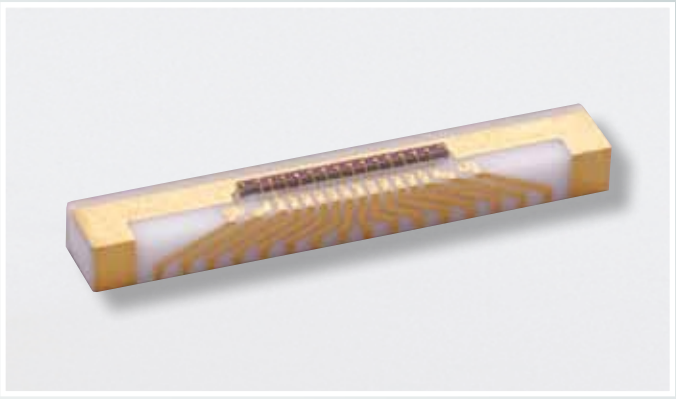
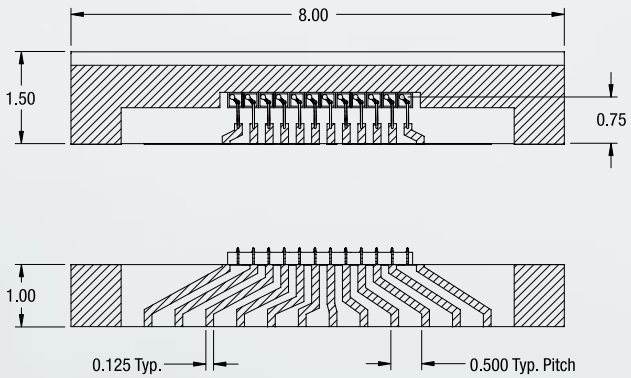
The **FCI-GaAs-XXM** is a 4 or 12 element GaAs PIN photodetector array designed for high speed fiber receiver and monitoring applications. The 70µm diameter elements are capable of 2.5Gbps data rates. AR coated and sensitive to telecommunication wavelengths, this array is a perfect receiver for SM or MM fiber ribbon with a 250µm pitch. The FCI-GaAs-XXM comes standard on a wraparound ceramic submount. Board level contacts have a 0.5mm pitch.

If you need a custom array or require special testing for your OSI Optoelectronics part, please contact our Applications department.



FCI-GaAs-12M



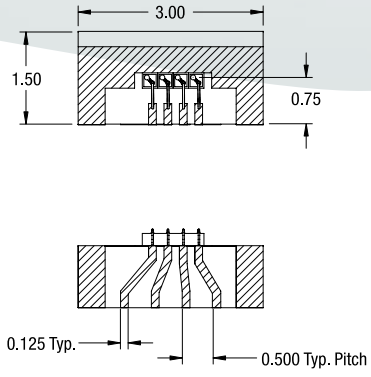
APPLICATIONS

- Fiber Optic Receiver
- DWDM Monitor
- SM or MM Fiber Ribbon
- Parallel Interconnects

FEATURES

- High Speed
- High Responsivity
- AR Coated Elements
- Wraparound Ceramic Submount
- Spectral Range 650nm to 860nm

FCI-GaAs-4M



Notes:

- All units in millimeters.
- All devices are mounted with low out gassing conductive epoxy withtolerance of ±25µm.

Electro-Optical Characteristics		T_A=23°C, V_R=5V
PARAMETERS	**FCI-GaAs-4M**	**FCI-GaAs-12M**
Active Area Diameter	70µm, Pitch:250µm	
Responsivity	Typ. 0.63A/W @850nm	
Capacitance	Typ. 0.65pF	
Dark Current	Typ. 0.03nA	
Max. Reverse Voltage	20V	
Max. Forward Current	5mA	
Bandwidth	Typ. 2.0GHz @ 850nm	
Breakdown Voltage	Typ. 50V	
Storage Temperature Range	From –40 to 85°C	
Operating Temperature Range	From 0 to 70°C	

1.25Gbps / 2.50Gbps Hybrids

GaAs Photodetectors / Transimpedance Amplifiers

FCI-H125/250G-GaAs-100 series with active area sizes of 100µm is a compact integration of our high speed GaAs photodetector with a wide dynamic range transimpedance amplifier. Combining the detector with the TIA in a hermetically sealed 4 pin TO-46 or TO-52 package provides ideal conditions for high speed signal amplification. Low capacitance, low dark current and high responsivity from 650nm to 860nm make these devices ideal for high-bit rate receivers used in LAN, MAN, and other high speed communication systems. TO packages come standard with a lensed cap to enhance coupling efficiency, or with a broadband double sided AR coated flat window. The FCI-H125/250G-GaAs-100 series is also offered with FC, SC, ST and SMA receptacles.

APPLICATIONS

- High Speed Optical Communications
- Gigabit Ethernet
- Fibre Channel
- ATM
- SONET OC-48 / SDH STM-16

FEATURES

- GaAs photodetector / Low Noise Transimpedance Amplifier
- High Bandwidth / Wide Dynamic Range
- Hermetically Sealed TO-46 Can
- Single +3.3V to +5V Power Supply
- Spectral Range 650nm to 850nm
- Differential Output

Absolute Maximum Ratings

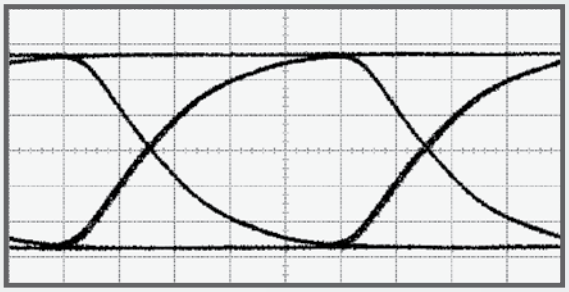
PARAMETERS	SYMBOL	MIN	MAX	UNITS
Storage Temperature	T_{stg}	-40	+125	°C
Operating Temperature	T_{op}	0	+75	°C
Supply Voltage	V_{cc}	0	+6	V
Input Optical Power	P_{IN}	---	+5	dBm

Electro-Optical Characteristics T_A=23°C, Vcc=+3.3V, 850nm, 100Ω Differential AC Load

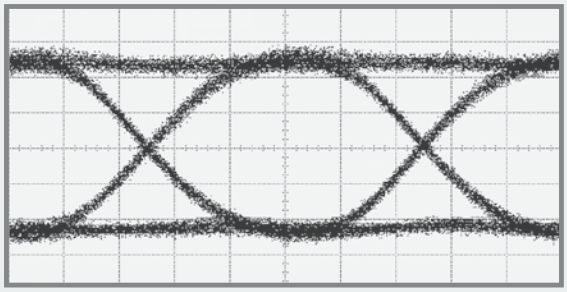
PARAMETERS	SYMBOL	CONDITIONS	FCI-H125G-GaAs-100			FCI-H250G-GaAs-100			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
Supply Voltage	V_{CC}	---	+3	---	+5.5	+3	----	+5.5	V
Supply Current	I_{CC}	*T_A = 0 to 70°C	---	26	*55	---	35	*65	mA
Active Area Diameter	AA_ϕ	---	---	100	---	---	100	---	µm
Operating Wavelength	λ	---	650	---	860	650	---	860	nm
Responsivity	R_λ	-17dBm, Differential	1000	1700	---	1000	1650	---	V/W
Transimpedance	---	-17dBm, Differential	---	2800	---	---	2800	---	Ω
Sensitivity	S	BER 10^{-10}, $PRBS2^7$-1	-22	-26	---	-19	-22	---	dBm
Optical Overload	---	---	0	---	---	0	---	---	dBm
Bandwidth	BW	-3dB, Small Signal	---	900	---	---	1700	---	MHz
Low Frequency Cutoff	---	-3dB	---	45	---	---	30	---	kHz
Differential Output Voltage	$V_{OUT, P-P}$	-3dBm	180	250	420	200	400	600	mV_{P-P}
Output Impedance	---	---	47	50	53	47	50	53	Ω
Transimpedance Linear Range	---	<5%	50	---	---	65	---	---	$µW_{P-P}$

Use AC coupling and differential 100Ω load for the best high-speed performance. Devices are not intended to drive DC coupled, 50Ω grounded load.

FCI-H125G-GaAs-100

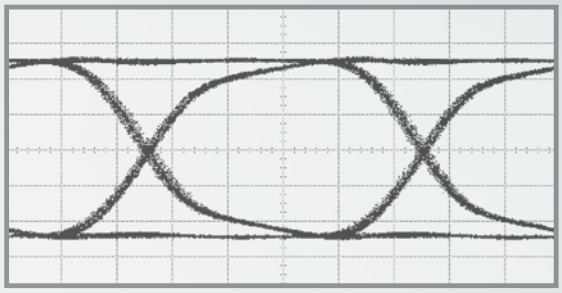


50mV / div, 160ps / div, -6dBm, 850nm, PRBS2^7-1, Diff.

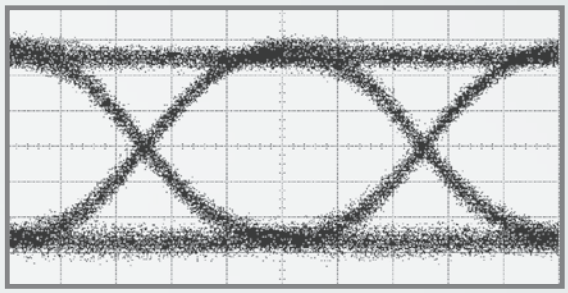


10mV / div, 160ps / div, -17dBm, 850nm, PRBS2^7-1, Diff.

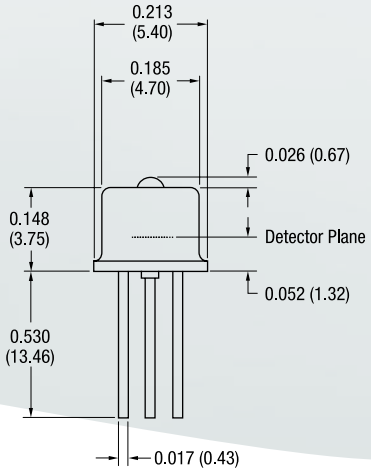
FCI-H250G-GaAs-100

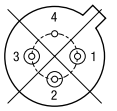


80mV / div, 80ps / div, -6dBm, 850nm, PRBS2^7-1, Diff.



10mV / div, 80ps / div, -17dBm, 850nm, PRBS2^7-1, Diff.



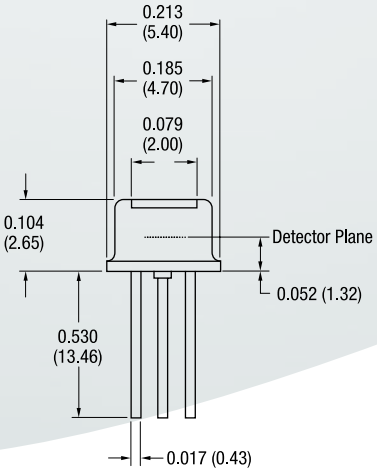


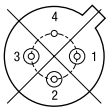
Bottom View

PINOUT

1	D_{out}
2	V_{CC}
3	$\overline{D_{out}}$
4	GND

Pin Circle Diameter = 0.100 (2.54)



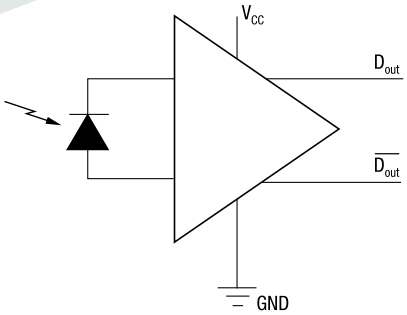


Bottom View

PINOUT

1	D_{out}
2	V_{CC}
3	$\overline{D_{out}}$
4	GND

Pin Circle Diameter = 0.100 (2.54)



Notes:
- All units in inches (mm).
- All tolerances: 0.005 (0.125).
- Please specify when ordering the flat window or lens cap devices.
- The flat window devices have a double sided AR coated window at 850nm.

SphereOptics
Phone +49 (0) 8152 983 789-0
Fax +49 (0) 8152 983 789-1
E-Mail info@sphereoptics.de
www.sphereoptics.de