SERIES: CP39H | DESCRIPTION: PELTIER MODULE

FEATURES
- arcTEC™ structure on select models
- enhanced reliability for high thermal cycling
- superior thermal performance
- silicon sealed
- wide ΔT max
- low profile
- precise temperature control
- solid state construction

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>T_r=27°C (W)</th>
<th>T_r=50°C (W)</th>
<th>T_r=27°C (°C)</th>
<th>T_r=50°C (°C)</th>
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</thead>
<tbody>
<tr>
<td>CP39136H</td>
<td>3.8</td>
<td>3.9</td>
<td>0.85</td>
<td>8.6</td>
<td>9.5</td>
<td>70</td>
<td>77</td>
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<tr>
<td>CP39236H</td>
<td>8.8</td>
<td>3.9</td>
<td>1.95</td>
<td>18.7</td>
<td>20.9</td>
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<td>77</td>
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<td>CP39234030H</td>
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<td>3.9</td>
<td>3.38</td>
<td>31.0</td>
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<td>CP39301536H</td>
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<td>16.5</td>
<td>18.1</td>
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<td>CP393365H†</td>
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<td>3.9</td>
<td>3.50</td>
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<td>39.0</td>
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<td>CP394044365†</td>
<td>32.5</td>
<td>3.9</td>
<td>6.95*5%</td>
<td>71.8</td>
<td>80.0</td>
<td>70</td>
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Notes:
1. Maximum voltage at ΔT max and T_r=27°C
2. Maximum current to achieve ΔT 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 ΔT=0°C
5. Maximum temperature difference occurs at I_max, V_max and Q=0W (ΔT max measured in a vacuum at 1.3 Pa)
6. Designed with arcTEC™ structure.
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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<td>solder melting temperature</td>
<td>connection between thermoelectric pairs</td>
<td>235</td>
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<td>assembly compression</td>
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MECHANICAL DRAWING

units: mm

MATERIAL | PLATING
---------|---------
ceramic plate | 96% Al₂O₃
wire leads | 22 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

MODEL NO.  | LENGTH [mm] | WIDTH [mm] | THICKNESS [mm]
-----------|-------------|------------|---------------
CP39136H  | 15 ±0.3     | 15 ±0.3    | 3.6 ±0.025    
CP39236H  | 20 ±0.3     | 20 ±0.3    | 3.6 ±0.025    
CP39234030H | 23 ±0.3 | 40 ±0.3    | 3.0 ±0.05     
CP39301536H | 30 ±0.3 | 15 ±0.3    | 3.6 ±0.025    
CP393365H  | 30 ±0.3     | 30 ±0.3    | 3.65 ±0.025   
CP394044365 | 44 ±0.3 | 40.5 ±0.3  | 3.65 ±0.1    

CP39136H PERFORMANCE (Th=27°C)

CP39136H PERFORMANCE (Th=50°C)
CP39236H PERFORMANCE (Th=27°C)

- Input Voltage (V) vs Heat Pumped, Q (W) for different current values (0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A).

CP39236H PERFORMANCE (Th=50°C)

- Input Voltage (V) vs Heat Pumped, Q (W) for different current values (0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A).
CP39234030H PERFORMANCE (Th=27°C)

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

ΔT=Th-Tc (°C)

CP39234030H PERFORMANCE (Th=50°C)

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

ΔT=Th-Tc (°C)
CP39301536H PERFORMANCE (Th=27°C)

\[ \Delta T = T_h - T_c \]°C

- Input Voltage (V)
- Heat Pumped, Q (W)

CP39301536H PERFORMANCE (Th=50°C)

\[ \Delta T = T_h - T_c \]°C

- Input Voltage (V)
- Heat Pumped, Q (W)
CP393365H PERFORMANCE (Th=27°C)

Input Voltage (V) vs. Heat Pumped, Q (W) graph for different currents.

CP393365H PERFORMANCE (Th=50°C)

Input Voltage (V) vs. Heat Pumped, Q (W) graph for different currents.
CP394044365 PERFORMANCE (Th=27°C)

\[ \Delta T = T_h - T_c \ (°C) \]

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

- ΔT = 0°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 10°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 20°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 30°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 40°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 50°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A

CP394044365 PERFORMANCE (Th=50°C)

\[ \Delta T = T_h - T_c \ (°C) \]

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

- ΔT = 0°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 10°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 20°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 30°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 40°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
- ΔT = 50°C: 0.78 A, 1.56 A, 2.34 A, 3.12 A, 3.9 A
## REVISION HISTORY

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<th>description</th>
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<tr>
<td>1.0</td>
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<td>09/08/2016</td>
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<tr>
<td>1.01</td>
<td>updated datasheet</td>
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<tr>
<td>1.02</td>
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<td>1.05</td>
<td>logo, datasheet style update</td>
<td>08/05/2022</td>
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The revision history provided is for informational purposes only and is believed to be accurate.