Preliminary DATA SHEET

5 GHZ 1310NM PIN DIODE PIGTAILED PACKAGE

PIN-1310-5I-XXX

FEATURES:

- High performance InGaAs PIN photodiode
- Wide operating temperature (-40°C to 85°C)
- 1260-1600 wavelength response
- Pigtailed package
- Data rates up to 6GHz analog bandwidth

APPLICATION

- CATV analog receiver, satelite distribution networks, analog video

Finisar
Advanced Optical Components Division

The PIN-1310-5I-XXX is a high-performance InGaAs PIN photo-detector packaged to meet performance requirements of analog fiber applications.

The TO-46 component can is mounted inside an ultem coaxial package which is then pigtailed with a singlemode fiber and terminated with a fiber connector. The pigtail comes in a choice of 50cm or 100cm lengths as standard, terminated with either FC or SC connectors with an APC or UPC polish.

Applications include CATV and other analog network applications.

Part Number	Description
PIN-1310-5I-50SMF-FCUPC	1310 nm PIN Diode, 50cm singlemode pigtailed package, FC UPC connector.
PIN-1310-5I-50SMF-FCAPC	1310 nm PIN Diode, 50cm singlemode pigtailed package, FC APC connector.
PIN-1310-5I-50SMF-SCUPC	1310 nm PIN Diode, 50cm singlemode pigtailed package, SC UPC connector.
PIN-1310-5I-50SMF-SCAPC	1310 nm PIN Diode, 50cm singlemode pigtailed package, SC APC connector.
PIN-1310-5I-100SMF-FCUPC	1310 nm PIN Diode, 100cm singlemode pigtailed package, FC UPC connector.
PIN-1310-5I-100SMF-FCAPC	1310 nm PIN Diode, 100cm singlemode pigtailed package, FC APC connector.
PIN-1310-5I-100SMF-SCUPC	1310 nm PIN Diode, 100cm singlemode pigtailed package, SC UPC connector.
PIN-1310-5I-100SMF-SCAPC	1310 nm PIN Diode, 100cm singlemode pigtailed package, SC APC connector.

Other fiber lengths and connector options avaialble on request.

ABSOLUTE MAXIMUM RATINGS

Parameter	Rating
Storage temperature	-40°C to +85°C
Case operating temperature	-40° to +85°C
Lead solder temperature	260°C, 10 seconds
PIN Reverse Voltage	10V
PIN Forward Current	2mA
Incident Optical Power	+6 dBm average, +10 dBm peak
ESD exposure level (human body model)	50V

NOTICE: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

NOTICE: The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.

ELECTRICAL-OPTICAL CHARACTERISTICS

T_A = 25°C unless otherwise stated

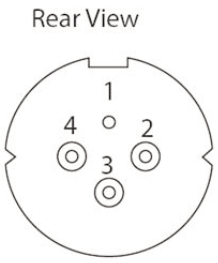
VCSEL Parameters	Test Condition	Symbol	Min.	Typ.	Max.	Units	Notes
Responsivity	λ1310nm, Vr=5v	R	0.80	0.85		mA/mW	1
Capacitance	F=100KHz	C	0.2	0.35	0.45	pF	2
Wavelength Response		λ_{RESP}	1260	1310	1600	nm	3
Dark Current	V_R = 5V	I_{DARK}			5	nA	
PIN -3dB Bandwidth	Into 50Ω, -5V bias	BW	6	7		GHz	4
Rise/Fall Time	P=0.1mW p-p	T_R / T_F		50	100	ps	5
Maximum Fiber Input Power	λ=1310nm	P_{MAX}	3			mW	
Optical Return Loss		ORL	23			dB	

NOTES

1. Responsivity is for the entire pigtailed assembly, measured at 1310nm.
2. Capacitance is measured at 5V reverse bias. The PIN structure is fully depleted at less than 2V reverse bias.
3. Photodiode may respond to wavelengths outside this range, but is not guaranteed to do so.
4. Bandwidth is measured using small signal analysis.
5. The rise and fall times are measured using a laser source with transition times less than 30ps (20-80%), and an average power of 0.5mW.

PIN HEADER PINOUT

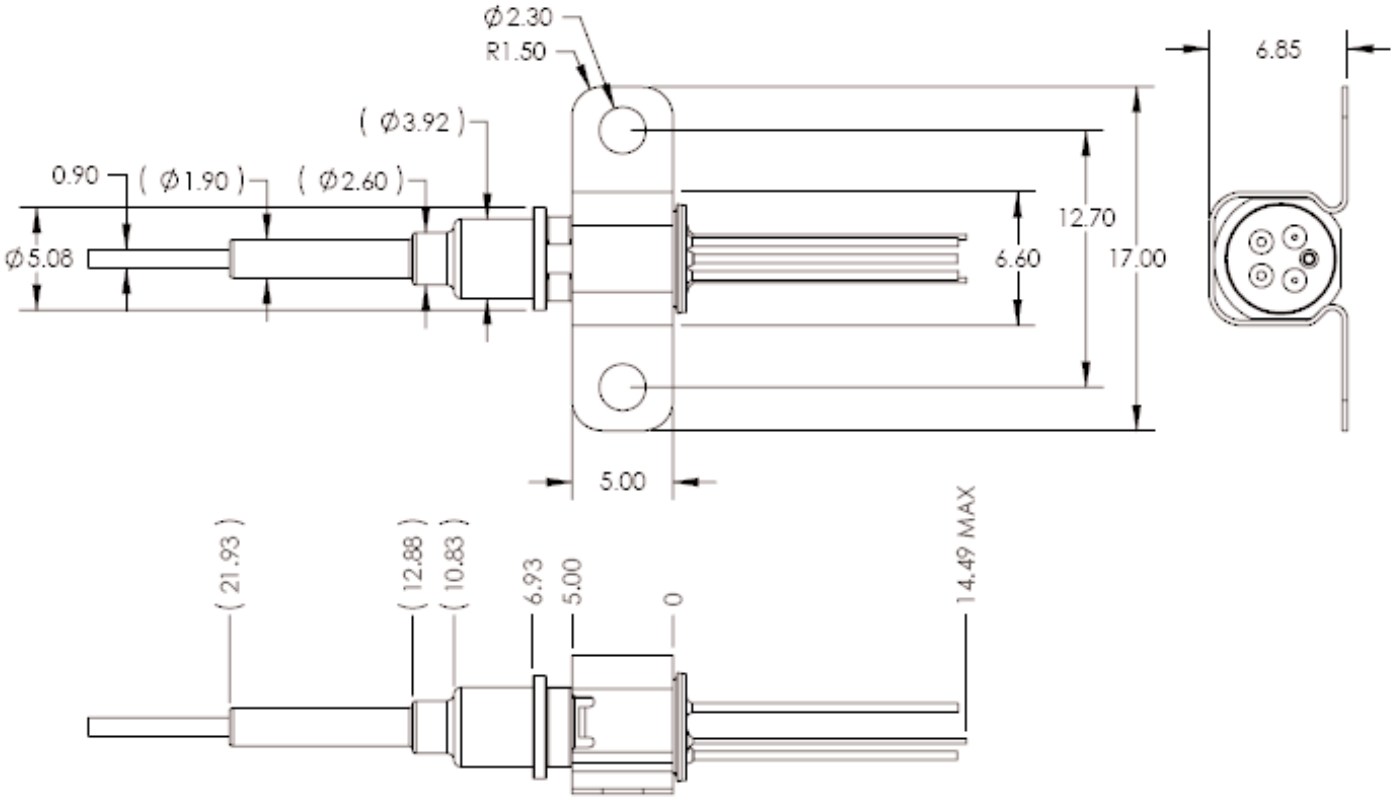
Number	Function
1	Ground / PIN Cathode
2	PIN Anode
3	Open
4	Open



Note this drawing is for pin refernce only.
The features shown are not present on the
TO46 PIN diode header.

MOUNTING DIMENSIONS

(for reference only): Dimensions in millimeters



ADVANCED OPTICAL COMPONENTS

Finisar's ADVANCED OPTICAL COMPONENTS division was formed through strategic acquisition of key optical component suppliers. The company has led the industry in high volume Vertical Cavity Surface Emitting Laser (VCSEL) and associated detector technology since 1996. VCSELs have become the primary laser source for optical data communication, and are rapidly expanding into a wide variety of sensor applications. VCSELs' superior reliability, low drive current, high coupled power, narrow and circularly symmetric beam and versatile packaging options (including arrays) are enabling solutions not possible with other optical technologies. ADVANCED OPTICAL COMPONENTS is also a key supplier of Fabrey-Perot (FP) and Distributed Feedback (DFB) Lasers, and Optical Isolators (OI) for use in single mode fiber data and telecommunications networks

LOCATION

- Allen, TX - Business unit headquarters, VCSEL wafer growth, wafer fabrication and TO package assembly.
- Fremont, CA – Wafer growth and fabrication of 1310 to 1550nm FP and DFB lasers.
- Shanghai, PRC – Optical passives assembly, including optical isolators and splitters.

SALES AND SERVICE

Finisar's ADVANCED OPTICAL COMPONENTS division serves its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact a nearby sales office or call the number listed below.

AOC CAPABILITIES

ADVANCED OPTICAL COMPONENTS' advanced capabilities include:

- 1, 2, 4, 8, and 10Gbps serial VCSEL solutions
- 1, 2, 4, 8, and 10Gbps serial SW DETECTOR solutions
- VCSEL and detector arrays
- 1, 2, 4, 8, and 10Gbps FP and DFB solutions at 1310 and 1550nm
- 1, 2, 4, 8, and 10Gbps serial LW DETECTOR solutions
- Optical Isolators from 1260 to 1600nm range
- Laser packaging in TO46, TO56, and Optical subassemblies with SC, LC, and MU interfaces for communication networks
- VCSELs operating at 670nm, 780nm, 980nm, and 1310nm in development
- Sensor packages include surface mount, various plastics, chip on board, chipscale packages, etc.
- Custom packaging options

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