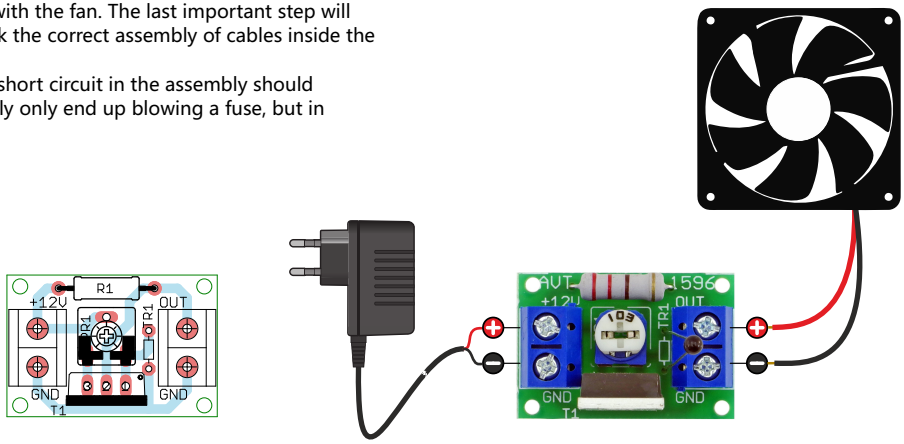
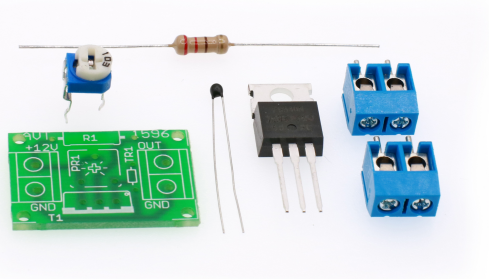


Fig. 2 Assembly diagram

List of elements

Resistors:
R1:.....220 Ω / 1 W
PR1:.....10 kΩ mounting potentiometer
TR1:.....22 kΩ thermistor
Semiconductors:
T1: .....IRF9540 or similar
Other:
ARK2/500 connector – 2 pcs.



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