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**Note: This product is not recommended for new designs.**

This product series has been replaced with the OptoTEC™ HTX Series.

The recommended replacement is:

MFG Part Number: 387007120

Description: HTX20-31-F2A-0909-11-W2.25

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

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

## APPLICATIONS

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

## SPECIFICATIONS

### PERFORMANCE

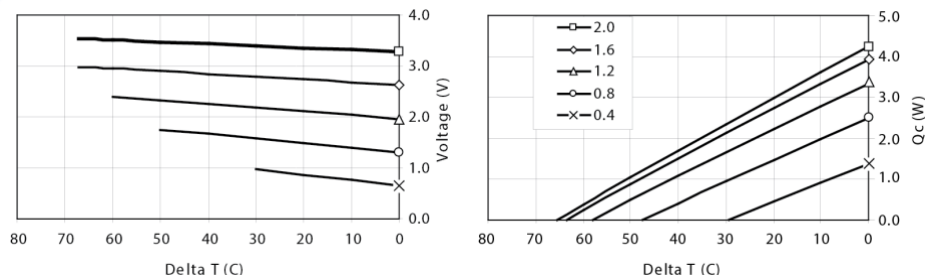
Hot Side Temperature (°C)	25	50
Qmax (Watts)	4.2	4.7
Delta Tmax (°C)	67	77
I <sub>max</sub> (Amps)	2.0	2.0
V <sub>max</sub> (Volts)	3.5	4.0
Module resistance (ohms)	1.62	1.82

SUFFIX	THICKNESS PRIOR TO TINNING	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
11	0.086" ± 0.002"	0.0002" / 0.002"	Lapped	Lapped	2.0"
TB	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	AuPlated	AuPlated	2.0"

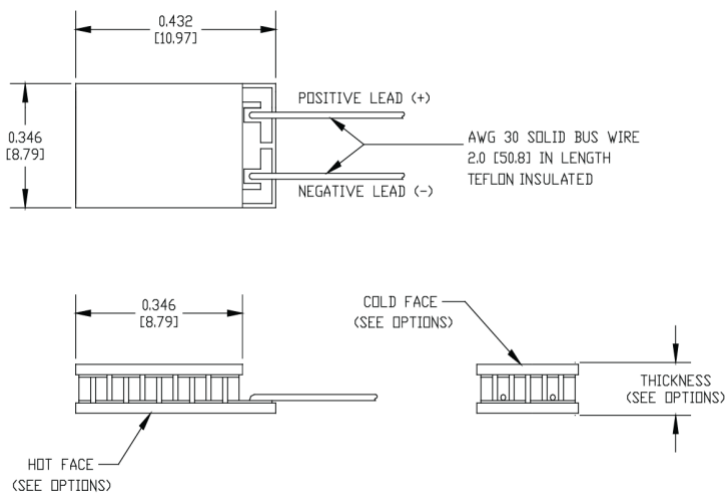
## SEALING OPTIONS

SUFFIX	SEALANT	COLOR	TEMP RANGE	DESCRIPTION
RT	RTV	White	-60 to 204 °C	Non-corrosive, silicone adhesive sealant

**PERFORMANCE CURVES**



**MECHANICAL DRAWING**



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

**OPERATING TIPS**

- Max operating temperature: 175°C
- Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
- Reference assembly guidelines for recommended installation
- Solder tinning also available on metallized ceramics

LAIRD-ETS-HOT20-31-F2A-0909-DATA-SHEET-101416

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