

## 820nm SUPERLUMINESCENT DIODES

Based on Princeton Lightwave's advanced high power angled ridge waveguide structure platform, we have developed a series of products to meet a wide range of application needs.

This 4  $\mu\text{m}$  ridge, angled chip, in a GaAs structure for 820 nm, is packaged in a thermo-electric cooled standard butterfly package and can be pigtailed with either SMF or polarization maintaining fiber (PMF).



### Features:

- Wide Bandwidth: 20 nm FWHM
- Low Noise Ripple: 3.5% @ 4 mW

### Applications:

- Fiber Optic Gyro
- Medical Diagnostic Equipment
- Instrumentation

### Key Product Specifications:

Parameter	Symbol	Units	Conditions	Min.	Typ.	Max.
Output Power	$P_f$	mW	Power in Fiber	2	4	-
Operating Current	$I_{th\ BOL}$	mA	Forward drive current; beginning of life (BOL)	-	140	300
EOL Operating Current	$I_{f\ EOL}$	mA	Forward drive current; end of life (EOL)	-	-	1.2 * $I_{f\ BOL}$
Forward Voltage	$V_f$	V	At rated power; BOL	-	-	2.5
Center Wavelength	$\lambda_c$	nm	RMS peak $\lambda$ at rated power	$\lambda_c - 10$	820	$\lambda_c + 10$
Spectral Width	$\Delta\lambda$	nm	Measured at 3dB from peak	15	20	-
Spectral Noise	$N_\lambda$	%	Measured at spectral peak		1.7%	3.5%
Polarization Extinction Ratio	PER	dB		8		
<b>Thermoelectric Cooler</b>						
TEC Current	$I_c$	A	Max. $\Delta T = 40^\circ\text{C}$	-	-	3.4
TEC Voltage	$V_c$	V	Max. $\Delta T = 40^\circ\text{C}$	-	-	3.8
Thermistor Resistance	$R_{th}$	k $\Omega$	Thermistor temperature $T_s = 25^\circ\text{C}$	9.5	10	10.5
Thermistor Constant	B	K		-	3900	-
<b>Package</b>						
Case Temperature	$T_c$	$^\circ\text{C}$		0	-	65
Hermeticity	-	atm cc/s		-	-	$5 \times 10^{-7}$
Internal Moisture	-	ppm		-	-	5000
Module Useful Lifetime		Yrs.	Chip Temperature of $25^\circ\text{C}$	25	-	-
<b>Fiber pigtail</b>						
Polarization Maintaining Fiber, 80 micron and 125 micron diameter, un-terminated (customer specified)						

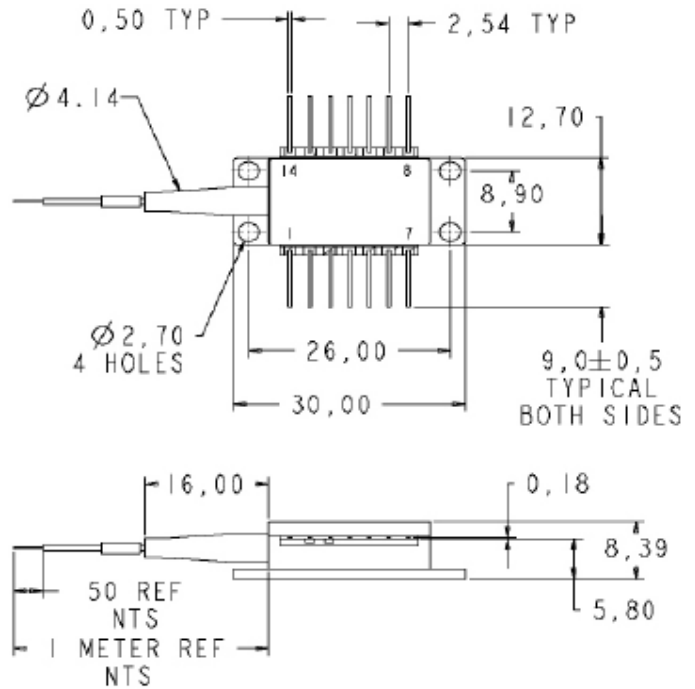
#### 4. MECHANICAL SPECIFICATIONS

The 14 pin butterfly package contains the SLD and is hermetically sealed. The negative temperature coefficient thermistor in the package has a nominal resistance of 10 kΩ. The Steinhart-Hart coefficients with 10 μA current are:

A = 1.467852 E-03

B = 2.382437 E-04

C = 1.022214 E-07



Pin	Name	Pin	Name
1	TEC (-)	8	PD Cathode
2	TEC (+)	9	PD Anode
3	Thermistor	10	Thermistor
4	Thermistor	11	Thermistor
5	Case ground	12	NC
6	SLD Anode	13	Case ground
7	SLD Cathode	14	TEC (-)

Contact Sales and Marketing for more information on this product at 609-495-2600 or email sales and marketing at: [sales@princetonlightwave.com](mailto:sales@princetonlightwave.com)