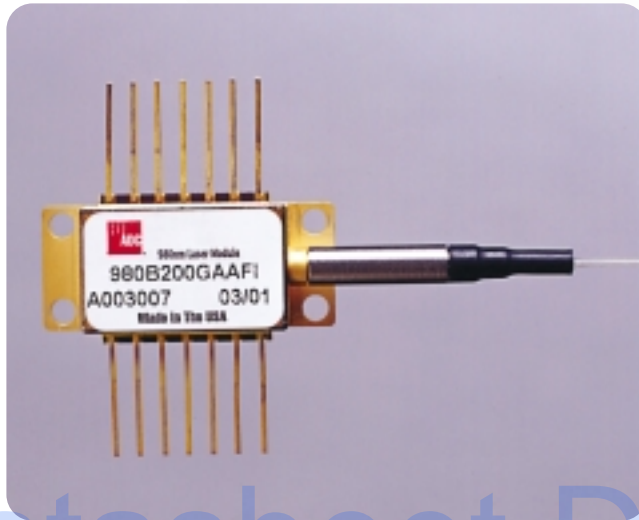


980 nm Laser Module

Fiber Bragg Grating Stabilized



Datasheet.Directory

Features:

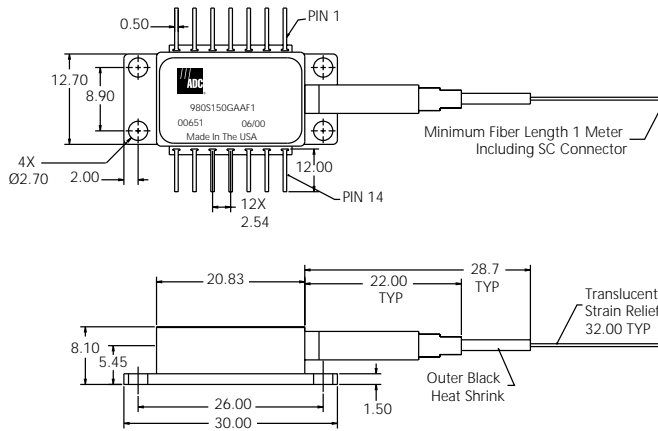
- Fiber Bragg Grating wavelength stabilization
- Unique patent-pending Epitaxial Mirror On Facet (EMOF) technology eliminates Catastrophic Optical Mirror Damage (COMD) at the facet
- Vertically integrated laser diode and module manufacturing facility ensures reproducible and consistent laser process
- Molecular Beam Epitaxy (MBE) grown laser structure optimizes spectral performance
- High-power operation
- Robust optical train
- Fully Bellcore GR-468-CORE and GR-1312-CORE compliant
- High-power 14-lead "butterfly" laser module designed to exceed the reliability demands of EDFA applications in telecommunications



980 nm Laser Module

Fiber Bragg Grating Stabilized

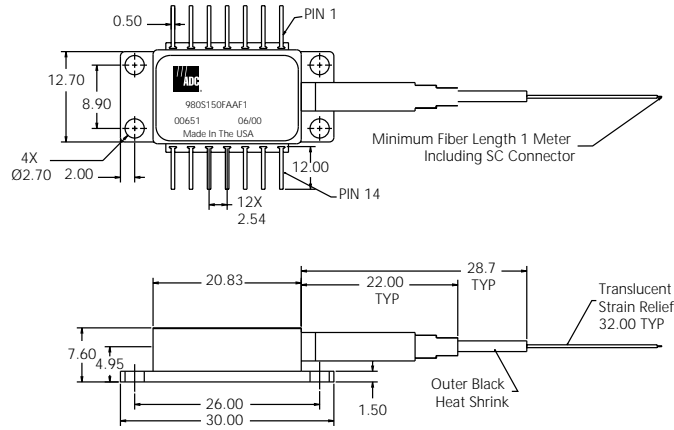
5/01 • 100366PR 980 nm Laser Module BGS



Standard 980 nm Laser Module

Lead Number and Function

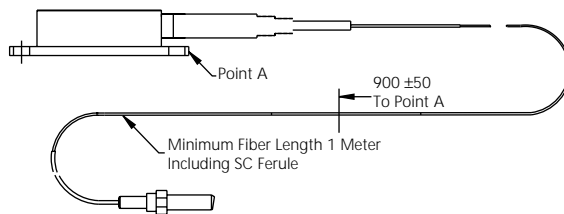
- 1) Thermoelectric Cooler (+)
- 2) Thermistor
- 3) Photo Diode Anode
- 4) Photo Diode Cathode
- 5) Thermistor, Case Ground
- 6) NC
- 7) NC
- 8) NC
- 9) NC
- 10) Laser Anode, Case Ground, ESD Protection
- 11) Laser Cathode, ESD Protection
- 12) NC
- 13) Case Ground
- 14) Thermoelectric Cooler (-)



Fully Floating 980 nm Laser Module

Lead Number and Function

- 1) Thermoelectric Cooler (+)
- 2) Thermistor
- 3) Photo Diode Anode
- 4) Photo Diode Cathode
- 5) Thermistor
- 6) NC
- 7) NC
- 8) NC
- 9) NC
- 10) Laser Anode, ESD Protection
- 11) Laser Cathode, ESD Protection
- 12) NC
- 13) Case Ground
- 14) Thermoelectric Cooler (-)





980 nm Laser Module

Fiber Bragg Grating Stabilized

Operating Specifications

LASER MODULE

| | |
|--|-------------------------------------|
| Threshold Current: | 15 mA typical, 25 mA maximum |
| Forward Voltage at ($L_{(Kink)}$): | 1.8 V typical, 2.5 V maximum |
| Kink Current | |
| $L_{(Kink)} = 110$ mW: | 185 mA typical, 225 mA maximum |
| $L_{(Kink)} = 120$ mW: | 200 mA typical, 245 mA maximum |
| $L_{(Kink)} = 130$ mW: | 215 mA typical, 260 mA maximum |
| $L_{(Kink)} = 140$ mW: | 230 mA typical, 280 mA maximum |
| $L_{(Kink)} = 150$ mW: | 250 mA typical, 300 mA maximum |
| $L_{(Kink)} = 160$ mW: | 265 mA typical, 320 mA maximum |
| $L_{(Kink)} = 170$ mW: | 280 mA typical, 335 mA maximum |
| $L_{(Kink)} = 180$ mW: | 295 mA typical, 355 mA maximum |
| $L_{(Kink)} = 190$ mW: | 310 mA typical, 375 mA maximum |
| $L_{(Kink)} = 200$ mW: | 322 mA typical, 390 mA maximum |
| Center Wavelength (Peak at $L_{(Kink)}$): | $\lambda \pm 1$ nm |
| Laser Diode Operating Temperature: | 20°C to 30°C |
| Total Power Consumption: | 6 W |
| Hermeticity: | 5×10^{-7} Atm cc/s minimum |
| Internal Moisture: | 5000 ppm maximum |
| FWHM ($\Delta\lambda @ L_{(Kink)}$) | 1 nm maximum |

MONITOR PHOTODIODE

| | |
|---------------|-------------------------------|
| Photocurrent: | 200 μ A to 2500 μ A |
| Dark Current: | 100 nA maximum |
| Responsivity: | 1 μ A/mW to 25 μ A/mW |

Absolute Maximum Rating Specifications

ENVIRONMENTAL

| | |
|------------------------------|---------------|
| Storage Temperature: | -40°C to 85°C |
| Operating Temperature: | -20°C to 85°C |
| Lead Solder Temperature: | 260°C |
| Laser Operating Temperature: | 20°C to 30°C |
| Lead Solder Time: | 10 Sec |

LASER MODULE

| | |
|---------------------|--------|
| Fiber Output Power: | 250 mW |
| Forward Current: | 460 mA |
| Reverse Voltage: | 2 V |
| Reverse Current: | 2.5 mA |

MONITOR PHOTODIODE

| | |
|------------------|-------|
| Current: | 4 mA |
| Reverse Voltage: | 150 V |

FIBER TAIL ASSEMBLY

| | |
|--------------------|---------------|
| Fiber Temperature: | -40°C to 85°C |
| Fiber Pull Force: | 5 N |
| Bend Radius: | 16 mm |

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980 nm Laser Module

Fiber Bragg Grating Stabilized

Absolute Maximum Rating Specifications (Continued)

THERMOELECTRIC COOLER

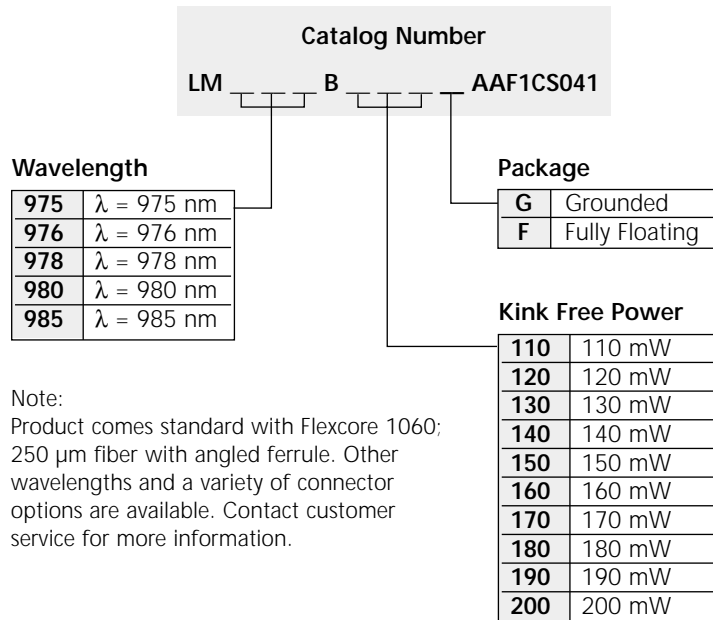
| | |
|--------------------|-------|
| Current: | 1.5 A |
| Voltage: | 3.5 V |
| Power Consumption: | 4.8 W |

THERMISTOR

| | |
|--|---|
| Current: | 2 mA |
| Voltage: | 5 V |
| Resistance ($L_{(Kink)}$) 25°C Submount: | 9.5 k Ω to 10.2 k Ω , 10 k Ω typical |

Notes:

- 1) Kink power is defined as the power corresponding to a current where the kink signal is greater than 0.20 mW. Kink signal is defined as the difference between the binomial coefficient weighted global and local average of a LI curve measured from the fiber.
- 2) All figures are based on start of life (S.O.L.) unless otherwise stated.
- 3) Temperature of submount 25°C, temperature of case 70°C unless otherwise stated.
- 4) $L_{(Kink)}$ – Kink free rated power of laser module.



Note:

Product comes standard with Flexcore 1060; 250 μ m fiber with angled ferrule. Other wavelengths and a variety of connector options are available. Contact customer service for more information.



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