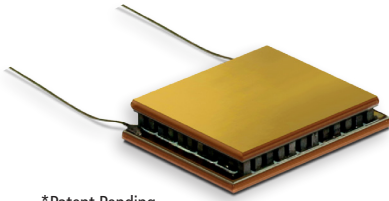


Tlam OptoTEC™ Series OT20,66,F0T,1211 Thermoelectric Module



*Patent Pending

The Tlam OptoTEC™ Series is a miniature thermoelectric module (TEM) that uses a thermally conductive dielectric with copper exteriors as substrates. This product line has improved heat spreading, higher mechanical integrity and can provide cost savings over standard ceramic based TEMs with similar form factors in high volume. This product series has been created for applications to stabilize the temperature of sensitive optical components in telecom, photonics, medical and consumer markets.

This product line is available in multiple configurations and surface finishing options. The Tlam OptoTEC™ Series is designed for lower current and lower heat-pumping applications and are easily customizable to accommodate alternate sizes, heat pumping capacities, pretinning, unique circuit patterns, or solder posts, however MOQ applies.

FEATURES

- High Heat Spreading
- Robust Mechanical Design
- Precise Temperature Control
- No Sound or Vibration
- Cost Savings in High Volume
- Flexible Customization

APPLICATIONS

- Laser Diodes
- Consumer Medical Lasers
- Optical Transceivers
- Pump Lasers
- Crystal Oscillators

PERFORMANCE SPECIFICATIONS

Hot side temperature (°C)	25	50
Qmax (watts)	9.0	9.9
Delta Tmax (°C)	67	77
I _{max} (amps)	2.0	2.0
V _{max} (volts)	7.5	8.5
Module resistance (ohms)	3.44	3.88

Passed Telcordia GR-468-CORE Issue 2 Reliability Testing

SUFFIX	THICKNESS (PRIOR TO TINNING)	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
22	0.104" +/- 0.005"	NA / NA	Pre-tinned	Pre-tinned	2.0"
GG	0.104" +/- 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	Epoxy	Black	-55 to 150 °C	Low-density syntactic foam epoxy encapsulant

Americas: +1 888.246.9050

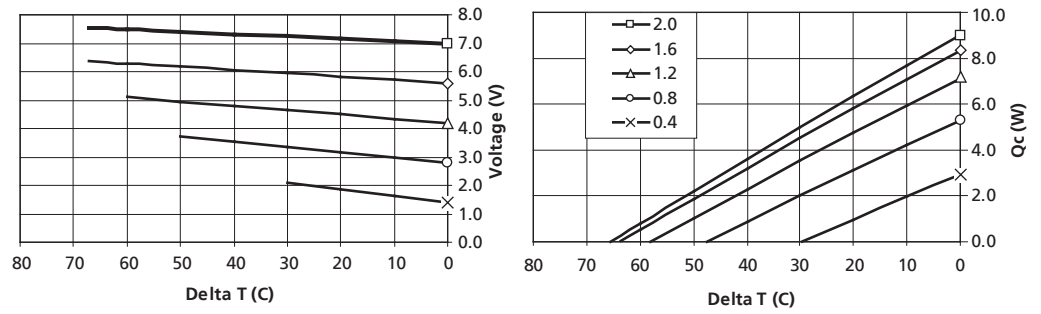
Europe: +46.31.704.67.57

Asia: +86.755.2714.1166

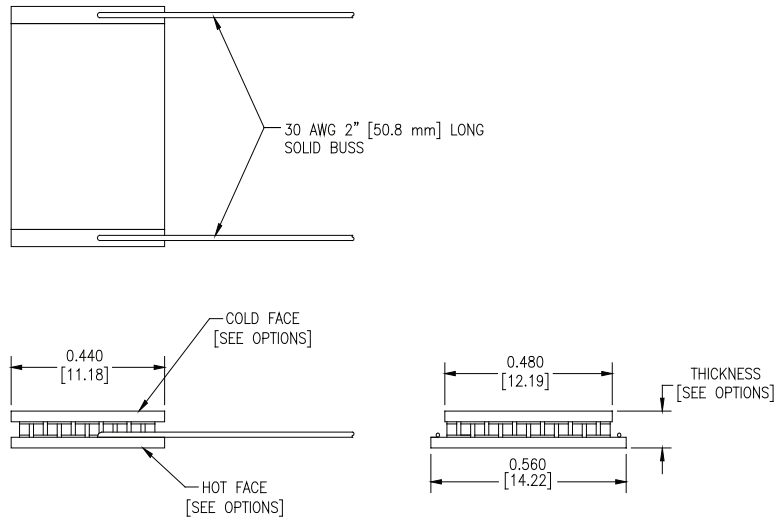
clv.customerpos@lairdtech.com

www.lairdtech.com

PERFORMANCE CURVES



MECHANICAL DRAWING



Solder Construction: 138°C BiSn
Tlam Substrates

OPERATING TIPS

- Max operating temperature: 80°C
- Do not exceed I_{max} or V_{max} when operating module
- Reference assembly guidelines for recommended installation
- Solder tinning also available on Tlam substrates

THR-DS-OT20,66,F0T,1211,GG,W2.25 1013

Any information furnished by Laird Technologies, 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 and its agents cannot be aware of all potential uses. Laird Technologies makes no warranties as to the fitness, merchantability or suitability of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2009 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trade marks or registered trade marks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird Technologies or any third party intellectual property rights.