



PDx-xx1850-917

0.9~1.7um Dia. 1850nm InGaAs PIN Photodiodes

Overview

The Lasermate PDx-xx1850-917 series is a high responsivity in 0.9um~1.7um wavelength spectral range, low leakage current, high shunt resistance InGaAs PIN photodiode in TO-39 or CLCC package with 1850um diameter large active area.



Features

- Highly reliable planar device
- Low leakage current
- Low stray absorption
- High shunt resistance
- High responsivity in 0.9~1.7um spectral range
- Aperture size \varnothing 1850um
- Package type: TO-39, 8CLCC

Applications

- Power monitoring
- Spectral analysis
- Light Detection and Ranging (LIDAR)
- Remote temperature sensors
- Ice/slush/moisture detection
- Gas leak detection
- Single-photodiode SWIR camera
- Covert IR sensing
- Optical powering

Product Overview

The following table lists the available part numbers, as well as the spectral range, aperture size, and package type of each of the part numbers.

Part Number	Spectral Range	Aperture Size	Package Type
PDT-F39A1850-917	0.9-1.7um	\varnothing 1850um	TO-39, 3-pin
PDT-F39B1850-917	0.9-1.7um	\varnothing 1850um	TO-39, 8-pin
PDLCC-8C1850-917	0.9-1.7um	\varnothing 1850um	8CLCC



Specifications

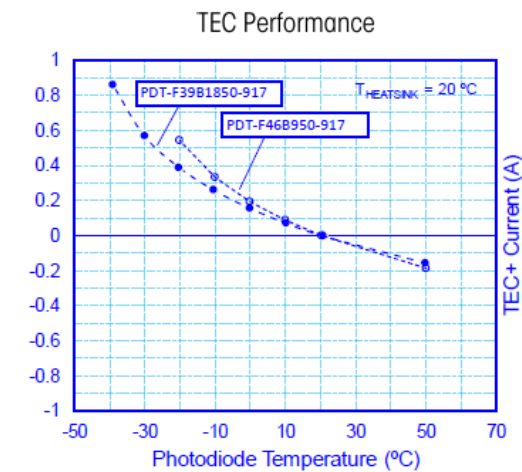
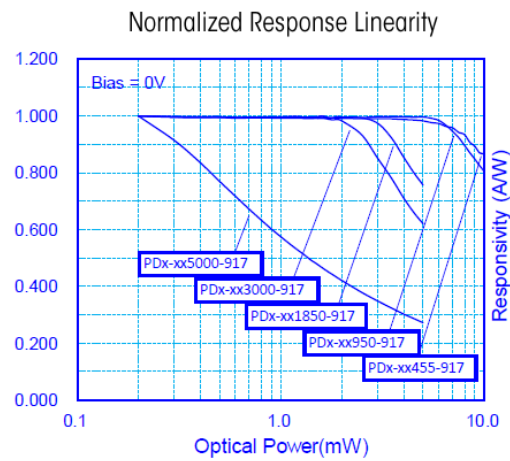
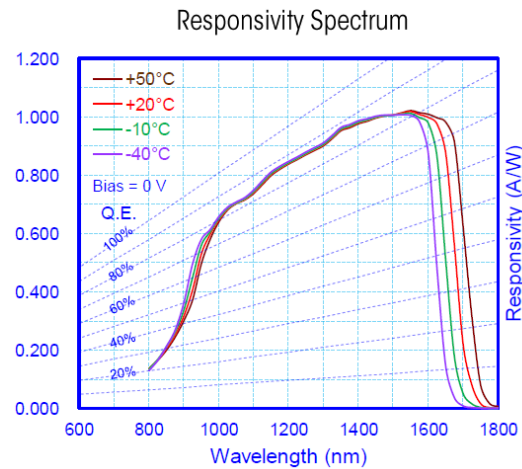
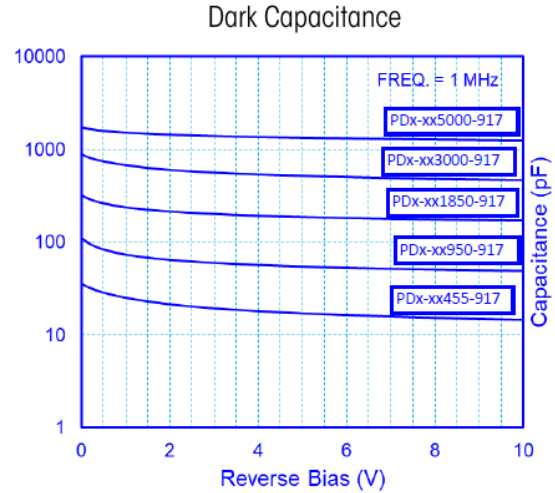
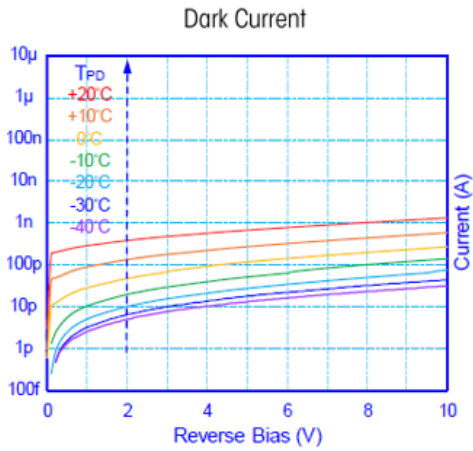
Electro-Optical Characteristics (T _{AMB} =23°C)								
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions		
Aperture size	∅		1850		um			
Spectral Range	λ	0.9		1.7	um			
Responsivity	PDLCC-8C1850 -917		0.1	0.15		A/W	V _R =0V, λ=0.85um	
			0.8	0.9			V _R =0V, λ=1.30um	
			0.85	0.95			V _R =0V, λ=1.55um	
	PDT-F39A1850-917	R _e		0.1	0.15			V _R =0V, λ=0.85um
				0.8	0.9			V _R =0V, λ=1.3um
				0.9	0.95			V _R =0V, λ=1.55um
	PDT-F39B1850-917	R _e		0.1	0.2			V _R =0V, λ=0.85um
				0.85	0.95			V _R =0V, λ=1.3um
				0.95	1.0			V _R =0V, λ=1.55um
Dark Current	I _d		5	10	nA	V _R =-5V		
Capacitance	C		400	800	pF	f=1MHz, V _R =0V		
			200	400		f=1MHz, V _R =-5V		
Saturation Power ⁽¹⁾	P _{sat}	2	4		mW	V _R =0V, λ=1.55um, -0.2dB		
Shunt Resistance	R _{sh}		10	40	MΩ	V _R =-10mV, PDLCC-8C1850 -917		
			50	200		V _R =-10mV, PDT-F39x1850-917		
NEP			2.4	4.8	10 ⁻¹⁴ W/√Hz	V _R =0V, λ=1.55um, f=1kHz		
3dB Bandwidth		8	15		MHz	V _R =-5V, 50Ω		
Max Cooling Capability, ΔT _{MAX} ⁽²⁾	PDT-F39A1850-917		-	-	°C	T _{Heatsink} =20°C		
	PDT-F39B1850-917		55	60			-	

(1) Measured at the aperture center with a 1/e² beam diameter of 250um.

(2) Adequate heatsink and thermal interface material are the prerequisites for stable operation.

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	Non-condensing environment.
Operating Temperature	-40	85	°C	Non-condensing environment.
Forward Current		10	mA	
Reverse Current		10	mA	
Reverse Voltage		15	V	

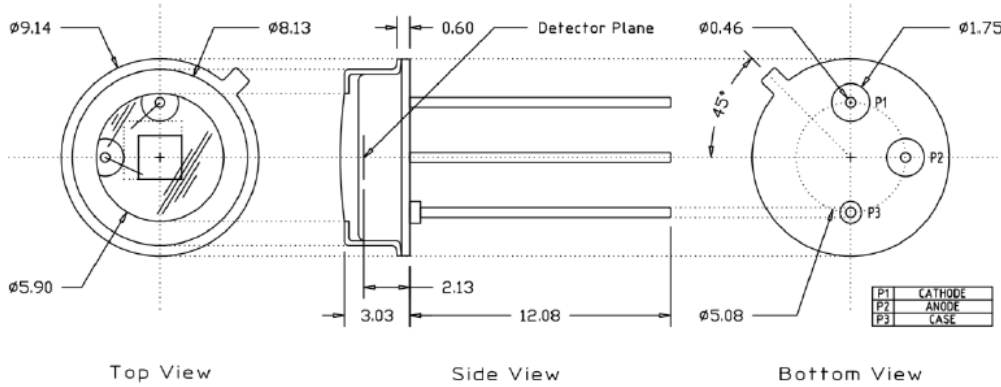
Typical Characteristics



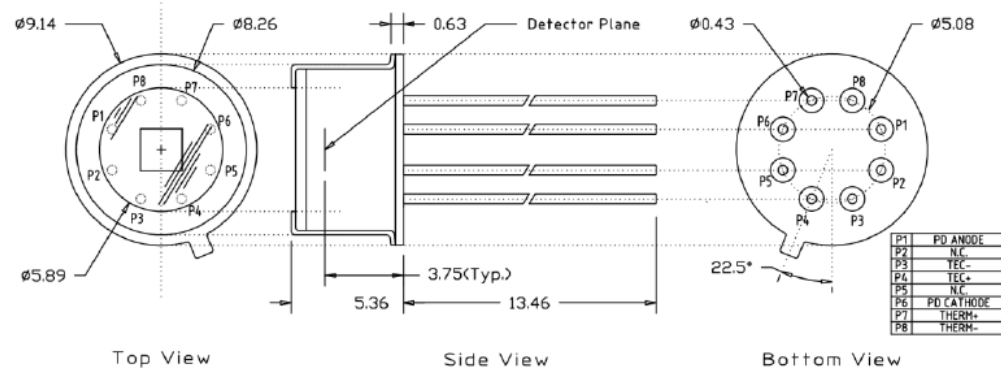
*Non-condensing environment

Outline Dimensions (unit: mm)

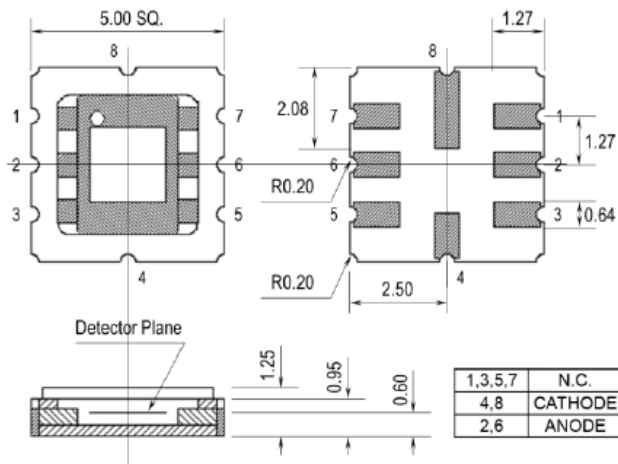
PDT-F39A1850-917:



PDT-F39B1850-917:



PDLCC-8C1850-917:





Additional Notes

1. Specifications are subject to change without notice.
2. The suitable ESD protective measures are needed in storage, transportation, and handling.