M261.1

DC 12-24V 0,7A electronic fan temperature controller module

Data sheet

Description

Many electronic devices operate in conditions where the fan rotates at idle, and create a constant, annoying noise, accelerating the wear of the fans. The function of this thermocontroller is to reduce the noise from the constantly-running fans by stopping them until the temperature exceeds a predetermined threshold. The module can be used in computer system units, in power units, and any other electronic devices that use cooling with fans. The proposed thermal controller works with 12V or 24V fans, in the start-stop mode, with a hysteresis of 2-5 ° C.

A... 700

Specifications

➔ Rated DC power voltage, V ... . 12 or 24

➔ Tolerance of supply voltages, + \ -% ……………………………………… 5

➔ Maximum load current of connected fan (s), m

➔ The maximum current consumption of the circuit in the subthreshold state,

➔ when powered from a source of 12V, no more, mA ... . ……………… ………. 14

➔ The number of preset temperature thresholds 4

➔ The values of selectable thresholds, ° C 50; 55; 60; 70;

➔ Accuracy of the operation, relative to the selected threshold, + \ -% 5

➔ Start-stop hysteresis of the fans, ° C .... ………………….. 2-5

➔ The mode of operation of the thermostat ………………………….…… start / stop

➔ The temperature range of the device, ° C ... ... -30 .. + 85

➔ Overall dimensions D * Sh * V, not more than, mm ………………… ..… .. 24 * 17 * 4.

Electrical schematic diagram
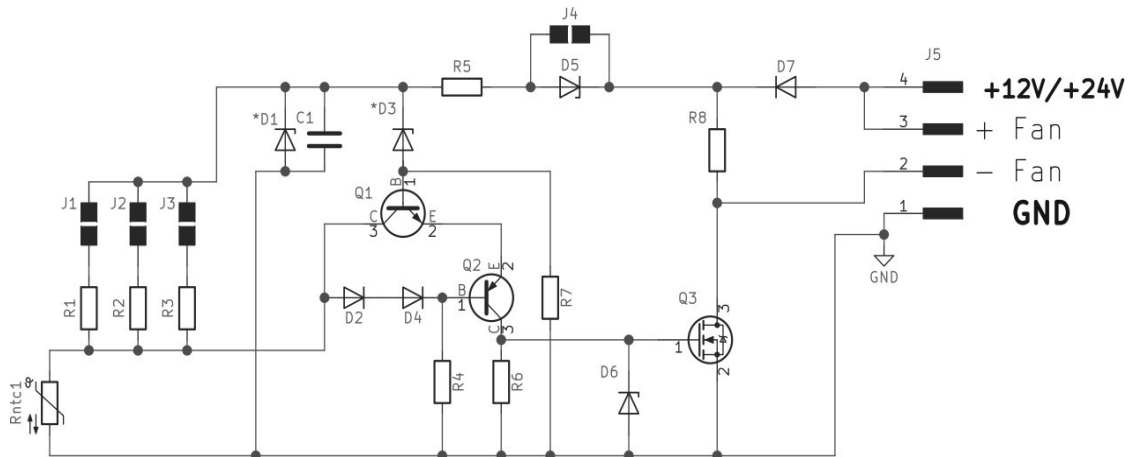
⚠ *Attention*

When powering the device from a voltage source of 12 or 24 volts, ONLY fans should be used, for an appropriate voltage of 12 or 24 volts!

It is prohibited to use fan (s) with a total current consumption exceeding 700mA!

When installing the module, it is necessary to ensure that the leads of the conductors in the holes of the board do not snap onto the metal base on which the board will be mounted. Use an insulator or solder the conductors superficially.

Description of work

The thermal controller works on the principle of a trigger device with hysteresis. The hysteresis of the fan on-off temperature is set at 2-5 ° C by default.

If the measured temperature is above a predetermined threshold previously set using jumpers J1-J3, then the Q3 of the transistor goes to the open state like an avalanche and the entire supply voltage is applied to the fan - the fan runs at maximum speed. If the temperature falls below the trigger threshold, by a hysteresis of 2-5 ° C, then the control transistor Q3 closes like an avalanche and the fan stops, reducing the noise completely.

Thermocontroller can operate from a DC power source with a voltage of 12 or 24 volts. To select the voltage of operation is the jumper J4. When J4 is closed (by soldering), the device is ready for operation from a 12V source. If jumper J4 is not short-circuited, then from 24V. The default operating voltage is 12 volts.

Multiple fans can be connected to the module, for a total current consumption not exceeding 700mA!

The device is configured to one of the thresholds set by the manufacturer. The threshold is selected by closing (soldering) one of the jumpers J1-J3 or a combination of them. The shorting of J1 corresponds to a threshold of 50 ° C, j2 - 55 ° C, j3 - 60 ° C. The combination of J1 + J2 sets the threshold - 70 ° C. Other combinations of J1-J3 are possible, but the indicated hysteresis is not guaranteed. The response temperature should not exceed 85 ° C !!!

By default, the response temperature is set at 50 ° C.

The board has a hole for mounting the module, ø3.2mm.

The thermistor can be attached to the active element or its radiator for a more accurate response of the thermo controller.

The layout of the elements