

16Gbps 1310nm /1550nm InGaAs PIN PD

P/N: DO190_32um_B1



Known Good Die

DATASHEET



Introduction

This high performance product is a top-side illuminated InGaAs PIN photodiode chip that features very low capacitance, high responsivity, extremely low dark current and excellent reliability. This product has a 32 μ m detection window, and is intended primarily to be integrated with a pre-amplifier in a hermetic TO package, for <16Gbps optical receivers operating at 1310nm or 1550nm with 9/125 μ m single mode fiber.

Key Features

- Mesa structure with GCS proprietary epi design and process technologies
- 32 μ m optical detection window
- High bandwidth up to 12.5GHz
- Top-sided 50 Ω coplanar GSG contact pads with SI substrate
- Excellent low dark current and capacitance
- -40C to 85C operation range
- Low cost 4" wafer manufacturing with fast cycle-time
- Deliverable in GCS Known Good Die™ with 100% testing and inspection
- Customized layout dimensions available
- RoHS compliant

Applications

- IEEE 10GBASE-LR/ER
- 10G Ethernet
- 8G Fiber Channel
- SONET OC-192 SR1/IR2
- WDM, ATM

SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
Bandwidth	-2 V		12.5	-	GHz	
Wavelength range		910	1310/1550	1650	nm	
Capacitance	-5 V, 1 MHz		0.125	0.15	pF	
Responsivity	@1310 nm	0.8	0.9	-	A/W	
Dark current	-5V	-	0.3	3	nA	

ABSOLUTE MAXIMUM RATING

Parameter	Rating
Operating Temperature	-40C to 85C
Storage Temperature	-40C to 125C
Soldering Temperature	260C / 10 sec

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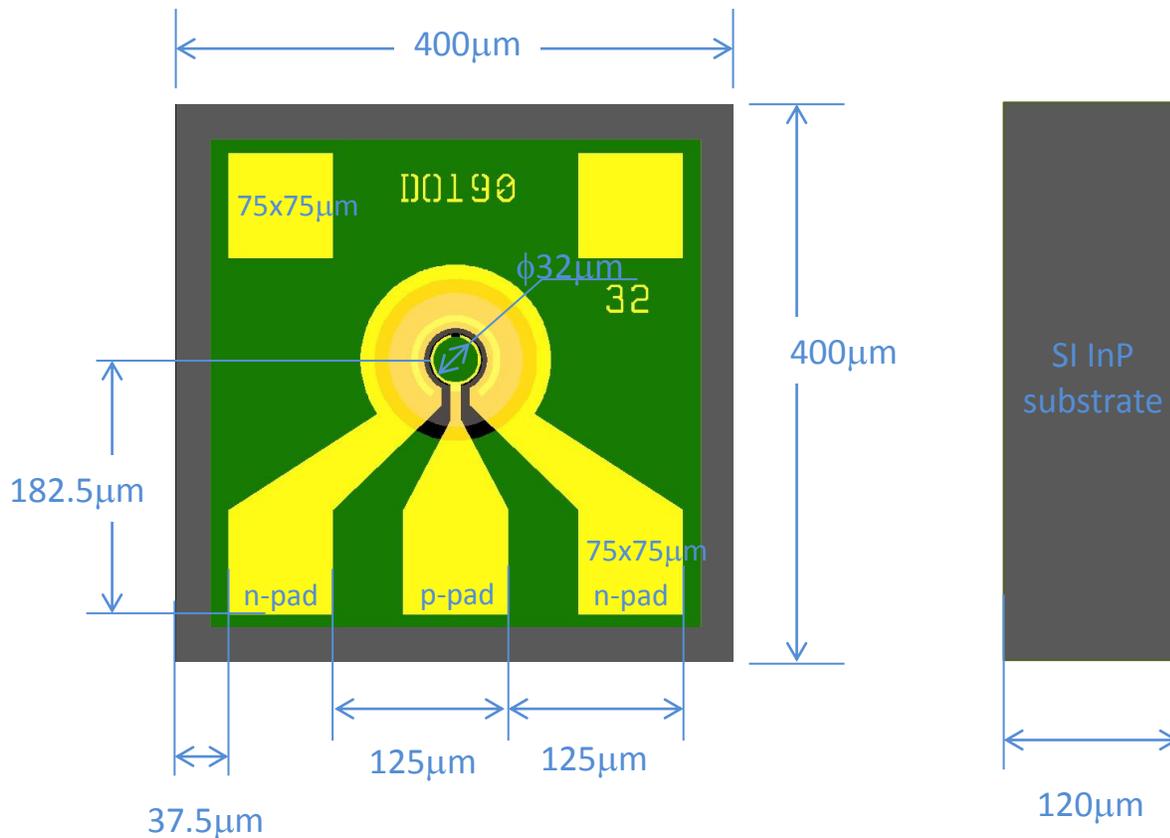
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DIMENSIONS

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window			32		μm	
Bonding pad size			75x75		μm	for both p- and n- pads
Metal height of bond pad		1.4	1.6	-	μm	Au metal
Die height		110	120	130	μm	
Die width		390	400	410	μm	
Die length		390	400	410	μm	



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Attention: InP brittle material and electrostatic sensitive device, observe precaution for handling.

About GCS:

GCS has a long history manufacturing and shipping both GaAs and InGaAs based photo diodes since 2000. Our state of art manufacturing facility is located in Torrance, California, and has about 10,000 square feet of fab space with a capability of about 1200 4-inch wafers per month and expandable to 2000 wafers per month. GCS as a world-class semiconductor device manufacturer has been delivering a total of over 30 million photo diodes with various data rates and applications used for optical communications, which have been deployed in field by top tier optical transceiver companies worldwide. ■

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