Ceramic Plate Series Thermoelectric Cooler

The CP14-127-045-L1-EP-W4.5 is a high-performance and highly reliable standard Thermoelectric Cooler. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics. It has a maximum Qc of 71.3 Watts when ΔT = 0 and a maximum ΔT of 70.5 °C at Qc = 0.

Features
- Compact geometric sizes
- DC Operation
- RoHS-compliant

Applications
- Thermoelectric Coolers for Reagent Storage
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Cooling for Centrifuges
- Heads-Up Displays, Imaging Sensors
- Peltier Cooling for Machine Vision

ELECTRICAL AND THERMAL PERFORMANCE

Heat Pumped at Cold Side
Thot = 27 °C

Heat Pumped at Cold Side
Thot = 27 °C

Current vs Voltage (I vs V)
Thot = 27 °C

Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant.
SPECIFICATIONS*

Hot Side Temperature

<table>
<thead>
<tr>
<th>Temperature</th>
<th>27.0 °C</th>
<th>35.0 °C</th>
<th>50.0 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qcmax (ΔT = 0)</td>
<td>71.3 Watts</td>
<td>73.5 Watts</td>
<td>77.3 Watts</td>
</tr>
<tr>
<td>ΔTmax (Qc = 0)</td>
<td>70.5°C</td>
<td>73.5°C</td>
<td>78.8°C</td>
</tr>
<tr>
<td>Imax (I @ ΔTmax)</td>
<td>8.6 Amps</td>
<td>8.6 Amps</td>
<td>8.5 Amps</td>
</tr>
<tr>
<td>Vmax (V @ ΔTmax)</td>
<td>13.9 Volts</td>
<td>14.4 Volts</td>
<td>15.4 Volts</td>
</tr>
<tr>
<td>Module Resistance</td>
<td>1.50 Ohms</td>
<td>1.56 Ohms</td>
<td>1.68 Ohms</td>
</tr>
<tr>
<td>Max Operating Temperature</td>
<td>80 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>20.0 gram(s)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Thickness</th>
<th>Flatness / Parallelism</th>
<th>Hot Face</th>
<th>Cold Face</th>
<th>Lead Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>3.327 ±0.025 mm</td>
<td>0.025 mm / 0.025 mm</td>
<td>Lapped</td>
<td>Lapped</td>
<td>114.3 mm</td>
</tr>
<tr>
<td></td>
<td>0.131 ± 0.0010 in</td>
<td>0.001 mm / 0.001 in</td>
<td></td>
<td></td>
<td>4.50 in</td>
</tr>
</tbody>
</table>

SEALING OPTIONS

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Sealant</th>
<th>Color</th>
<th>Temp Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP</td>
<td>Epoxy</td>
<td>Black</td>
<td>-55 to 150°C</td>
<td>Low density syntactic foam epoxy encapsulant</td>
</tr>
</tbody>
</table>

NOTES

1. Max operating temperature: 80°C
2. Do not exceed Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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