# imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Ceramic Plate Series CP14-127-10 Thermoelectric Modules



Americas: +1.919.597.7300 Europe: +46.31.420530 Asia: +86.755.2714.1166 ets.sales@lairdtech.com www.lairdtech.com The Ceramic Plate (CP) Series of Thermoelectric Modules (TEMs) is considered 'the standard' in the thermoelectric industry.

This broad product line of high-performance and highly reliable TEMs is available in numerous heat pumping capacities, geometric shapes, and input power ranges. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the CP Series is designed for higher current and large heat-pumping applications.

#### **FEATURES**

- Precise temperature control
- Compact geometric sizes
- Reliable solid state operation
- No sound or vibration
- Environmentally friendly
- DC operation
- RoHS compliant

#### **APPLICATIONS**

- Medical lasers
- Lab science instrumentation
- Clinical diagnostics systems
- Photonics laser systems
- Electronic enclosure cooling
- Food & beverage cooling
- Chillers (liquid cooling)

#### **SPECIFICATIONS**

| TECHNICAL                 |      |      |
|---------------------------|------|------|
| Hot Side Temperature (°C) | 25°C | 50°C |
| Qmax (Watts)              | 18.7 | 20.5 |
| Delta Tmax (°C)           | 67   | 75   |
| Imax (Amps)               | 3.9  | 3.9  |
| Vmax (Volts)              | 8.6  | 9.2  |
| Module Resistance (Ohms)  | 1.92 | 2.17 |

| SUFFIX | THICKNESS<br>(PRIOR TO<br>TINNING) | FLATNESS &<br>PARALLELISM | HOT FACE   | COLD FACE  | LEAD LENGTH |
|--------|------------------------------------|---------------------------|------------|------------|-------------|
| L      | 0.185"±0.010"                      | 0.002"/0.002"             | Lapped     | Lapped     | 4.5″        |
| L1     | 0.185"±0.001"                      | 0.001"/0.001"             | Lapped     | Lapped     | 4.5″        |
| L2     | 0.185"±0.0005"                     | 0.0005"/0.0005"           | Lapped     | Lapped     | 4.5″        |
| ML     | 0.189"±0.010"                      | 0.002"/0.002"             | Metallized | Lapped     | 4.5″        |
| LM     | 0.189"±0.010"                      | 0.002"/0.002"             | Lapped     | Metallized | 4.5″        |
| MM     | 0.193"±0.010"                      | 0.002"/0.002"             | Metallized | Metallized | 4.5″        |

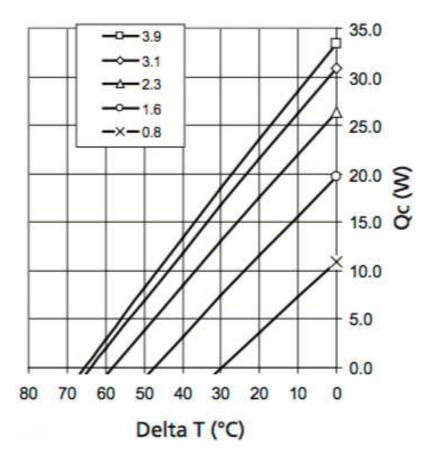
#### **SEALING OPTIONS**

| SUFFIX | SEALANT | COLOR | TEMP RANGE    | DESCRIPTION                                  |
|--------|---------|-------|---------------|--|
| RT     | RTV     | White | -60 to 204 °C | Non-corrosive, silicone adhesive             |
| EP     | Ероху   | Black | -55 to 150 °C | Low density syntactic foam epoxy encapsulant |

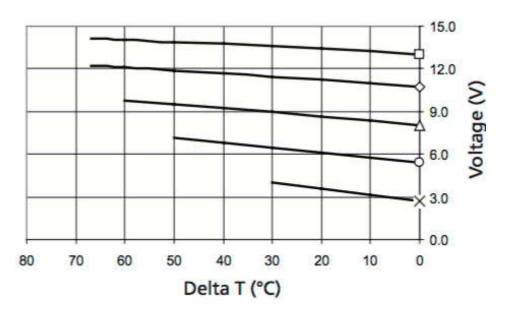


#### Performance Curves at Th =25°C

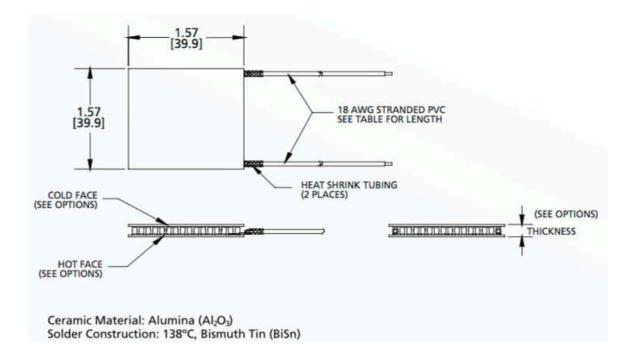
**THERMO** 



**ELECTRIC** 



### Laird



#### **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

#### LAIRD-ETS-CP14-127-10-DATA-SHEET-101416

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