



10Gbps InGaAs APD with Pre-Amplifier

APD-A13P5-10GC3



Description

The APD-A13P5-10GC3 is a high-speed InGaAs avalanche photodiode (APD) with an integrated pre-amplifier, designed for long-wavelength optical communication. Packaged in an industry-standard TO-46 with a short cap lens, the device delivers reliable performance for data rates up to 10.3125Gbps, making it ideal for high-speed telecom and datacom applications.

Features

- Industry standard TO-46 package with short cap lens
- Integrated pre-amplifier for enhanced performance
- Designed for long-wavelength 10.3125Gbps applications
- Operates with a single +3.3V power supply

Applications

- High-speed optical communication systems
- Telecom and datacom networks

Specifications

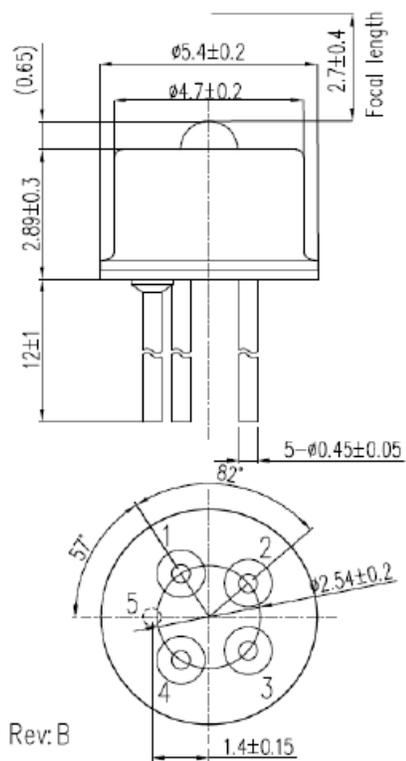
Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage temperature	-40	100	°C	
Operating temperature	-40	85	°C	
Reverse current		3.6	mA	V _{op} =(V _{BR} -3.5V)
Lead solder temperature		260	°C	10 seconds

Electro-Optical Characteristics (T _A =25°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Power supply	V _{CC}	3.0	3.3	3.6	V	
Supply current	I _{CC}	20	27	38	mA	No loads
APDTIA breakdown voltage	V _{BR}	32		43	V	I _d = 10uA
Operating voltage	V _{OP}		V _{BR} -3.5		V	V _{CC} =3.3V
V _{BR} temperature coefficient	γ	0.02	0.03	0.04	V/°C	
Differential responsivity	R _d		13.0		mV/uW	λ=1550nm, R _{load} =100ohm, P=-20dBm
Single ended responsivity	R _s		6.5		mV/uW	λ=1550nm, R _{load} =50ohm, P=-20dBm
Small-signal bandwidth	BW		6.2		GHz	P=-20dBm ⁽¹⁾
Low frequency cut off	LF			30	kHz	
Saturation power	P _{sat}	-7			dBm	V _{op} =(V _{BR} -3.5V)
Single ended output impedance	R _O		50		ohm	
Wavelength	λ	1260		1600	nm	
Sensitivity				-25.0	dBm	λ=1550nm, @10.3125Gbps ⁽¹⁾ , PRBS31, ER=7dB, BER=1E-12, V _{op} =(V _{BR} -3.5V)
				-30.5		λ=1550nm, @10.3125Gbps ⁽¹⁾ , PRBS31, ER=7dB, BER=1E-3, V _{op} =(V _{BR} -3.5V)

Notes:

- (1) The spec and test data are subjected to ROSM level (flexible circuit attached) measurement.

Outline Dimensions (unit: mm)



Pin Configuration

Pin Number	Function
1	Dout(+)
2	Vcc
3	Vapd
4	Dout(-)
5	Gnd

Note: Specifications are subject to change without notice.