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Edition		Date	

Product specification

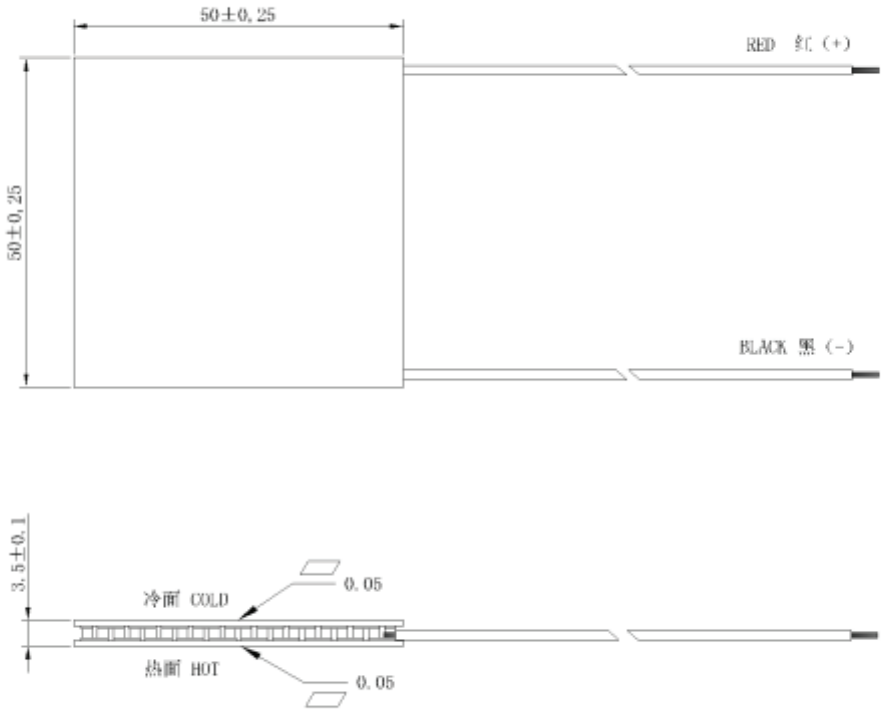
Product：Thermo-module

Type：TEC1-12720

Approvedby

Approver	Checker	Maker

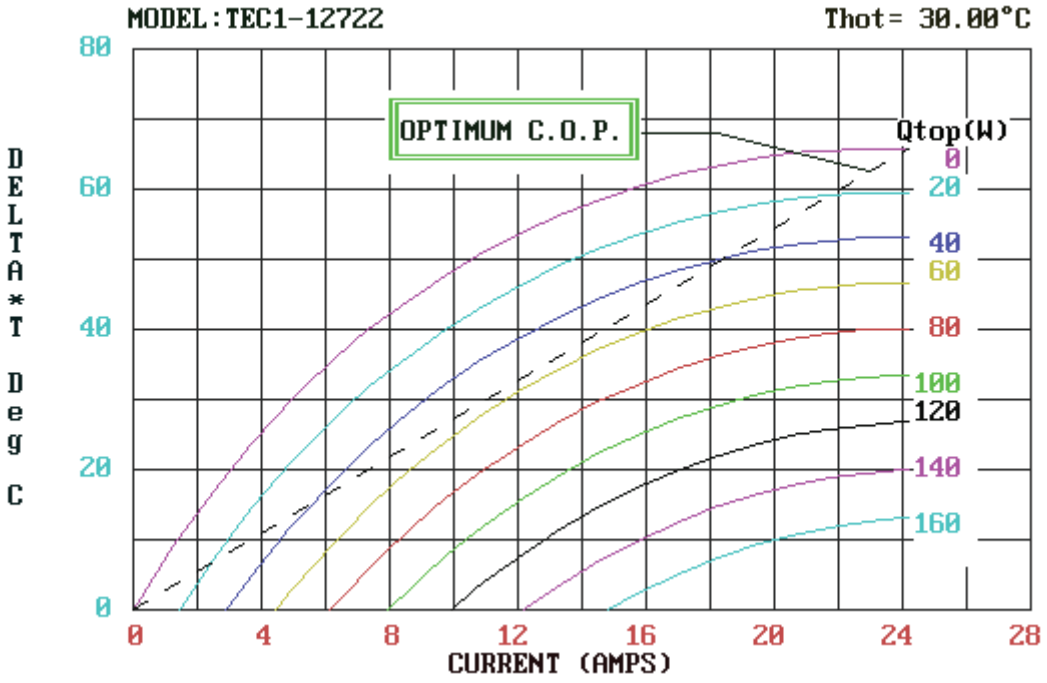
1. TE Module Drawing:

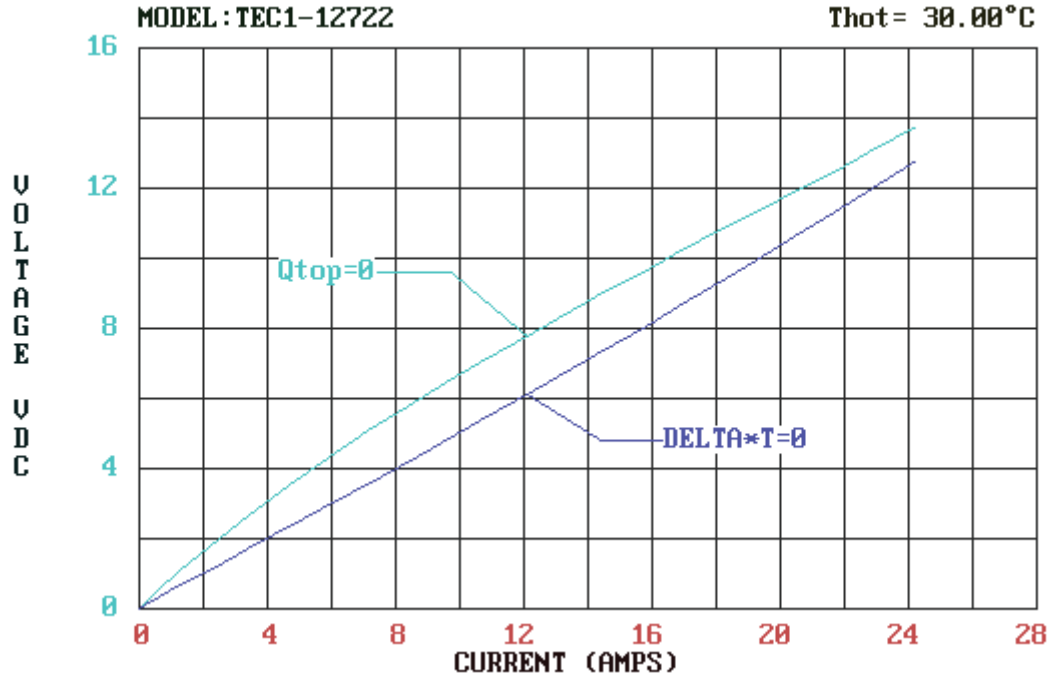


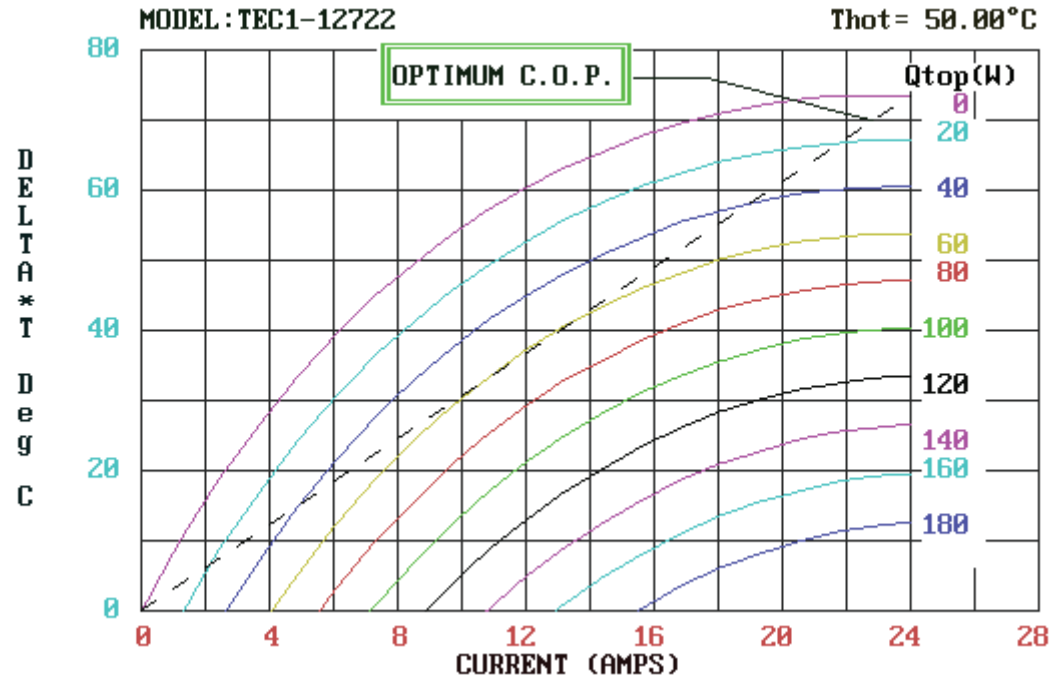
2. TE Module Specifications

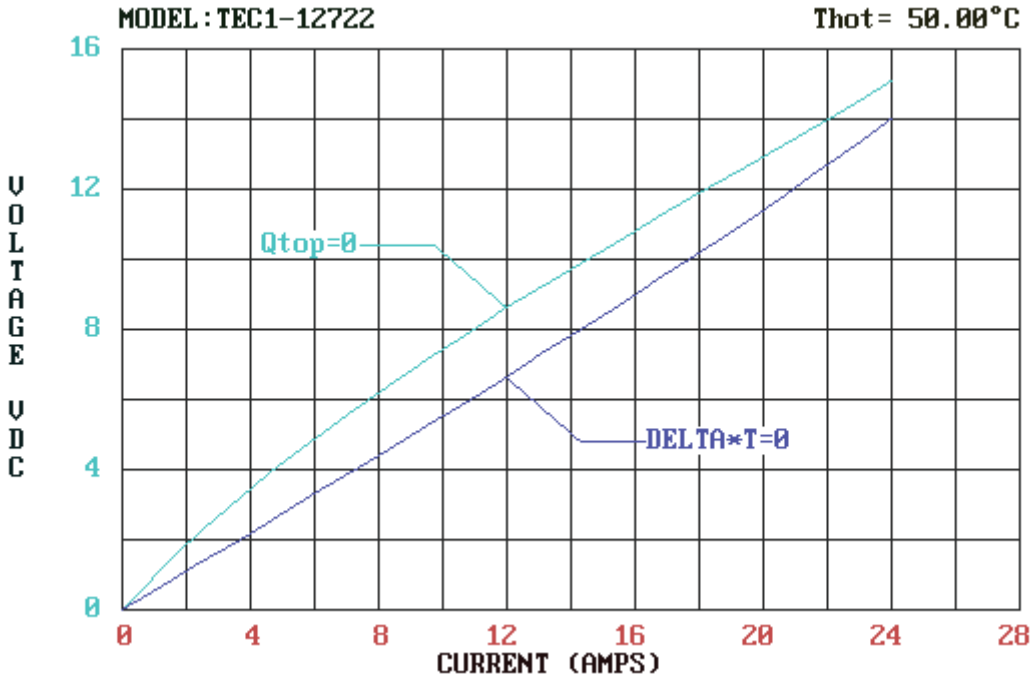
Item	Specification		Note
AC resistance	ACRes	0.55±10%	Ta=23℃
Max Current	Imax	20A	Th=30℃
Max Voltage	Vmax	15 V	Th=30℃
Max Deta T	ΔTmax	≥66℃	Qc=0 Th=30℃
Max cooling Power	Qcmax	187.2W	ΔT=0 Th=30℃
Working Temp	TR	-50～80℃	

3. Performance Graph






MODEL:TEC1-12722
Thot= 50.00°C
OPTIMUM C.O.P.
Qtop(W)
0
20
40
60
80
100
120
140
160
180
DELTA*T Deg C
0
20
40
60
80
0
4
8
12
16
20
24
28
CURRENT (AMPS)


MODEL:TEC1-12722
Thot= 50.00°C
VOLTAGE VDC
0
4
8
12
16
Qtop=0
DELTA*T=0
0
4
8
12
16
20
24
28
CURRENT (AMPS)

4. Materials

- Ceramic plate： 96%Al_2O_3 white color
- Silica gel: Sealed with 704 RTV
- Thermoelectric material: Bismuth Telluride
- Power Wire： AWG#18 or equal Sn-plated on the surface, high temperature resistance80℃

5. Notes

- When used for refrigeration, the red line is connect to the anode of power, black line connect to the cathode, the porcelain plate welded with wire is hot side; When used for heating, the black wire is connected to the anode, and the red line connect to the cathode. The porcelain plate with wires is cold side. Do not install it in a wrong way when installing.
- The surface that heat sinks and cold block contact with refrigeration components must be elaborate processing. During installation, the contact surface must be evenly coated with an appropriate amount of heat-conducting silicone grease to minimize thermal resistance. Do not connect to the power when a heat sink is not installed on the hot surface.
- If the hot side of refrigeration components is cooling bad, result in the hot side temperature is too high. In this case, not only affect the cooling effect, but also may cause components burned, the temperature of the hot side can not exceed 90℃, the temperature of the hot side is lower, the better cooling effect will be in the system.
- When installing, put the refrigeration components between the heat sinks and cold block, give an appropriate pressure to the heat sink at the center of the refrigeration components, in order to avoid pressure deviation when tighten the screws, pressure unevenness, cause crush the porcelain plate. According to statistics, the failure of refrigeration components due to improper installation accounts for more than 70% of the total failure, screw need to add spring washer and plastic insulation sleeve.

- In the table of main performance parameters, the maximum △Tmax, the maximum temperature difference voltage Vmax, the maximum temperature difference current Imax and the maximum cooling power Qcmax are all based on the limit values of SJ/T10135-10136-2010 standard for reference in the selection process. In practical application, the general voltage can be controlled within 60% ~ 80% of the limit value. The average temperature of the components at work increases, so the current decreases.
- The DC power supply ripple coefficient is less than 10%.
- Thermoelectric cooling module is made up by the ceramic plate and the semiconductor material,strength is not high, belong tofragile material, handle with care during use, do not knock against, avoid losses caused by broken porcelain plate.