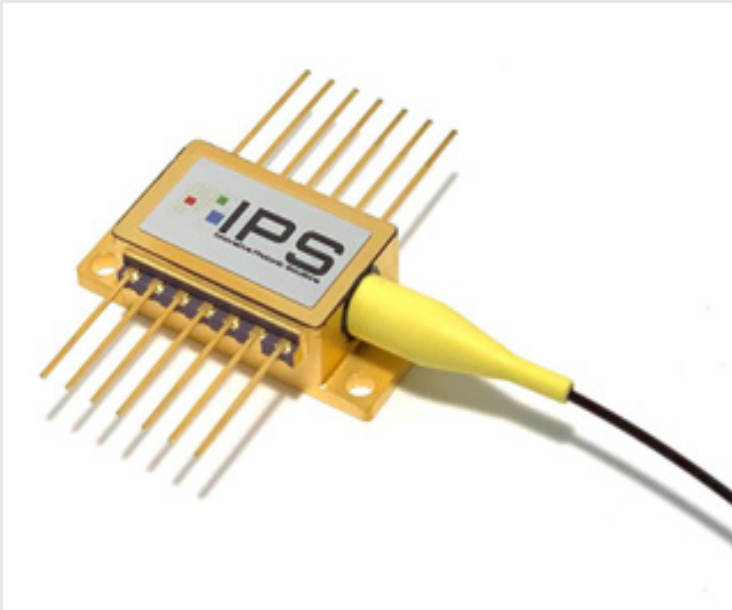


Single Mode Fiber Coupled Butterfly



Innovative Photonic Solutions' proprietary single-mode wavelength-stabilized laser features high output power with ultra-narrow spectral bandwidth and a diffraction limited output beam. Designed to replace expensive DFB, DBR, fiber, and external cavity lasers, the single-mode spectrum stabilized laser offers superior wavelength stability over time, temperature, and vibration, and is manufactured to meet the most demanding wavelength requirements. The single-mode packaged product line comes standard with a circularized output beam, internal photodiode, thermistor and ESD protection. Lasing wavelength can be accurately specified and repeatedly manufactured to within +/-0.1 nm upon request.

Applications

This laser package is designed for OEM Integration and is ideal for:

- High Resolution Raman Spectroscopy
Confocal Microscopy
Raman Imaging
Portable Raman
Process Raman
- Direct-diode Frequency Doubling
- Fiber Laser Seeding
- Metrology & Interferometry
- Remote Sensing

Key Features

- High-Power Single-Spatial-Mode, Single-Frequency Output
- Ultra-Narrow Spectral Linewidth (< 100 kHz)
- Stabilized Output Spectrum (< 0.007 nm/°C)
- Excellent Beam Quality ($M^2 < 1.1$)
- Integral ESD Protection & Thermistor
- Integral Laser Line Filter
- SMSR 70 dB w/ laser line filter (40 dB without)

Standard Wavelengths

633nm	785nm	1030nm
638nm	808nm	1053nm
780nm	830nm	1064 nm
783nm	976nm	1064.Xnm

Specifications

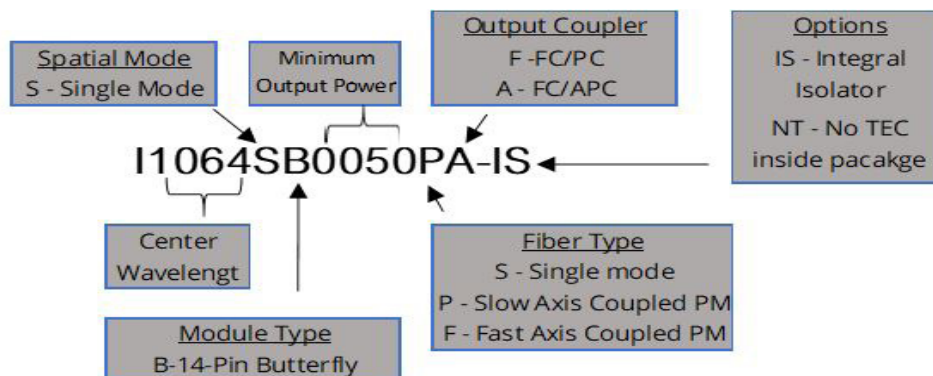


Wavelength Tolerance	+/- 0.5 nm
Spectral Linewidth ($\Delta\lambda$)	~ 100 kHz Typical
Wavelength Stability Range	15 C - 45 °C
SMSR	35 - 45 dB
Fiber Options	Single-Mode
	Polarization Maintaining, Panda Type
PER	>17dB, 20dB Typical
Polarization Orientation	Standard is PM slow.
Output Power Stability	1% Typical

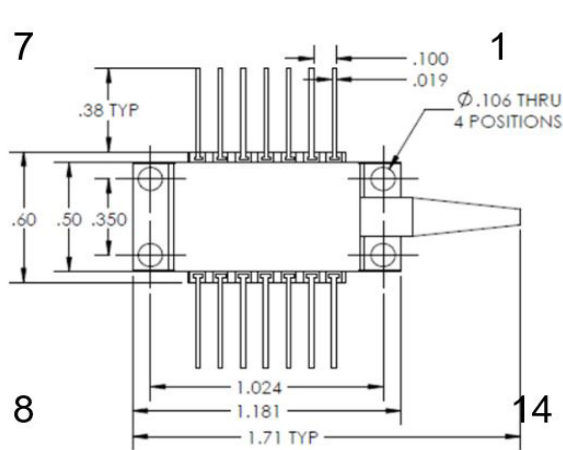
λ (nm)	Min. Power (mW)	Base Part Number	Max Current, Voltage	Connector
633	20	I0633SB0020P	170mA, 3.3V	Unterminated
638	25	I0638SB0025P	170mA, 3.3V	
780	50	I0780SB0050P	220mA, 2.3v	
783	50	I0783SB0050P	220mA, 2.3V	
785	50	I0785SB0050P	250mA, 2.3V	
	100	I0785SB0100P	400mA, 2.5V	
808	50	I0808SB0050P	250mA, 2.3V	
	100	I0808SB0100P	400mA, 2.5V	
	200	I0808SB0200P	550mA, 2.5V	
830	50	I0830SB0050P	250mA, 2.3V	
976	220	I0976SB0220P	650mA, 2.2V	
	500	I0976SB0500P	1000mA, 2.2V	
1030	50	I1030SB0050P-IS	500mA, 2.2V	
	100	I1030SB0100P	500mA, 2.2V	
	280	I1030SB0280P	1000mA, 2.2V	
1053	50	I1053SB0050P-IS	350mA, 2.2V	
	120	I1053SB0120P	400mA, 2.2V	
	300	I1053SB0300P	1000mA, 2.2V	
1064.X	50	I1064.XSB0050P-IS	350mA, 2.2V	
	120	I1064.XSB0120P	400mA, 2.2V	
	300	I1064SB0300P	1000mA 2.2V	

Part Schema

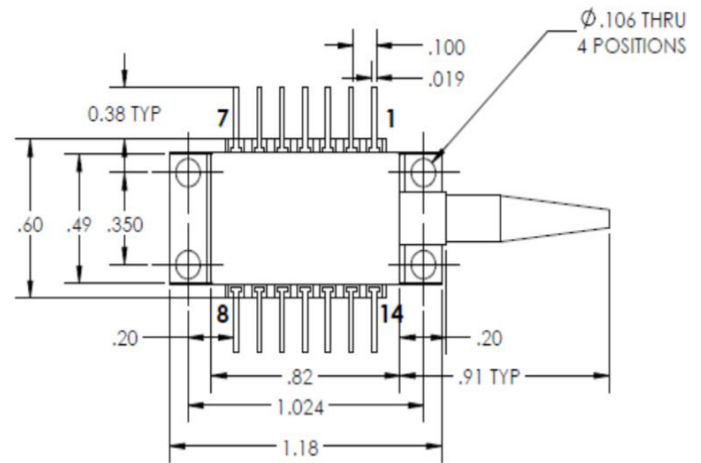
- *Add A after P in part number for FC/APC Connector.
- *Substitute the "P" in the part number for PM fast axis polatization orientation
- * substitute "X" for 0, 1, 3, 4, wavelength measured in vacuum)
- * Butterfly packages with internal isolators & power >250 mW utilize an extended tube design



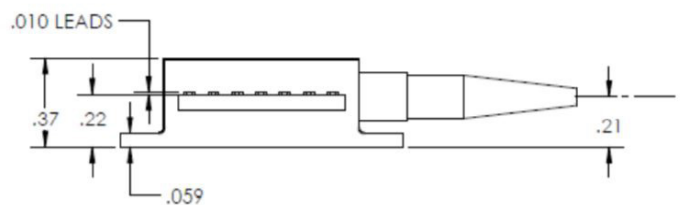
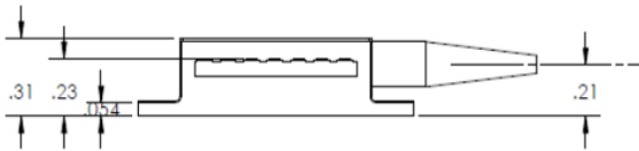
Mechanical Drawings



Standard Package



Extended Tube Package



OEM Laser Product: This laser module is designed for use as a component (or replacement) part and is thereby exempt from 21 CFR1040.10 and 1040.11 provisions.

Operational Notes

1. 14-pin BF should be mounted on a heat sink with a thermal compound (thermal grease).
2. Take care not to over-tighten screws when mounting. This can bend the BF package causing damage and hindering performance and is not covered under warranty.
3. Laser and TEC driver circuitry should be configured in a manner to prevent power /current / voltage surges and spikes.
4. IPS recommends not grounding anode and cathode as this can cause ground loops.
5. Laser and TEC driver circuitry should be configured in a manner to prevent power /current / voltage surges and spikes.
6. Do not retro-reflect beam! This can cause Catastrophic Optical Damage (COD) and is not covered under warranty.
7. Laser will operate in single frequency mode at set-points between 10 and 45 degrees, however, optimal operating set point must be determined for each laser diode to avoid mode-hopping (see note 4).
8. To determine optimal operating point, plot output power vs temperature to determine where mode-hop locations are. Set operating temperature halfway between mode-hops. This will ensure the most stable operation (IPS can offer the option of determining this optimal operating point for each diode).

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