

ICS APD10G0-30GSG

10Gbps 1260/1620nm Top Illuminated MESA InGaAs-InAlAs Avalanche Photo Diode (APD)

Product Description:

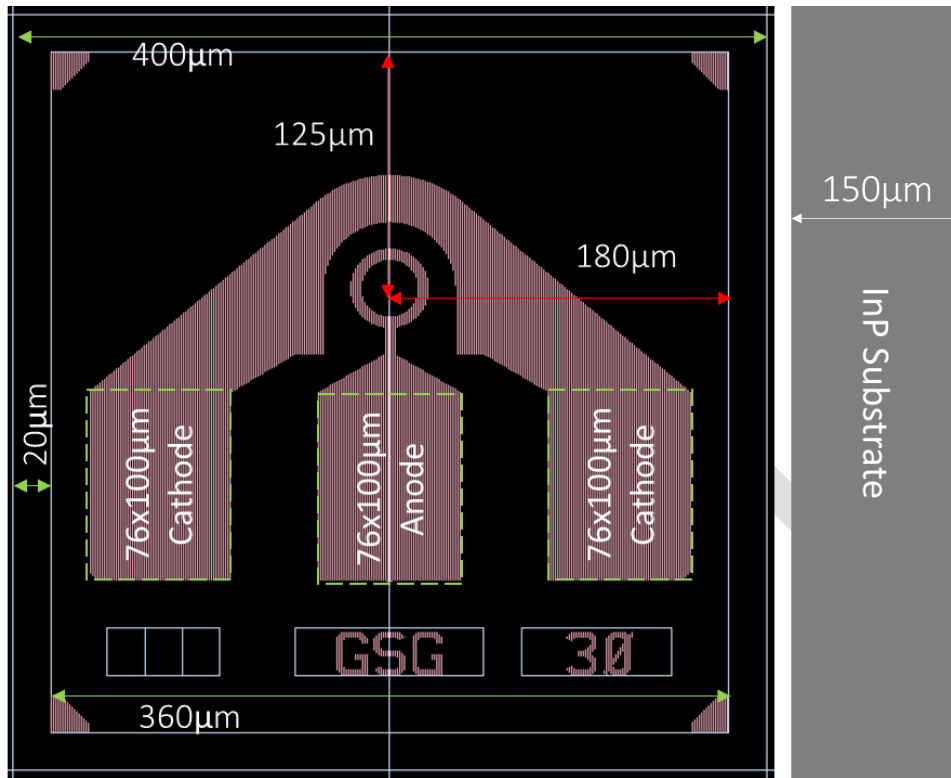
The APD10G0-30GSG is a top illuminated 30 μ m optical window diameter MESA InGaAs-InAlAs APD diode chip with a GSG configuration with 100 μ m pitch. The device is optimised for single mode communication fiber from 1260nm to 1620nm wavelength bands. This device features extremely low capacitance and low dark currents and a large bandwidth at low reverse bias for 10Gbps 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	$V_{BR} = 90\%$	-	15	30	nA
Reverse photocurrent	I_{max}	$V_{BR} = 90\%$	-	-	3	mA
Responsivity	R	@M=13 $\lambda = 1.55\mu\text{m}$	8	10	-	A/W
Forward Voltage	V_{FWD}	$I = 10\text{mA}$	-	1.1	1.2	V
Reverse Breakdown	V_{BR}	$I_D = 10\mu\text{A}$	26	30	35	V
Capacitance	C	$V_{BR} = 90\%$	-	120	140	fF
3dB-Cut-Off Frequency	F_C	$V_{BR} = 90\%$	6.2	6.5	-	GHz
ESD rating	V_{ESD}	HBM	500	-	-	V
Operating Temperature	T_{OP}	$T_{room} = 25^\circ\text{C}$	-40	-	+85	$^\circ\text{C}$

Chip layout:



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

Device dimensions:

Parameter	Min.	Typ.	Max.	Unit
Optical window diameter	29	30	31	μm
Die Size	380x380	400x400	-	μm ²
Pad Size (Anode)	74x98	76x100	78x102	μm ²
Pad Size (Cathode)	74x98	76x100	78x102	μm ²
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.