



# 10Gbps GaAs PIN Photodiode

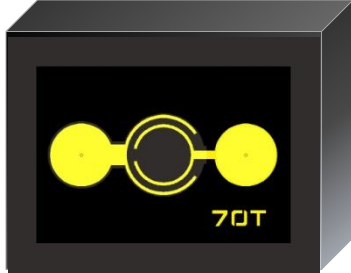
P/N: DO210\_70um\_G10



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 10Gbps short range optical data communication, with its chip dimensions specially tailored to meet the packaging requirement for dual 10Gbps 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

- 10Gbps AOC (Active Optical Cable) receiver at 850nm

### SPECIFICATIONS (T=25C°)

|                   | Conditions | Min. | Typical | Max. | Unit | Notes |
|-------------------|------------|------|---------|------|------|-------|
| Bandwidth         | -3V        | -    | 10      | -    | GHz  |       |
| Center wavelength |            | 840  | 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    | 0.5  | nA   |       |
| Reverse Breakdown | -20V       | -    | -       | 1    | µA   |       |

### ABSOLUTE MAXIMUM RATING

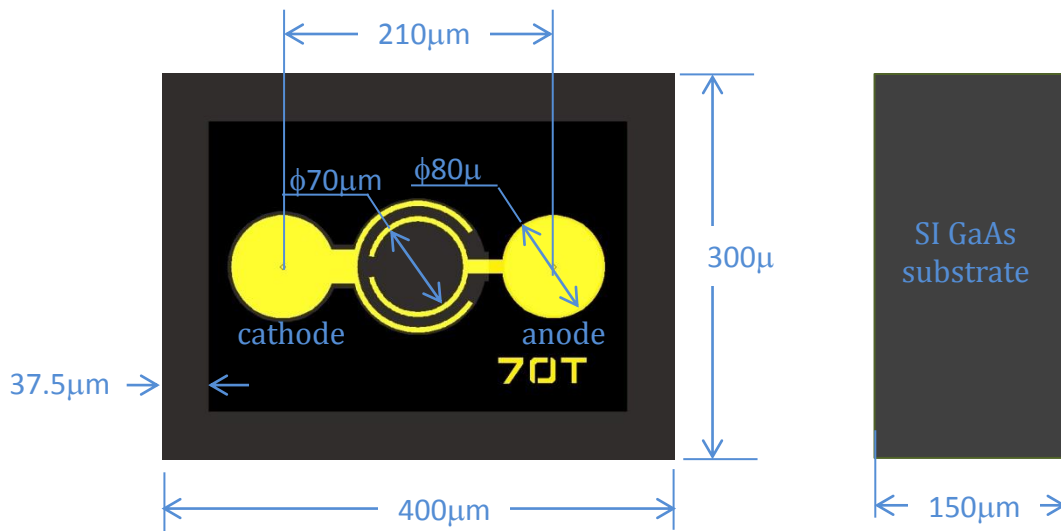
| Parameter             | Rating       |
|-----------------------|--------------|
| Operating Temperature | -40C to 85C  |
| Storage Temperature   | -55C to 125C |
| Forward Current       | 10mA         |

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**DIMENSIONS**

|                  | Conditions | Min. | Typical | Max. | Unit | Notes                   |
|------------------|------------|------|---------|------|------|-------------------------|
| Detection window |            | -    | 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   |                         |



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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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