Technical Data sheet

SHP50

Phononic's high-performance SHP50 is a solid-state heat pump based on thermoelectric cooling technology.Our devices deliver uniquely large heat pumping capacity in a small package while still providing accurate temperature control. Thermoelectric technology provides cooling or heating without sound or vibration, and Phononic's compact and robust mechanical design facilitates integration into heat exchange systems with superior reliability and performance in a wide variety of applications. Phononic's SHP50 is designed for medium temperature applications.

Specifications	
Hot side temperature	32 °C
dTmax, Air	71°C
Vmax	37 Volts
Imax	4.1 Amps
AC Resistance	7.7Ω

Features

- **High efficiency even at peak performance**
- **Robust packaging sealed against moisture ingress**
- **Compact form factor and flexible orientation**
- **RoHS & REACH Compliant**
- **No toxic refrigerants**

Applications

- **Compact beverage and food refrigerators**
- **Small appliances**
- **Pharmaceutical and medical cooling**
- **Recreational & consumer cooling**
- **Refrigerated compartments and drawers**
- **Portable refrigeration**
- **Pumped-loop and liquid cooling**

Benefits

- **High heat pumping performance**
  Reach temperatures and reliability unmatched by typical thermoelectric devices
- **Precise temperature control**
  Provide accurate and selectable freezing temperature ranges
- **Exceptional Design Support**
  Benefit from Design with Phononic program expertise, resulting in faster time to market with a design done right the first time

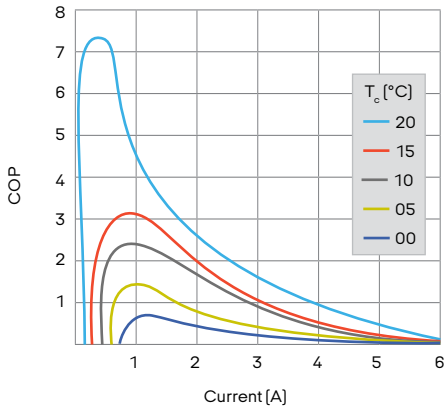
Application Considerations

- **Device is wired with red (positive) and black (negative) colored leads, 120cm ± 5cm long; wire ends are stripped. With the red lead to the right, the accept (cold) heat exchange surface is on top.**
- **Clamping Force: Recommended range of 100-300 kgf, Maximum force of 300 kgf.**
- **Use a torque wrench for even application of clamping force.**
- **Recommended Clamping Pressure: 100-300kgf**
- **Maximum Voltage: 36V, Maximum Current: 4.2A**
- **Effective heat-sinking of the heat exchange surfaces is required during operation.**
- **Do not allow heat exchange temperature to exceed 85°C**

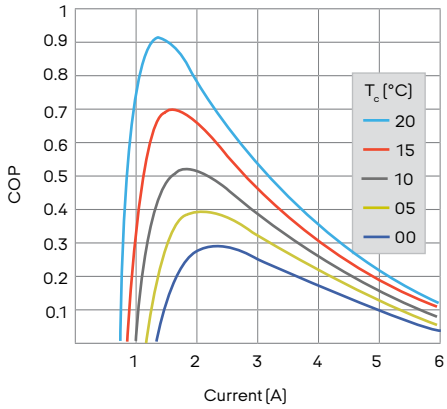
For performance information in alternative environments, or for thermal assembly design, contact Phononic.

Typical Performance Curves

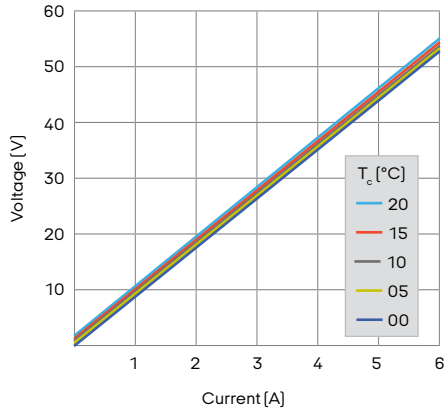
Coefficient of Performance, T_h = 25 °C



Coefficient of Performance, T_h = 50 °C



Voltage vs. Current, T_h = 25 °C



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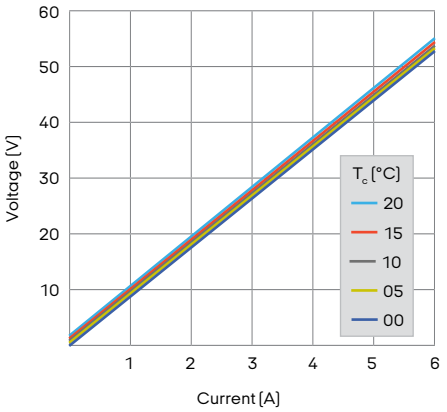
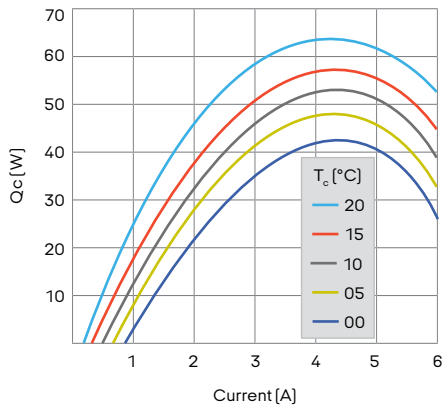
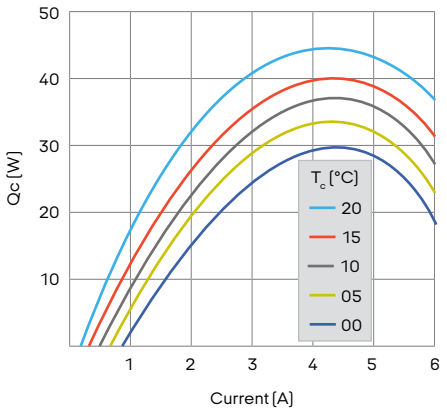


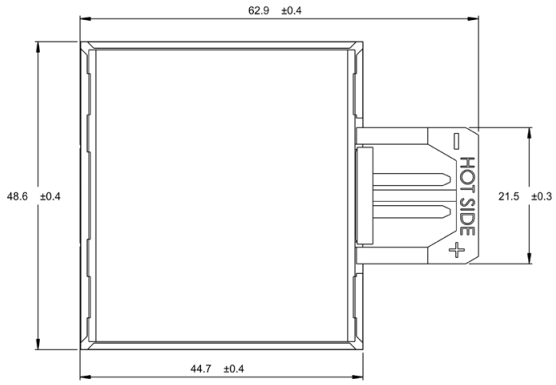
Heat Transferred, T_h = 25 °C



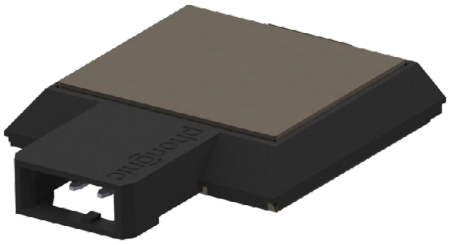
Heat Transferred, T_h = 50 °C

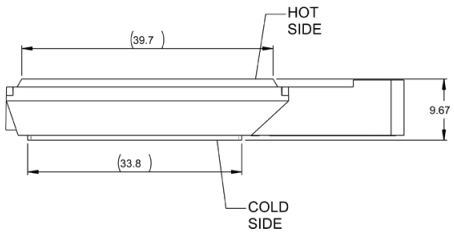


Mechanical Characteristics

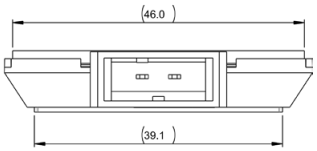


Top view





Side view



Front view

Find the right solution with Phononic
Contact us to learn more

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