



APDE-F05A800-SIx-x

1064nm 800um Enhanced Silicon Avalanche Photodiode in TO-5 Package

Description

The Lasermate APDE-F05A800-SIx-x is a high reliability, low dark current, 800um dia. active area enhanced Silicon avalanche photodiode (APD) with high sensitivity from 400nm to 1100nm. The detector is housed in TO-5 package and with high gain up to M=400.



Features

- High reliability, low dark current
- Top illumination planar APD
- Dia. 800um Active Area
- High Gain up to M=400
- Spectral range 400nm to 1100nm
- 1064nm responsivity 0.37A/W
- Hermetic TO-5 can package

Applications

- Ultra-weak pulse optical detection
- Laser lidar, laser range finder
- Optical fiber sensor, OTDR
- High resolution optical coherence tomography
- Scientific analysis and experiment

Product Overview

The following table lists the available part numbers, as well as the package type and breakdown voltage of each of the part numbers.

Part Number	Package	Breakdown Voltage
APDE-F05A800-SIA-1	TO-5 Can with Flat Window, Dia. 8.1mm Au Cap	220-400V
APDE-F05A800-SIB-1	TO-5 Can with Flat Window, Dia. 8.26mm Nickel Cap	220-400V
APDE-F05A800-SIA-2	TO-5 Can with Flat Window, Dia. 8.1mm Au Cap	401-580V
APDE-F05A800-SIB-2	TO-5 Can with Flat Window, Dia. 8.26mm Nickel Cap	401-580V

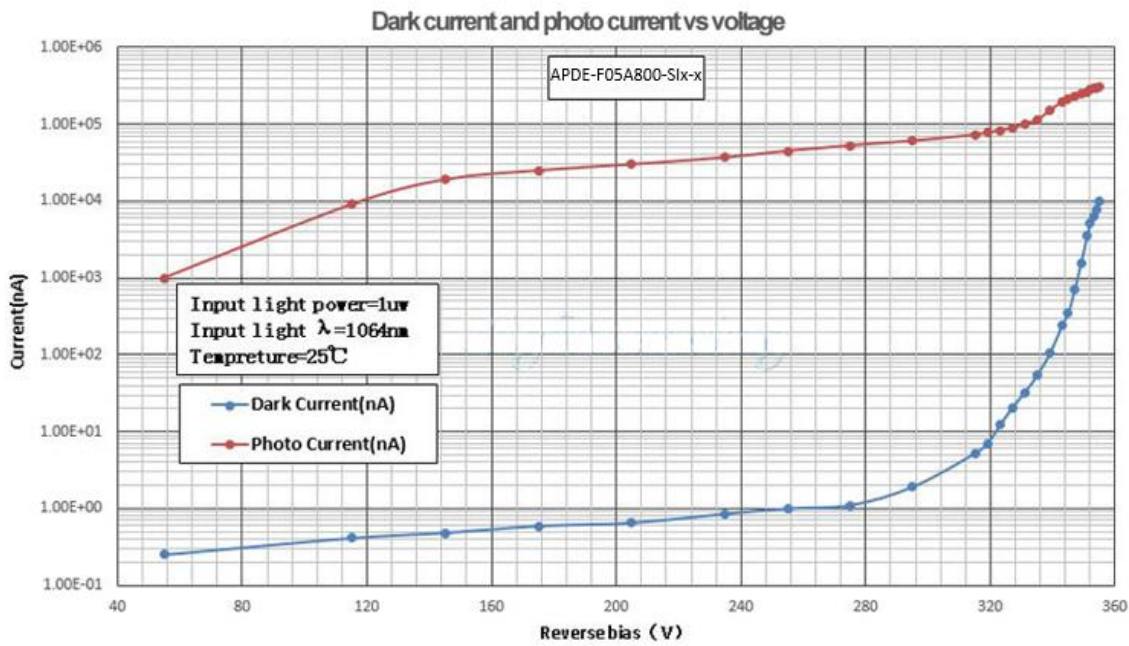
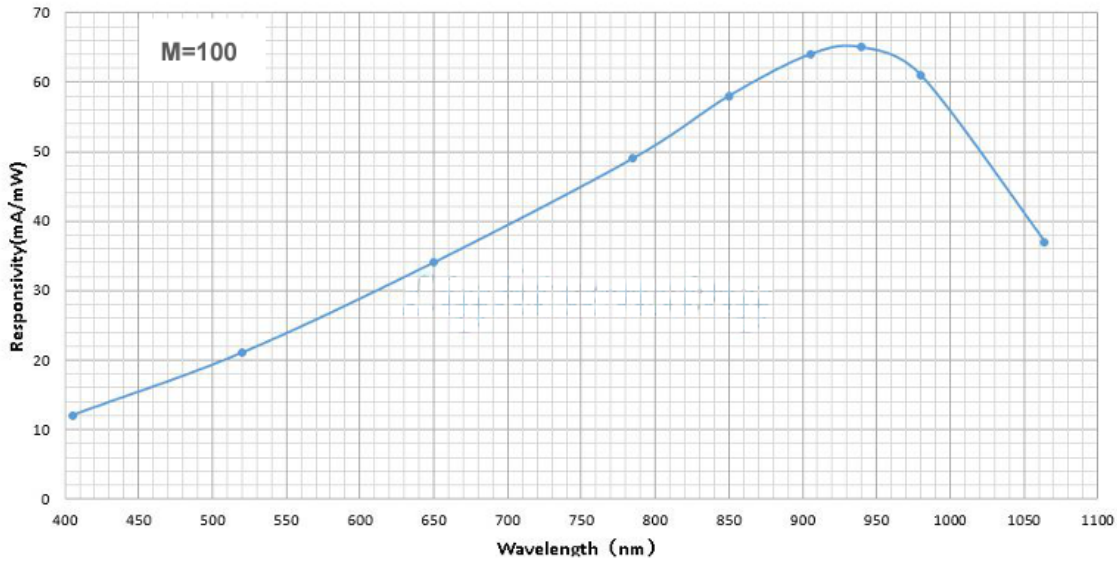


Specifications

Absolute Maximum Ratings				
Parameters	Symbol	Value	Unit	Conditions
Operating voltage	V_{op}	$0.9 \times V_{BR}$	V	
Forward current	I_F	1	mA	
Operating temperature	T_{op}	-45 to 85	°C	
Storage temperature	T_{stg}	-45 to 125	°C	
Power dissipation		1	mW	
Soldering temperature	T_{sol}	260	°C	10 seconds

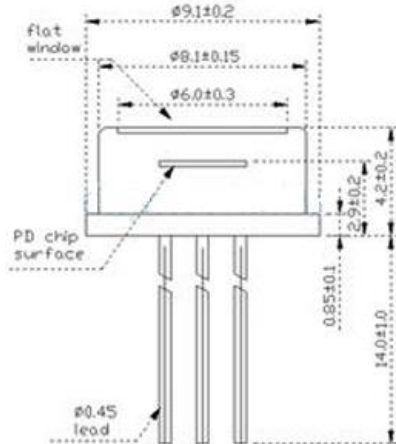
Electro-Optical Characteristics (Top=22+/-3°C)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Response spectrum	λ	400		1100	Nm	
Active diameter	\varnothing		800		Um	
Responsivity	R_e		0.65		A/W	$\lambda=905\text{nm}$, 1uw, M=1
			0.37		A/W	$\lambda=1064\text{nm}$, 1uw, M=1
Multiplication gain	M		100			$\lambda=1064\text{nm}$, 1uw, $0.8V_{BR}$
			200			$\lambda=1064\text{nm}$, 1uw, $0.85V_{BR}$
Response time	T_r		3		ns	M=100, RL=50Ω, $\lambda=1064\text{nm}$
Dark current	I_d		3	20	nA	M=100
Total capacitance	C_{tot}		1.5		pF	M=100, f=1MHz
Reverse breakdown voltage	V_{BR}	220	350	580	V	$I_R=10\mu A$
Maximum instantaneous input power	P			0.5	mW	M=100, 1064nm, 10ns, 10KHz
Operating voltage temperature coefficient	δ		3		V/°C	$T_c=-40$ to $85^\circ C$
Package		Hermetic TO5 can				

Typical Characteristics

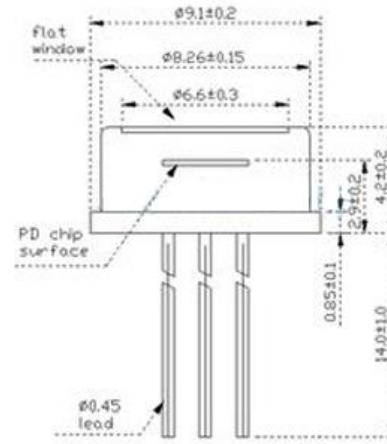


Outline Dimensions (unit: mm)

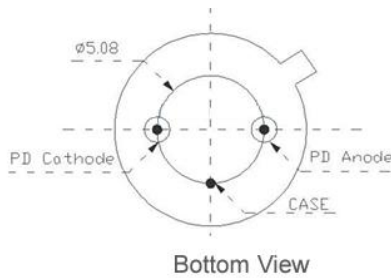
APDE-F05A800-SIA-x:



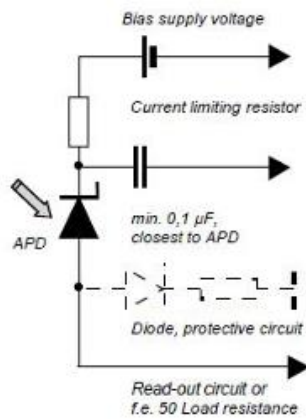
APDE-F05A800-SIB-x:



Pin Configuration



Application Circuit



Notes:

1. The suitable ESD protecting measures are recommended in storage, transportation, and usage.
2. Specifications are subject to change without notice.