



808nm Wavelength-Stabilized Lasers

Alfalight diode lasers with Wavelength Stabilization Technology (WST) have a monolithic grating integrated directly onto the semiconductor chip itself. The grating-defined wavelength is stable relative to changes in temperature and drive current while maintaining a narrow spectral width. These lasers do not require any cooling or external components to maintain wavelength, reducing their energy consumption by up to three times over a thermally-controlled pump laser. Pump absorption in a microlaser configuration is enhanced by up to 87%.



- On-die integrated semiconductor grating
- Narrow linewidth (0.5nm)
- Wide locking range ($\Delta T > 30^{\circ}\text{C}$)
- 6-pin, C-mount and Q-mount packages
- Nd:YAG and Nd:YVO₄ microlasers
- Thulium-doped fiber laser pumping
- Alkali pumping

Device Characteristics*

Electro-Optical	Symbol	Fiber-coupled 6-pin package AM6-808BW-10-201			Chips on carrier AMC-808BW-02-251 AMQ-808BW-02-251			Units
		Min	Typ	Max	Min	Typ	Max	
Center wavelength (T = 35°C)	λ_c	808 ± 1.5			808 ± 1.5			nm
Output power, CW	P_o	2.0			2.5			W
Operating current	I_o	2.7			3.0			A
Forward voltage	V_f	1.7	2.0		1.7	2.0		V
Threshold current	I_{th}	0.45			0.45			A
Spectral width (FWHM)	$\Delta\lambda$	0.4			0.4			nm
Power conversion efficiency	PCE	43%			50%			
Spectral shift over temperature	$d\lambda/dT$	0.07			0.07			nm/°C
Spectral shift over power	$d\lambda/dP$	0.4			0.4			nm/W
Locking range over temperature**	T_c	15	45		15	45		°C
Locking range over power	P_o	0.2	2.0		0.2	2.5		W

Temperature

Thermistor value at 25°C	R_{th}	9.5	10	10.5	n/a			kΩ
Thermistor constant, 0 - 50°C	β	3892			3892			K

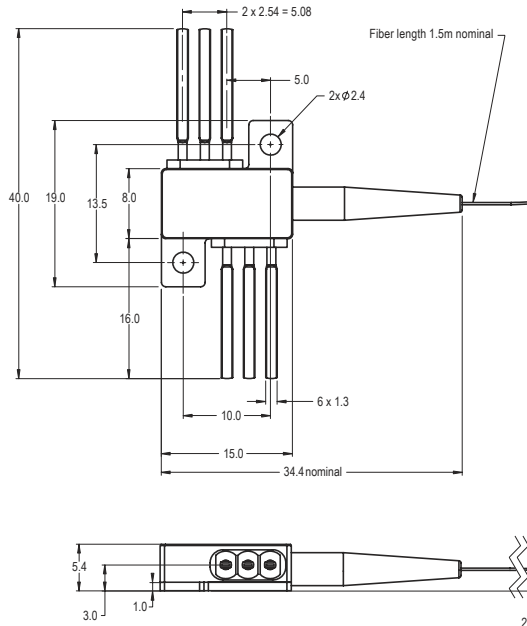
Mechanical

Case operating temperature	T_c	0	25	50	0	25	50	°C
Case storage temperature	T_c	-40	85		-40	85		°C
Fiber core diameter		105			n/a			μm
Emitter stripe width					94			μm
Beam divergence		n/a			8° × 37°			
Fiber NA	NA	0.15			n/a			

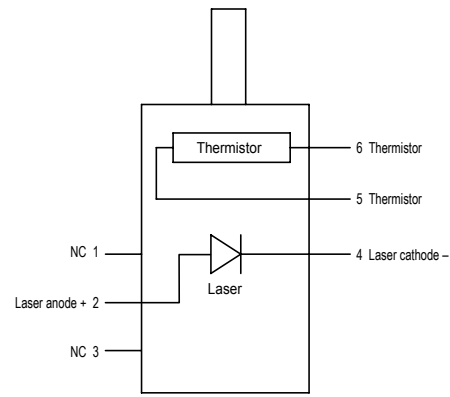
* All conditions are at 25°C case temperature unless otherwise noted.

** Power outside of 804-812nm range is less than 10% of the total power.

6-pin Package Dimensions

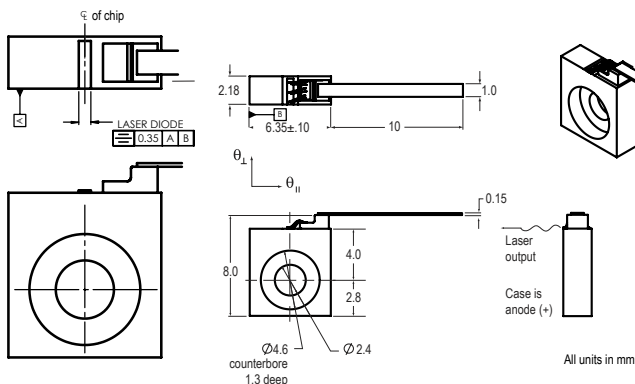


6-pin Package Pinout

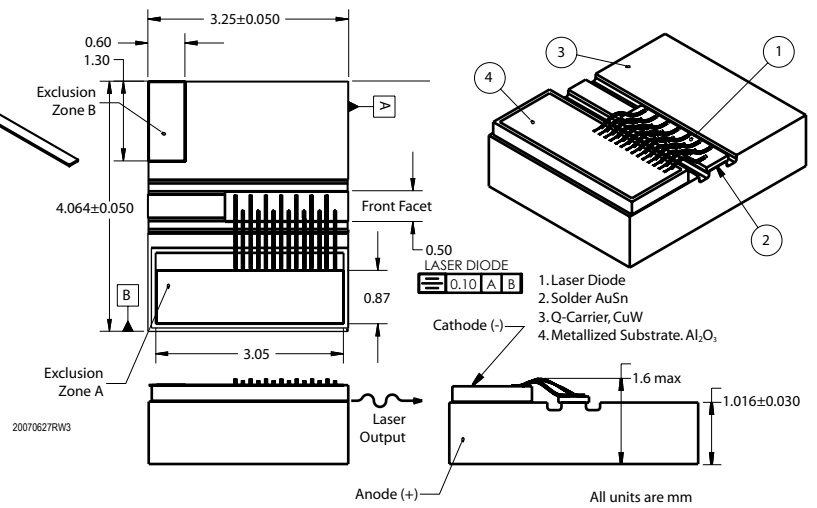


NOTE: LASER POLARITY IS REVERSED FROM PREVIOUS ALFALIGHT 6-PIN PACKAGES

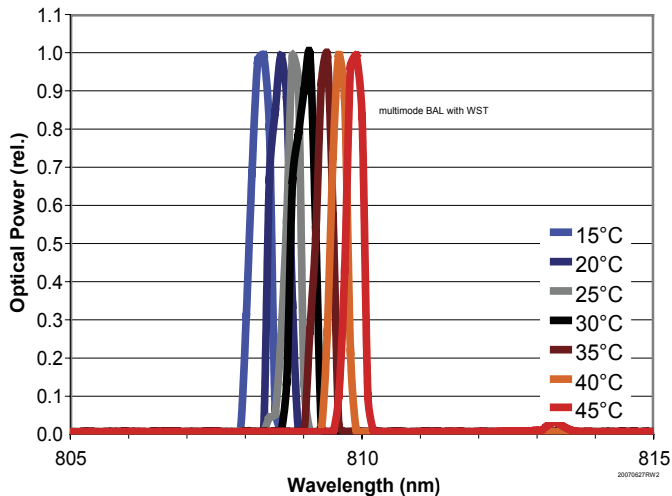
C-mount Package Dimensions



Q-mount Package Dimensions



Spectrum



Locking Range

