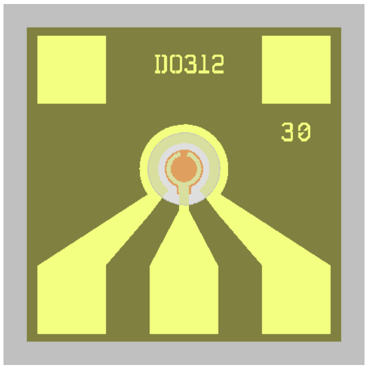
25 Gbps GaAs PIN Photodiode

P/N: Do312_30um_Q7 (Preliminary Part Number)

PRELIMINARY DATASHEET



Introduction

This high performance product is a front side illuminated GaAs PIN photodiode chip that features low capacitance, high respsonsivity, low dark current, and with proven excellent reliability in field. This product has a 30μm detection window; with the integrated lens, the effective aperture size is increased to 40um. It is primarily designed to meet the performance of 20-25 Gbps short-range optical data communication applications operating at 850nm.

Key Features

- 40um effective aperture size with the integrated lens.
- Top-sided 50Ω 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

- 25Gbps AOC (Active Optical Cable) receiver at 850nm
- 25G SFP+

SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
Bandwidth	-3V	-	21	-	GHz	With 500pH external inductance
Wavelength range		760	850	860	nm	
Capacitance	-3 V	-	0.13	0.15	pF	
Responsivity	@850 nm	0.5		0.6	A/W	
Dark current	-3V	-	<0.1	0.3	nA	
Reverse Breakdown	-20V	-	-	1	μA	

ABSOLUTE MAXIMUM RATING

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

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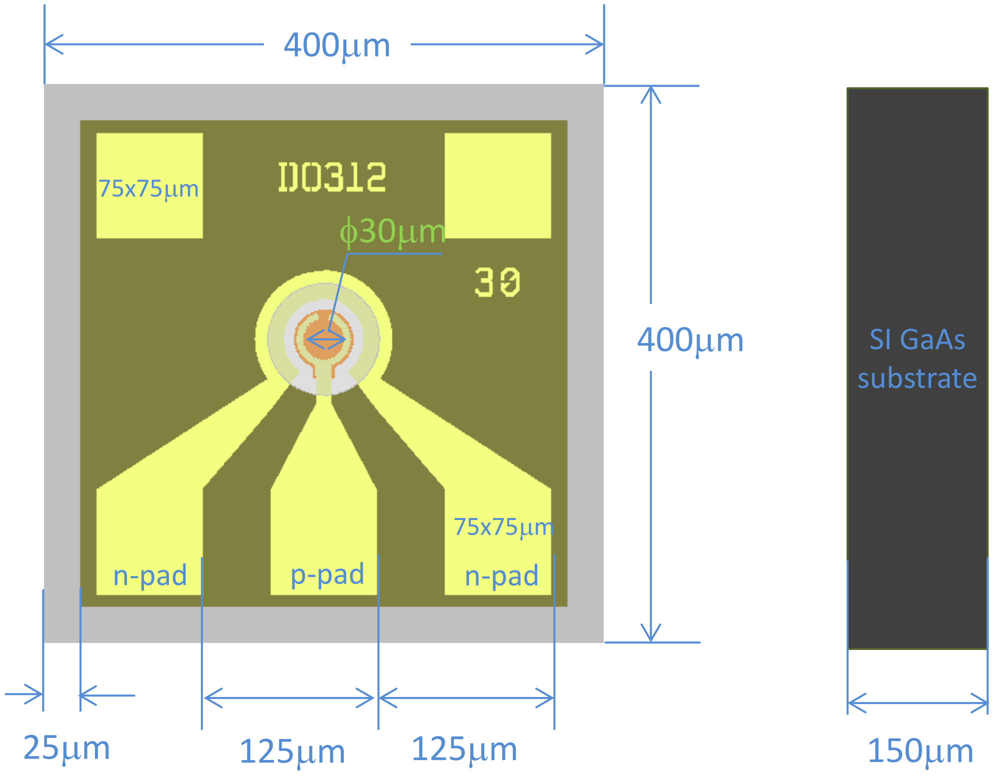
DIMENSIONS

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window		-	30	-	µm	40um effective window with the integrated lens
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 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 date rates and applications used for optical communications, which have been deployed in field by top tier optical transceiver companies worldwide.