

OptoTEC[™] Series HOT20,31,F2A,0909 Thermoelectric Module

Innovative **Technology** for a **Connected** World



The OptoTEC[™] Series is a miniature thermoelectric module (TEM). This product series is primarily used in applications to stabilize the temperature of sensitive optical components in telecom and photonics industries.

This product line is available in multiple configurations and surface finishing options. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the OptoTEC[™] Series is designed for lower current and lower heat-pumping applications. Custom designs are available to accommodate metallization, pretinning, ceramic patterns, and solder posts, however MOQ applies.

FEATURES **FEATURES**

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

APPLICATIONS

- Laser diodes
- CCD cameras
 - Infrared (IR) sensors
 - Pump lasers
 - Crystal oscillators
 - Optical transceivers

| PERFORMANCE SPECIFICATIONS | | | | | |
|----------------------------|------|------|--|--|--|
| Hot side temperature (°C) | 25 | 50 | | | |
| Qmax (watts) | 4.2 | 4.7 | | | |
| Delta Tmax (°C) | 67 | 77 | | | |
| Imax (amps) | 2.0 | 2.0 | | | |
| Vmax (volts) | 3.5 | 4.0 | | | |
| Module resistance (ohms) | 1.62 | 1.82 | | | |

| SUFFIX | THICKNESS (PRIOR TO TINNING) | FLATNESS & PARALLELISM | HOT FACE | COLD FACE | LEAD LENGTH |
|--------|---------------------------------|---------------------------|------------|------------|-------------|
| 11 | 0.086" +/- 0.002" | 0.002" / 0.002" | Lapped | Lapped | 2.0″ |
| ТВ | 0.086" +/- 0.0005" | 0.0005" / 0.0005" | Lapped | Lapped | 2.0" |
| 00 | 0.098" +/- 0.005" | NA / NA | Metallized | Metallized | 2.0" |
| 22 | 0.098" +/- 0.005" | NA / NA | Pre-tinned | Pre-tinned | 2.0" |
| GG | 0.098" +/- 0.005" | NA / NA | Au Plated | Au Plated | 2.0" |

SEALING OPTION

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

global solutions: local support ...

Americas: +1 888.246.9050 Europe: +46.31.704.67.57 Asia: +86.755.2714.1166

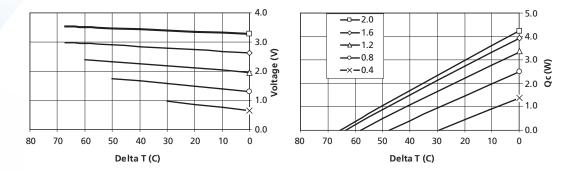
clv.customerpos@lairdtech.com www.lairdtech.com



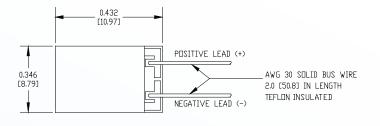
OptoTEC[™] Series HOT20,31,F2A,0909 Thermoelectric Module

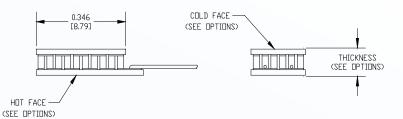
Innovative **Technology** for a **Connected** World

PERFORMANCE CURVES



MECHANICAL DRAWING





Ceramic Material 96% Alumina Ceramics Solder Construction: 271°C, Proprietary

OPERATING TIPS

- Max operating temperature: 175°C
- Do not exceed Imax or Vmax when operating module
- Reference assembly guidelines for recommended installation
- Solder tinning also available on metallized ceramics

THR-DS-HOT20,31,F2A,0909,11,W2.25 0809

Any information furnished by Lair Genologies, Inc. and its agents is believed to be accurate and reliable All specifications are subject to change without notice. Responsibility for the use and application of Laird Technologies materials rests with the end user, since Laird Technologies materials rests with the end user, since Laird Technologies materials rests with the end user, since Laird Technologies materials exists with the end user, since Laird Technologies materials rests with the end user, since Laird Technologies materials exists or products for any specific or general uses. Laird Technologies, the Laird Technologies for any Laird Technologies, the Laird Techn