Integrated Compound Semiconductors Ltd

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ICS PIN25G1-20GSG

25Gbps 1260/1620nm Top Illuminated MESA InGaAs PIN Diode

PRODUCT DESCRIPTION:

The PIN25G1-20GSG is a top illuminated 20µm optical window diameter MESA InGaAs PIN diode chip with a GSG configuration with 100 µm pitch. The device is optimised for single mode communication fiber from 1260nm to 1620nm wavelength bands. This device features extremely low capacitance and low dark currents and a large bandwidth at low reverse bias for 25Gbps data rates.

The chip pad metallisation layout is optimized for easy wire-bonding to most common TIAs.

Electrical and Optical Characteristics (temperature = 25°C):

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Dark Current	I_D	V_{bias} = -2.5V	-	2	5	nA
Responsivity	R	λ = 1.31µm	0.7	0.75	-	A/W
		λ = 1.55µm	0.65	0.7	-	A/W
Forward Voltage	V_{FWD}	I = 1.0mA	-	0.6	0.8	V
Reverse Breakdown	V_{BR}	I_D = 1.0µA	-	-35	-45	V
Capacitance	C	V_{bias} = -2.5V	85	95	110	fF
3dB-Cut-Off Frequency	F_C	V_{bias} = -2.5V	-	16	-	GHz
ESD rating	V_{ESD}	HBM	500	-	-	V
Operating Temperature	T_{OP}	T_{room}= 25°C	-40	-	+85	°C

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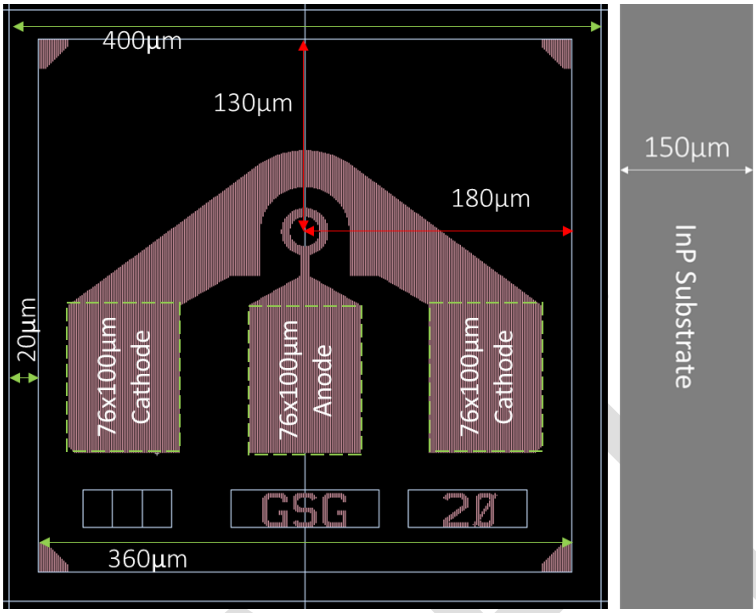
Chip layout:



20µm window device with Ground-Signal-Ground (GSG) layout

Device dimensions:

Parameter	Min.	Typ.	Max.	Unit
Optical window diameter	19	20	21	µm
Die Size	380x380	400x400	-	µm2
Pad Size (Anode)	74x98	76x100	78x102	µm2
Pad Size (Cathode)	74x98	76x100	78x102	µm2
Die width	380	400	-	µm
Die length	380	400	-	µm
Die thickness	140	150	160	µm

*Custom layout dimensions and die thickness are also available.

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