

# 14 Gbps GaAs PIN Photodiode

P/N: DO317\_50um\_G14



Known Good Die

## DATASHEET



### Introduction

This high performance product is a front side illuminated GaAs PIN photodiode chip that features low capacitance, high responsivity, low dark current, and with proven excellent reliability in field. This product has a large 50 $\mu$ m detection window, and is primarily designed to be integrated in an optical receiver to meet the performance of 10-14 Gbps short-range optical data communication applications operating at 850nm with a 50/125 $\mu$ m or 62.5/125 $\mu$ m multimode fiber.

### Key Features

- Mesa structure with 50 $\mu$ m optical detection window
- Top-sided 50 $\Omega$  coplanar GSG contact pads with SI substrate
- Excellent low capacitance and extreme low dark current
- -40C to 85C operation range
- Highly robust 4" GaAs IC wafer fab with fast cycle-time
- Deliverable in GCS Known Good Die™ with 100% testing and inspection
- RoHS compliant

### Applications

- 14Gbps InfiniBand.
- 10GBASE-SR Ethernet
- 8Gbps Fiber Channel

### SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
Bandwidth	-2V	-	11	-	GHz	
Wavelength range		760	850	860	nm	
Capacitance	-2 V	-	0.130		pF	
Responsivity	@850 nm	0.5	0.6	-	A/W	
Dark current	-3V	-	<0.1	0.3	nA	
Reverse Breakdown	-20V	-	-	1	$\mu$ A	

### ABSOLUTE MAXIMUM RATING

Parameter	Rating
Operating Temperature	-40C to 85C
Storage Temperature	-55C to 125C
Forward Current	10mA

### Global Communication Semiconductors, LLC

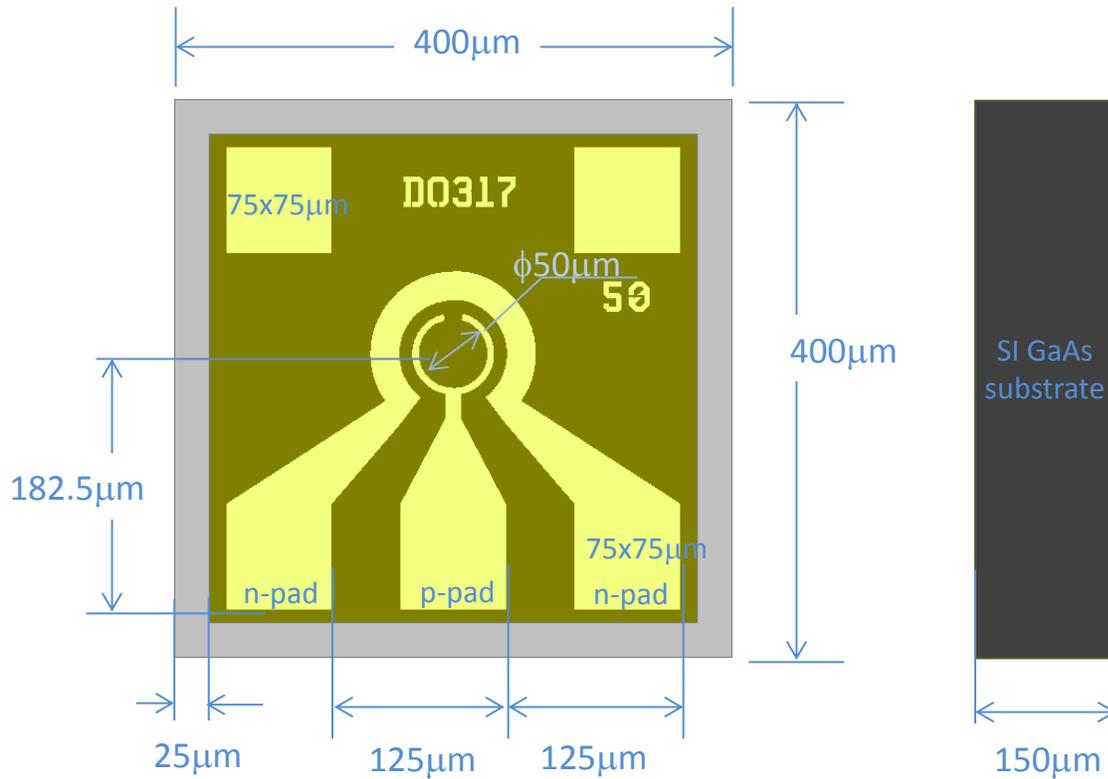
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**DIMENSIONS**

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window		-	50	-	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		140	150	160	μm	
Die width		390	400	410	μm	
Die length		390	400	410	μm	



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

**About GCS:**

GCS is a world-class semiconductor manufacturer specializing in advanced photodiode technologies. We provide advanced GaAs and InGaAs photodiodes of varying data rate and application to multiple top tier optical transceiver customers throughout the world. With over 15 years' experience and over 150 million units delivered, our state of the art manufacturing facility has the capacity to produce 2,000 (100mm) wafers per month.

**Global Communication Semiconductors, LLC**

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