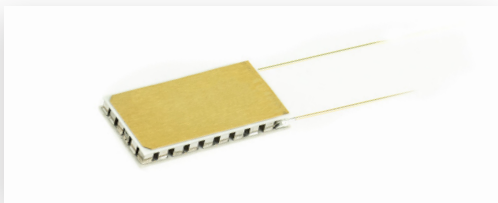
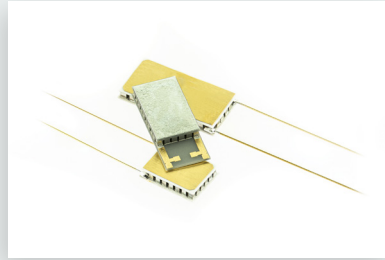


# TECs for Pump Lasers

## Technical Data Sheet

Pump lasers have extremely high performance demands – after all, you don't want to have performance issues when dealing with transatlantic fiber optic cable runs. Regardless of package type, pump lasers require reliable, larger-sized, high-capacity heat pumping TECs to support the amplification and transfer of data across extremely long distances. Our TEC solutions easily meet the high demands for pump laser performance.

When the standard of global communications is at stake and there's a massive construction budget on the line, you can't settle for standard products. All of our high-reliability, high-quality solutions are custom-designed to meet your needs.



### Features

- Extremely high quality solutions
- Low power consumption
- Very high heat density
- Compatible with I-temp or C-temp ranges
- Rigorously tested to stringent Telcordia GR-468-CORE and JEDEC specifications
- Application-specific designs available

### End-Customer Applications

- C-band/L-band Raman Amplification sources
- 980nm Pump sources for EDFA (erbium-doped fiber amplifiers)

### Integration Options

- Bare wire bond pads
- Wire bonding posts
- Cold side electrical connections
- High-temperature solder
- Solder pre-tinning
- Pre-attached wires
- Patterned cold-side metallization
- Pre-attached cold-side thermistor
- Automation-ready packaging

### Benefits:



#### Extremely Low Power Consumption

Achieve 30% lower power consumption than typical TEC performance



#### High Heat Pumping Density

Realize 60% higher heat pumping density in a very thin TEC



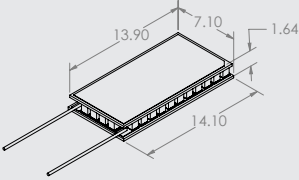
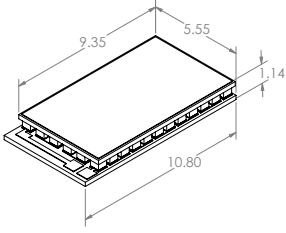
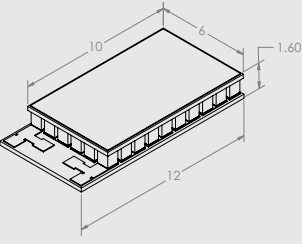
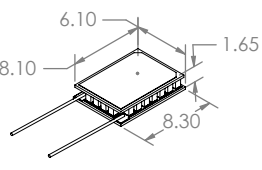
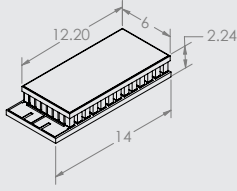
#### Exceptional Design Support

Benefit from our expertise: we'll consult with you, enabling faster time to market with a design done right the first time

**Exceeds Performance Standards Over Very Long Reaches**

## Pump Laser Product Specifications

### TEC Performance ( $T_{HOT} = 75^{\circ}C$ )

Part Number	TEC Dimensions	AC Resistance ( $\Omega$ )	Optimum heat load (Watts)*	$Q_{C,MAX}$ [Watts]	$\Delta T_{MAX}$ [ $^{\circ}C$ ]	$V_{MAX}$ [Volts]	$I_{MAX}$ [Amps]
FBN-011566		1.1	1.3 - 4.3	13	94	5.6	4.3
FBM-012892		1.3	1.2 - 3.9	11.6	83	5.7	3.7
FBN-012895		1.2	1.0 - 3.4	10.3	91	5	3.7
FBN-008830		1.1	0.6 - 1.9	5.7	93	3.7	2.8
FBN-012890		3.7	0.9 - 3.0	9.1	95	8.4	1.9

\* Optimal heat load is the cold side heat load range under which the TEC operates at or near highest efficiency conditions. Hot side temperature is  $75^{\circ}C$ , cold side temperature is  $45^{\circ}C$  to  $55^{\circ}C$ .

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