

Thermoelectric Cooler Peltier TEC1-12706



Introduction:

Thermoelectric cooling uses the Peltier effect to create a heat flux at the junction of two different types of materials. A Peltier cooler, heater, or thermoelectric heat pump is a solid-state active heat pump which transfers heat from one side of the device to the other, with consumption of electrical energy, depending on the direction of the current. Such an instrument is also called a Peltier device, Peltier heat pump, solid state refrigerator, or thermoelectric cooler (TEC). It can be used either for heating or for cooling, although in practice the main application is cooling. It can also be used as a temperature controller that either heats or cools.

Features:

- Air conditioner
- Refrigeration
- Thermal cycling applications
- Replacement components for system users such as IR cooling and sensors

Specification:

- Lightweight
- Voltage: 12V
- U_{max} (V): 15.4V
- I_{max} (A): 6A
- Q_{max} (W): 92W
- Dimensions: 40mm x 40mm x 3.6mm
- Power Cord: 120mm

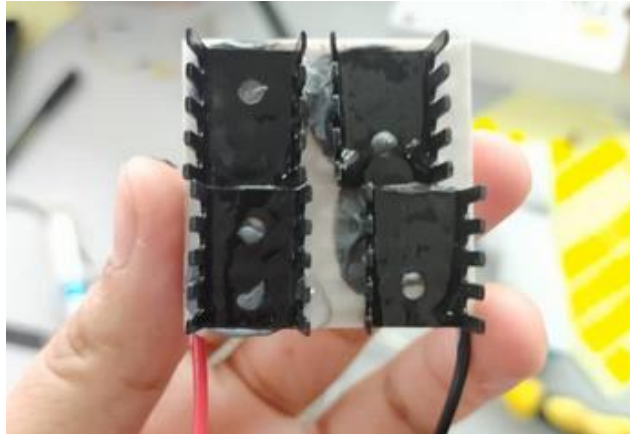
Objective:

The objective of this experiment is to determine which side is hot and which side is cool.

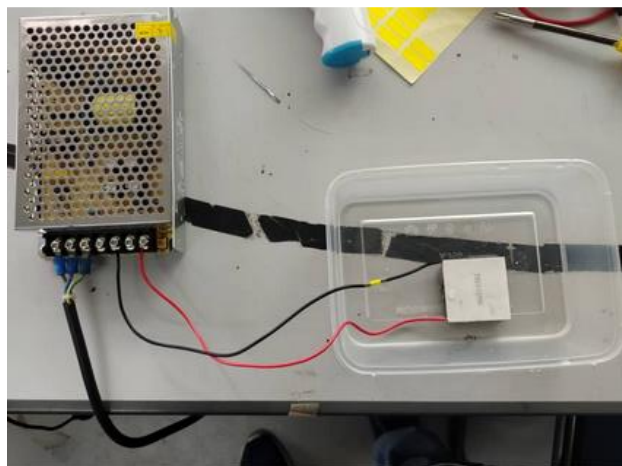
Procedures:

Setup 1: Thermoelectric Peltier was connected to switching power supply to determine which side is cold and which side is hot.

Setup 2: Once hot and cold side has been determined, heatsinks were attached to hot side of the peltier by using thermal paste.

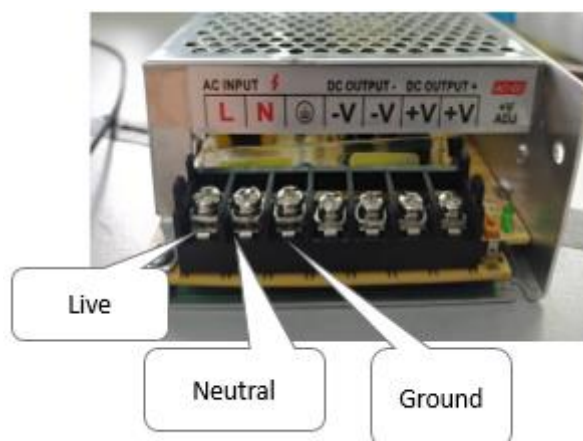


Setup 3: Fill water in the container and put the thermoelectric peltier that has been attached with heatsink in the container as shown in the figure below. The setup connection is shown in the figure.



Setup 4: The power is turn on to observed the cold side of the peltier.

Additional notes:



Attachments:

Temperature observed of the cold side:

