

# 10Gbps GaAs PIN Photodiode

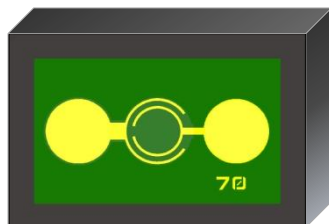
P/N: DO91\_70um\_G10



Known Good Die

## DATASHEET

### Introduction



This GCS legacy product is a front side illuminated GaAs PIN photodiode chip that features low capacitance, high responsivity, and extremely low dark current with proven excellent reliability in field. This product has a large 70 $\mu$ m detection window, and is primarily designed to be integrated with a pre-amplifier in a TO package, to meet the performance requirements for 10Gbps short range optical data communication operating at 850nm with a 62.5/125 $\mu$ m or 50/125  $\mu$ m multi-mode fiber.

### Key Features

- Mesa structure with 70 $\mu$ m optical detection window
- Front-sided dumbbell contact pads for versatile wire bonding
- Excellent low dark current and capacitance
- -40C to 85C operation range
- Suitable for non-hermetic package
- 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

- 10Gbps short range data communication at 850nm
- 10GBASE-SR Ethernet
- 8Gbps Fiber Channel

### SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
Bandwidth	-3V	-	10	-	GHz	
Wavelength range		760	850	860	nm	
Capacitance	-3 V	-	0.19	0.21	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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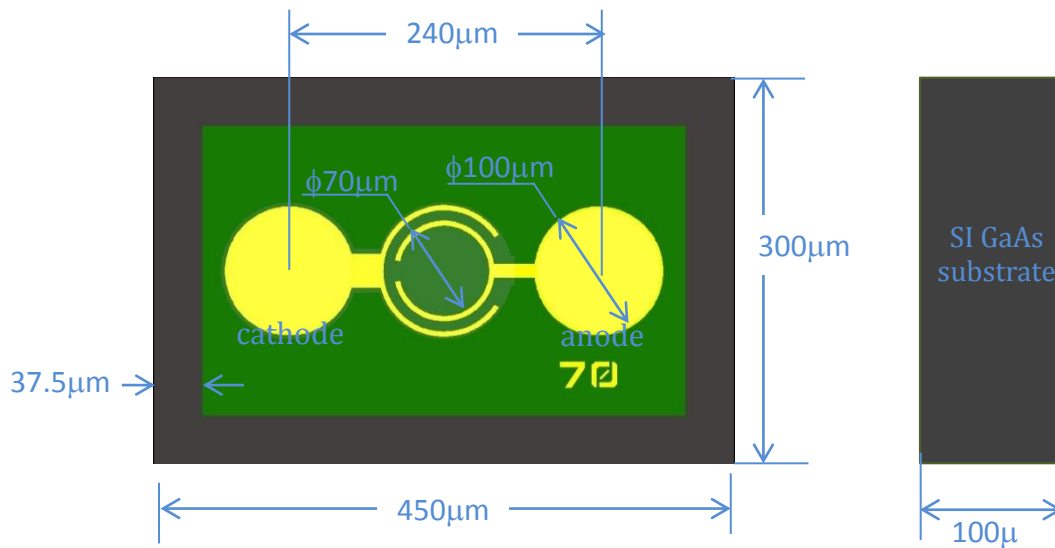
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## DIMENSIONS

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window		-	70	-	$\mu\text{m}$	
Bonding pad size		-	100	-	$\mu\text{m}$	for both p- and n- pads
Die height		90	100	110	$\mu\text{m}$	
Die width		290	300	310	$\mu\text{m}$	
Die length		440	450	460	$\mu\text{m}$	



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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. ■

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