



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!



## Contact us

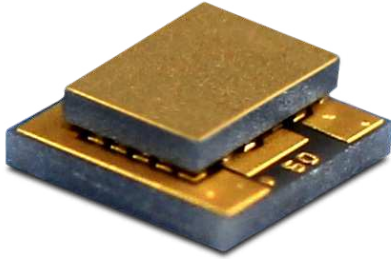
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# eTEC Series HV14,18,F0,0102,GG Thin Film Thermoelectric Module



The eTEC Series is a thin film thermoelectric module (TEM) with high heat flux density. Due to its size, input power requirements and heat pumping capacity this device is suited for use in applications to stabilize the temperature of sensitive optical components in telecom and photonics industries.

The eTEC HV14 can produce 1.3 Watts of cooling capacity at 25°C ambient in a 4 mm<sup>2</sup> footprint. Assembled with thin film semiconductor material and thermally conductive Aluminum Nitride ceramics, the eTEC Series is designed for lower current applications with tight geometric space constraints. Custom designs are available to accommodate metallization, pretin solder and ceramic patterns, however MOQ applies.

## FEATURES

- Micro Footprint
- High Heat Pumping Density
- Precise Temperature Control
- Reliable Solid State Operation
- <2 ms Response Time
- RoHS Compliant

## APPLICATIONS

- Laser Diodes
- Photodiodes
- Infrared (IR) Sensors
- Pump Lasers
- Crystal Oscillators
- Optical Transceivers

### PERFORMANCE SPECIFICATIONS

|                                  |      |      |
|----------------------------------|------|------|
| Hot Side Temperature (°C)        | 25°C | 50°C |
| Qmax (Watts)                     | 1.3  | 1.3  |
| Delta Tmax (°C)                  | 45   | 45   |
| Imax (Amps)                      | 1.0  | 0.9  |
| Vmax (Volts)                     | 2.3  | 2.5  |
| Qmax / area (W/cm <sup>2</sup> ) | 64   | 64   |
| Electrical Resistance (Ohms)     | 2.0  | 2.3  |
| Thermal Resistance (K/W)         | 46   | 46   |

### PACKAGE ASSEMBLY CONDITIONS

|                           |        |
|---------------------------|--------|
| Max Time Exposure > 290°C | 60 sec |
| Peak Assembly Temperature | 325°C  |

### TEMPERATURE CONDITIONS

|                           |       |
|---------------------------|-------|
| Max Operating Temperature | 150°C |
|---------------------------|-------|

### OPERATING CONDITIONS

|                               |               |
|-------------------------------|---------------|
| Max rate of change of current | 1.75 Amps/sec |
|-------------------------------|---------------|

Americas: +1 888.246.9050

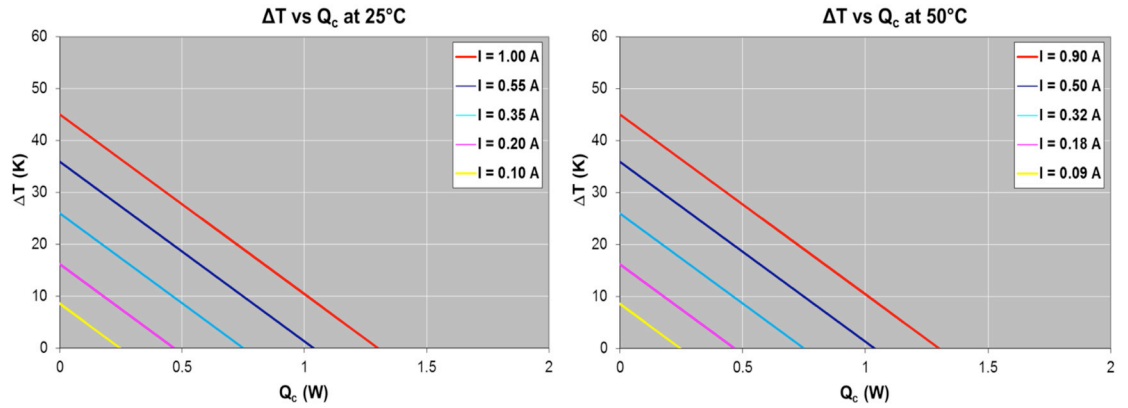
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Asia: +86.755.2714.1166

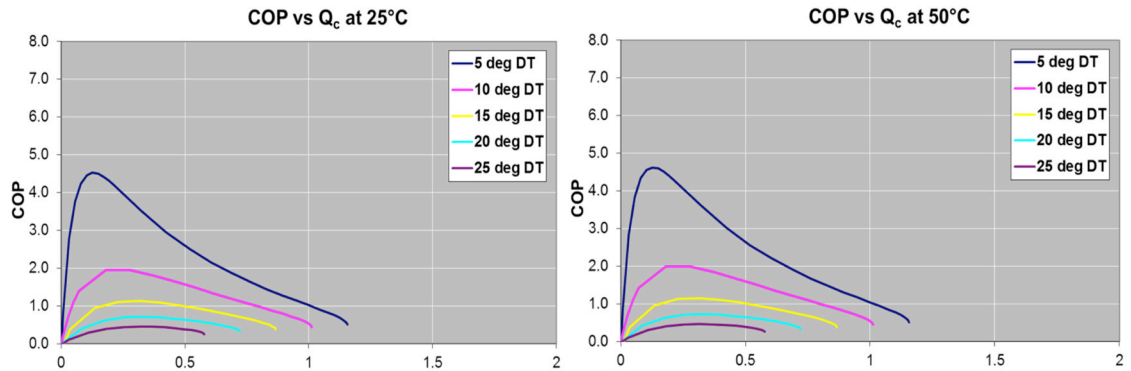
clv.customerpos@lairdtech.com

www.lairdtech.com

## PERFORMANCE CURVES



## COEFFICIENT OF PERFORMANCE

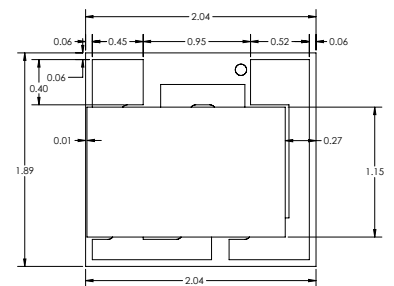


## ISOMETRIC DRAWING



### Standard

- Au metallization on exterior ceramic substrate surfaces
- Au wire bondable pads on hot side ceramic for lead attachment



## OPERATING TIPS

- Maintain good surface contact on heat dissipation mechanism prior to operation
- Do not exceed V<sub>max</sub> or I<sub>max</sub> values to maintain peak performance

THR-DS-eTEC-HV14 1113

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