PELTIERHOME

Nowadays, global warming and pollution have reached a level that threatens the vital activities in the world with the effect of the use of fossil fuel based fuels to obtain energy. Therefore, the issue of the production, transmission and consumption of the electrical energy, which must be used in daily life and in industry in the manner that will cause the least harm to the environment, has become one of the most important problems to be solved. Perhaps one of the most noticeable among renewable and clean energy technologies is thermoelectric technology, which enables the generation of electrical energy using unlimited solar energy [1].

In recent years, the worldwide value added, such as Turkey and other European countries also change the structure of trade and manufacturing sectors have been directed to the development and production of products with high and different functions. Photovoltaic structures are used in space applications, building outer surface coatings or roofs, in tents, jackets, textile materials such as tents, jackets, traffic signaling and communication systems, and in capacitors for generating different capacities of energy [2-3].

Some application areas where Peltier is used are as follows:

• Microprocessor cooler

• Coolers for lasers, infrared detectors and CCD matrices

• In the cooling room for different temperature tests of electronic components

• Water coolers for the semiconductor industry

• Portable and compact cooler for medical devices

• With temperature controller for transport containers used in biomaterials and drug transport [4].

The aim of this study is to obtain electrical energy with the difference of temperature by running reverse operation.

People living in Alaska use fossil fuels for electricity. In this study, the temperature in Alaska during the day - 28 C, while at night -60 C degree decreases. Considering that the internal temperature of the house is +26 degrees and above, a 4 cm2 peltier is generated by a peltier and the energy energy is 4m2 + 4m2 = 8m2.

Thermoelectric Matter What is Peltier?

In 1834, when a current was passed in the joint of Peltier two metals, it found that when the current flows in one direction, the heat is swallowed in the joint and the heat is exposed when the direction of the current is reversed. In the case of semiconductor, the electron energy difference can be greater and the joint produces higher e.m.k.

The size of this e.m.k depends not only on the material that forms the joint, but also on the temperature of the joint. Using Peltier effect, TEC Termo electric cooler module is formed by connecting Peltier effect p-n joints in series.

TEC is especially used in the cooling of new generation computer processors and in the construction of vehicle type refrigerators.

When a DC current is applied to the terminals, a surface cools while the other surface heats up. It is produced in various types and models according to their strength and size as watts.

Materials used in the project;

Thermoelectric Peltier Cooler Module 12V 45W

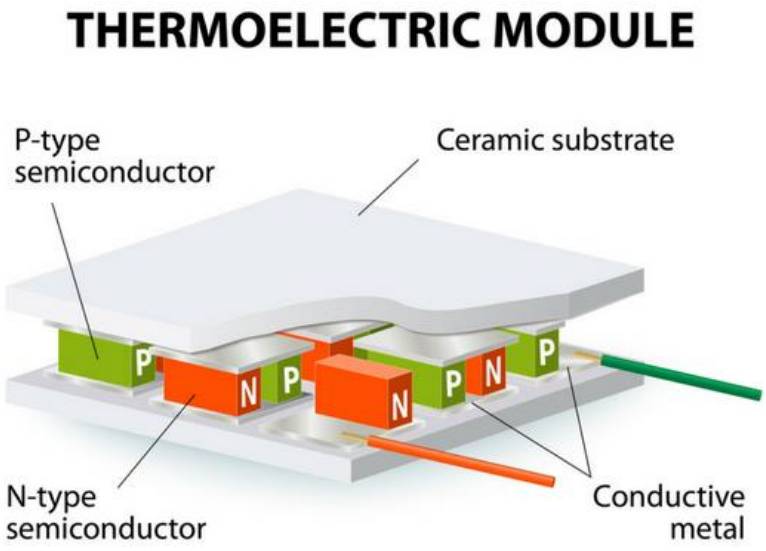
Thermoelectric Peltier Cooler Module 12V 60W

Voltmeter

Digital thermometer

Heater

Ice



How to use Peltier with Texas Instruments.

It is possible to calculate the amount of energy produced by benefiting from the temperature difference that will occur by connecting the temperature sensors to the different directions of the peltier.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