



2.5Gbps InGaAs APD with AGC Pre-Amplifier

APD-A13P5-2GC3



Description

The APD-A13P5-2GC3 is a 2.5Gbps InGaAs avalanche photodiode (APD) with an integrated AGC pre-amplifier. Housed in an industry-standard TO-46 package with a short cap lens and tab-less design, the device is optimized for long-wavelength optical communication. It is particularly well-suited for Gigabit-capable Passive Optical Networks (GPON) and other high-speed fiber optic applications requiring high sensitivity and reliability.

Features

- Industry standard TO-46 package with short cap lens and tab-less design
- Integrated AGC pre-amplifier for optimized performance
- Designed for long-wavelength 2.5Gbps applications
- Supports +3.3V single power supply
- High sensitivity for GPON and optical communication systems

Applications

- Gigabit-Capable Passive Optical Networks (GPON)
- High-speed fiber optic communication

Specifications

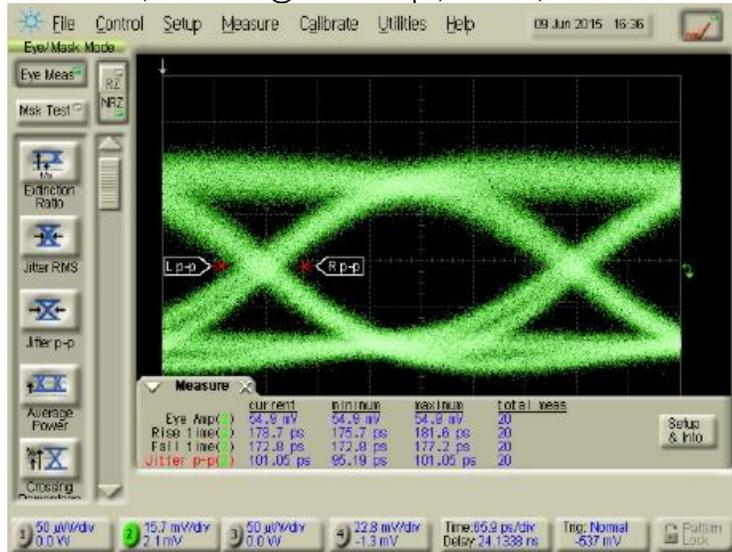
Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage temperature	-40	100	°C	
Operating temperature	-40	85	°C	
Lead solder temperature		260	°C	10 seconds

Electro-Optical Characteristics (Typical values are at + 3.3V@25°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Power supply	V _{CC}	3.0	3.3	3.6	V	
Supply current	I _{CC}	15	20	24	mA	No loads
APDTIA breakdown voltage	V _{BR}	34		55	V	I _d = 10uA, T _A =25°C
Operating voltage	V _{OP}		V _{BR} -3		V	V _{CC} =3.3V
V _{BR} temperature coefficient	γ	0.081	0.11	0.120	V/°C	T=-40 to 25°C
		0.060	0.08	0.099		T=25 to 85°C
Differential responsivity	R _d	30	50	80	mV/uW	λ=1490nm, R _{load} =100ohm, M=9, P=-30dBm, T _A =25°C
Single ended responsivity	R _s	15	25	40	mV/uW	λ=1490nm, R _{load} =50ohm, M=9, P=-30dBm, T _A =25°C
Small-signal bandwidth	BW	1.4			GHz	
Low frequency cut off	LF		30		kHz	
Saturation power	P _{sat}	-7			dBm	λ=1490nm, @2488.32Mbps
Single ended output impedance	R _O		50		ohm	
Wavelength	λ	1260		1620	nm	
Dynamic range		16			V	T=25°C
Sensitivity				-32.0	dBm	λ=1490nm, @2488.32Mbps, PRBS23, ER=10dB, BER=10 ⁻¹⁰ , T _A =25°C

Typical Characteristics

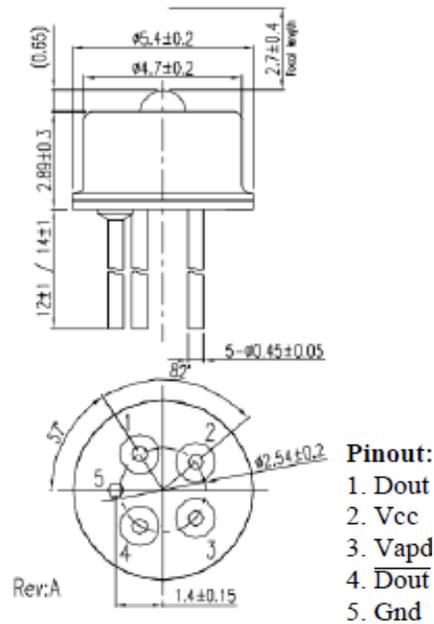
Eye Diagram

R_{load}=50ohm, P=-30dBm@2488.32Mbps, 1490nm, PRBS 23



tr=178.7ps, tf=172.8ps, Jitter p-p=101.05ps

Outline Dimensions (unit: mm)



Note: Specifications are subject to change without notice.