SERIES: CP50 | DESCRIPTION: PELTIER MODULE

FEATURES
- arcTEC™ structure on select models
- solid state device
- precise temperature control
- quiet operation

![Peltier Module Image]

### FEATURES

- arcTEC™ structure on select models
- solid state device
- precise temperature control
- quiet operation

### MODEL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Input Voltage max (Vdc)</th>
<th>Input Current max (A)</th>
<th>Internal Resistance typ (Ω±10%)</th>
<th>Output Qmax T=27°C (W)</th>
<th>Output ∆Tmax T=50°C (W)</th>
<th>T_h=27°C (°C)</th>
<th>T_h=50°C (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP50141</td>
<td>2.1</td>
<td>5.0</td>
<td>0.31</td>
<td>5.5</td>
<td>6.1</td>
<td>68</td>
<td>75</td>
</tr>
<tr>
<td>CP50241</td>
<td>3.8</td>
<td>5.0</td>
<td>0.56</td>
<td>10.0</td>
<td>11.1</td>
<td>68</td>
<td>75</td>
</tr>
<tr>
<td>CP50301541</td>
<td>4.2</td>
<td>5.0</td>
<td>0.63</td>
<td>11</td>
<td>12.3</td>
<td>68</td>
<td>75</td>
</tr>
<tr>
<td>CP5030395</td>
<td>11.8</td>
<td>5.0</td>
<td>1.74</td>
<td>35.0</td>
<td>38.0</td>
<td>70</td>
<td>77</td>
</tr>
<tr>
<td>CP50341</td>
<td>8.6</td>
<td>5.0</td>
<td>1.29</td>
<td>23.0</td>
<td>25.7</td>
<td>70</td>
<td>77</td>
</tr>
<tr>
<td>CP50441</td>
<td>15.4</td>
<td>5.0</td>
<td>2.3</td>
<td>41.0</td>
<td>45.8</td>
<td>70</td>
<td>77</td>
</tr>
</tbody>
</table>

Notes:
1. Maximum voltage at ∆T max and T_h=27°C
2. Maximum current to achieve ∆T max
3. Measured by AC 4-terminal method at 25°C
4. Maximum heat absorbed at cold side occurs at I_max, V_max, and ∆T=0°C
5. Maximum temperature difference occurs at I_max, V_max, and Q=0W (∆T max measured in a vacuum at 1.3 Pa)
6. Designed with arcTEC™ structure

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Additional Resources:  
- Product Page  
- 3D Model
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>parameter</th>
<th>conditions/description</th>
<th>min</th>
<th>typ</th>
<th>max</th>
<th>units</th>
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</thead>
<tbody>
<tr>
<td>solder melting temperature</td>
<td>connection between thermoelectric pairs</td>
<td>235</td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>assembly compression</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>MPa</td>
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<tr>
<td>RoHS</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**MECHANICAL DRAWING**

Units: mm

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**MATERIAL**

- Ceramic plate: 96% Al₂O₃
- Wire leads: 20 AWG, tin
- Sealer: silicon rubber 703 RTV (between cold and hot side plates)
- Joint cover: silicon rubber 703 RTV
- Marking: P/N & S/N printed on cold side surface

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**MODEL NO.**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>LENGTH (mm)</th>
<th>WIDTH (mm)</th>
<th>THICKNESS (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP50141</td>
<td>15 ±0.3</td>
<td>15 ±0.3</td>
<td>4.0 ±0.1</td>
</tr>
<tr>
<td>CP50241</td>
<td>20 ±0.3</td>
<td>20 ±0.3</td>
<td>4.0 ±0.1</td>
</tr>
<tr>
<td>CP50301541</td>
<td>30 ±0.3</td>
<td>15 ±0.3</td>
<td>4.0 ±0.1</td>
</tr>
<tr>
<td>CP5030395</td>
<td>30 ±0.3</td>
<td>30 ±0.3</td>
<td>3.95 ±0.025</td>
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<tr>
<td>CP50341¹</td>
<td>30 ±0.3</td>
<td>30 ±0.3</td>
<td>4.0 ±0.1</td>
</tr>
<tr>
<td>CP50441¹</td>
<td>40 ±0.3</td>
<td>40 ±0.3</td>
<td>4.0 ±0.1</td>
</tr>
</tbody>
</table>

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Notes: 1. Wire lead strip length on models CP50341 & CP50441 is 10 ±3.0 mm.
CP50141 PERFORMANCE (Th=27°C)

CP50141 PERFORMANCE (Th=50°C)
CP50241 PERFORMANCE (Th=27°C)

CP50241 PERFORMANCE (Th=50°C)
CP50301541 PERFORMANCE (Th=27°C)

CP50301541 PERFORMANCE (Th=50°C)
CP5030395 PERFORMANCE (Th=27°C)

CP5030395 PERFORMANCE (Th=50°C)
CP50341 PERFORMANCE (Th=27°C)

ΔT = Th - Tc (°C)

Input Voltage (V) vs. Heat Pumped, Q (W)

- 5.0 A
- 4.0 A
- 3.0 A
- 2.0 A
- 1.0 A

CP50341 PERFORMANCE (Th=50°C)

ΔT = Th - Tc (°C)

Input Voltage (V) vs. Heat Pumped, Q (W)

- 5.0 A
- 4.0 A
- 3.0 A
- 2.0 A
- 1.0 A
CP50441 PERFORMANCE (Th=27°C)

![Graph showing performance at Th=27°C]

CP50441 PERFORMANCE (Th=50°C)

![Graph showing performance at Th=50°C]
## REVISION HISTORY

<table>
<thead>
<tr>
<th>rev.</th>
<th>description</th>
<th>date</th>
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<tbody>
<tr>
<td>1.0</td>
<td>initial release</td>
<td>09/08/2016</td>
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<tr>
<td>1.01</td>
<td>changed models CP50341 &amp; CP50441 to arcTEC™ structure</td>
<td>12/01/2017</td>
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<tr>
<td>1.02</td>
<td>changed thickness of CP50141, CP50241, CP50301541 models</td>
<td>09/20/2018</td>
</tr>
<tr>
<td>1.03</td>
<td>added model CP5030395, brand update</td>
<td>10/18/2019</td>
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The revision history provided is for informational purposes only and is believed to be accurate.

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