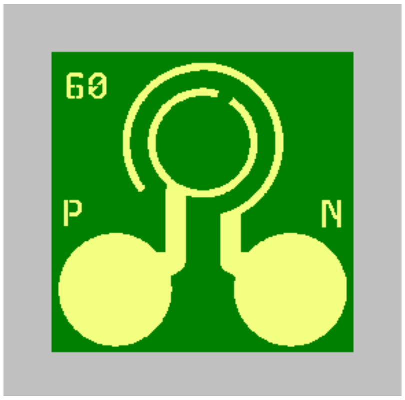
10Gbps GaAs PIN Photodiode & Array

P/N: DO277_60um_G10 (_1x4, _1x8, _1x12 for arrays)

Known Good Die

DATASHEET



Introduction

These high performance products are front side illuminated GaAs PIN photodiode arrays that feature low capacitance, high respsonsivity, and extreme low dark current with proven excellent reliability in field. These products have large 60µm detection window, and are primary designed to meet the performance requirements for 10Gbps short range optical data communication, with its chip dimensions specially tailored to meet the packaging requirement for 10Gbps channels Active Optical Cable (AOC) receiver operating at 850nm with multi-mode fibers. 1x4, 1x8 and 1x12 array are all provided.

Key Features

- Mesa structure with 60µm optical detection window
- Excellent low dark current and capacitance
- -40C to 85C operation range
- Suitable for non-hermetic package
- Customization for 1x4, 1x8 and 1x12 array configuration
- Different pad sequence available.
- Highly robust 4” GaAs IC wafer fab with fast cycle-time
- Deliverable with 100% testing and inspection
- RoHS compliant

Applications

- 10Gbps AOC (Active Optical Cable) receiver at 850nm
- 850nm 10G 1x4, 1x8, 1x12
- Infiniband
- SONET/SDH

SPECIFICATIONS (T=25C°)

	Conditions	Min.	Typical	Max.	Unit	Notes
Bandwidth	-3V	-	10	-	GHz	
Wavelength range		760	850	860	nm	
Capacitance	-3 V	-	0.20	0.21	pF	
Responsivity	@850 nm	0.5	0.6	-	A/W	
Dark current	-3V	-	<0.1	0.3	nA	
Reverse Breakdown	-20V	-	-	1	µA	

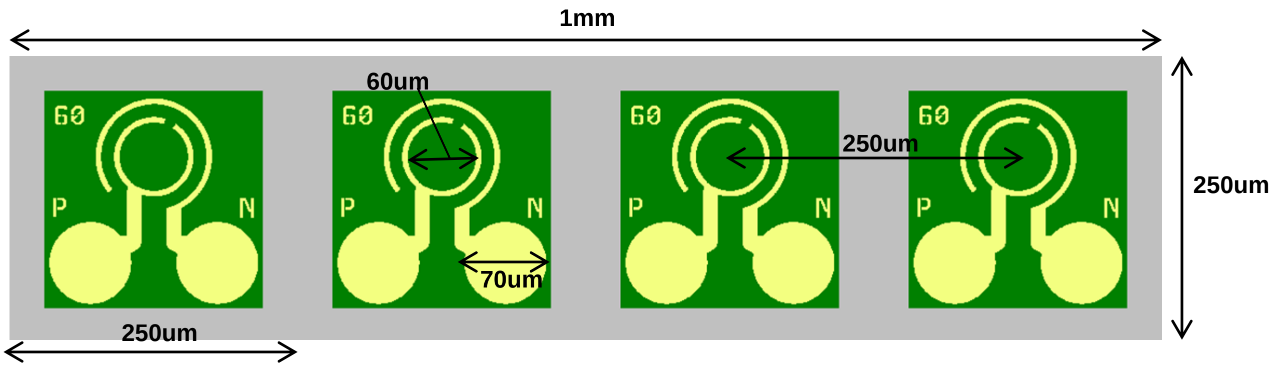
ABSOLUTE MAXIMUM RATING

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

DIMENSIONS

	Conditions	Min.	Typical	Max.	Unit	Notes
Detection window		-	60	-	µm	
Die pitch		-	250	-	um	
Bonding pad diameter		-	70	-	µm	for both p- and n- pads
Die height		140	150	160	µm	
Die width		240	250	260	µm	
Die length			250		um	For single PIN
			1		mm	For 1x4 Array
			3		mm	For 1x12 Array

BONDING PAD CONFIGURATION



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. ■