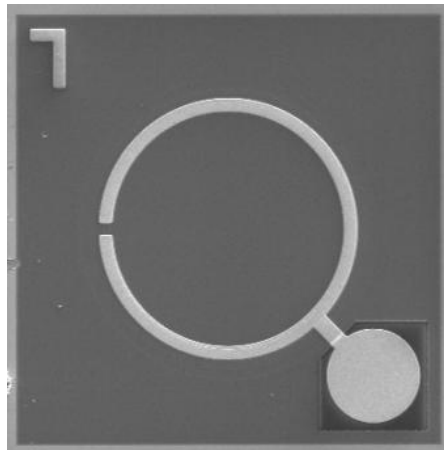


InGaAs APD200 Chip

SPECIFICATION



Contents

General Description	3
Absolute Maximum Ratings	3
Electro-Optical Characteristics	3
Structure	4
Other Requirements	4

General Description

200um InGaAs Avalanche Photodiode Chip is specially designed to have a low dark, low capacitance and high avalanche gain. Using this chip an optical receiver with a high sensitivity can be achieved

Features

- Operation at 1000~1650nm
- Low dark current
- Low capacitance
- High avalanche gain

Applications

- 1.25 / 2.5 / 3.125 Gbps optical receiver for long-distance optical communication.

Absolute Maximum Ratings (Tc=25°C)

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	VB	V
Reverse current	I_R	2	mA
Operating temperature range	T_{OPR}	-40 to +85	°C
Storage temperature range	T_{STG}	-40 to +85	°C

Table 1. Absolute Maximum Ratings

Electro-Optical Characteristics (Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Dark current	I_D	$V_R = 0.9 V_B$		1	10	nA
Capacitance	C_{PD}	$V_R = 0.9 V_B$			2.0	pF
Responsivity ¹⁾	R	$V_R = 0.98 V_B(1550nm)$		7		A/W
Breakdown voltage	V_B	$I_D = 10 \mu A, T=25^\circ C$	50		61	V
Temperature coefficient	γ	$\Delta V_B / \Delta T$		0.1		V/°C
Operating range ²⁾	λ	-	1.0	-	1.65	μm

1) The responsivity when M=1 is calculated as 0.9A/W, but there is no way to measure the voltage of unity gain.

2) The APD chip can be operated at the wavelength range between 1.0 and 1.65 μm with different responsivity.

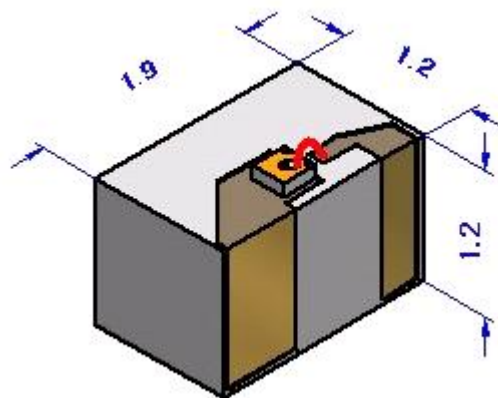
Table 2. Electro Characteristics

Structure

Dimension Parameter

Parameter	Symbol	Typ.	Unit
Light receiving area diameter	D	200	μm
Chip size	-	420×420	μm^2
Bonding pad diameter	-	100	μm
Chip thickness	t	125 ± 15	μm

Dimension



(unit: mm)

COB Packaging type

Other Requirements

Precautions for use

- 1) This device is susceptible to damage as a result of ESD(electrostatic discharge). Use of ground straps, anti static mats, and other standard ESD protective equipment is recommended when handling or testing an InGaAs PIN/APD or any other junction photodiode. Soldering temperature of the leads should not exceed 350°C for more than 3 seconds.
- 2) During the optical alignment before laser welding or epoxy bonding, the APD chip would respond to input optical signal under the condition of high applied voltage larger than 60% of VB. Thus, 80% of VB is recommended for optical alignment.
- 3) Any kinds of high input optical power can cause a serious damage to APD chip.

Ordering Information

