



# 5Gbps GaAs PIN Photodiode

P/N: DO210\_70um\_G5



Known Good Die

## DATASHEET

### Introduction



This high performance product is a front side illuminated GaAs PIN photodiode chip that features low capacitance, high responsivity, and extreme low dark current with proven excellent reliability in field. This product has a large 70µm detection window, and is primarily designed to meet the performance requirements for 5Gbps short range optical data communication, with its chip dimensions specially tailored to meet the packaging requirement for dual 5Gbps channels Active Optical Cable (AOC) receiver operating at 850nm with multi-mode fibers.

### Key Features

- Mesa structure with 70µm 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

- 5Gbps (and below) AOC (Active Optical Cable) receiver at 850nm

### SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
<b>Bandwidth</b>	-3V	-	5	-	GHz	
<b>Center wavelength</b>		840	850	860	nm	
<b>Capacitance</b>	-3 V	-	0.19	0.21	pF	
<b>Responsivity</b>	@850 nm	0.5	0.6	-	A/W	
<b>Dark current</b>	-3V	-	<0.1	0.5	nA	
<b>Reverse Breakdown</b>	-20V	-	-	1	µA	

### ABSOLUTE MAXIMUM RATING

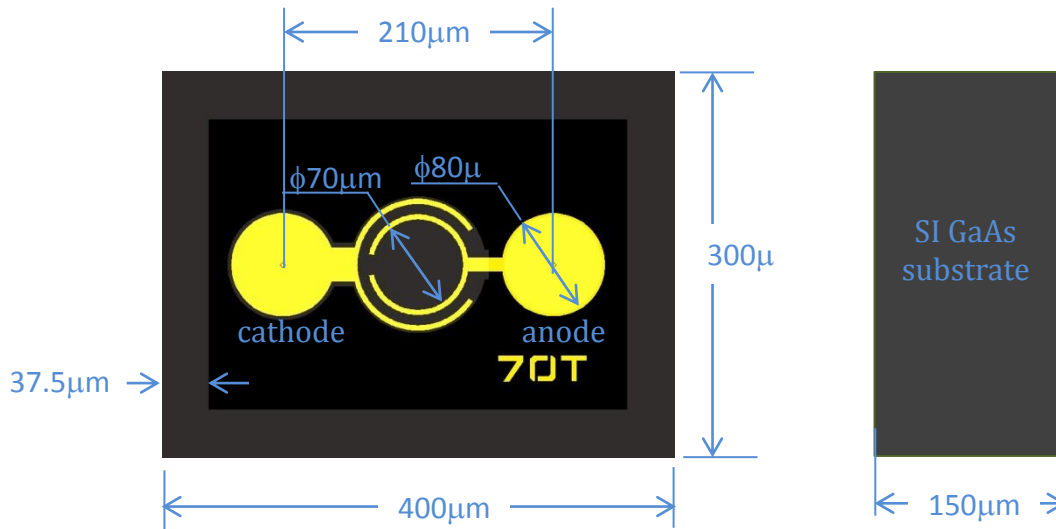
Parameter	Rating
<b>Operating Temperature</b>	-40C to 85C
<b>Storage Temperature</b>	-55C to 125C
<b>Forward Current</b>	10mA

### Global Communication Semiconductors, LLC

23155 Kashiwa Court, Torrance, CA 90505  
 Tel: (310) 530-7274 Fax: (310) 517-8200 e-mail: info@gcsincorp.com  
[www.gcsincorp.com](http://www.gcsincorp.com)

**DIMENSIONS**

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window		-	70	-	μm	
Bonding pad size		-	80	-	μm	for both p- and n- pads
Die height		140	150	160	μm	
Die width		290	300	310	μm	
Die length		390	400	410	μm	



**P/N: DO210\_70um\_G5**

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. ■

**Global Communication Semiconductors, LLC**

23155 Kashiwa Court, Torrance, CA 90505  
 Tel: (310) 530-7274 Fax: (310) 517-8200 e-mail: info@gcsincorp.com  
[www.gcsincorp.com](http://www.gcsincorp.com)