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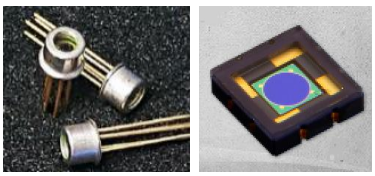
PDx-xx950-917
0.9~1.7um Dia. 950nm InGaAs PIN Photodiodes

Overview

The Lasermate PDx-xx950-917 is a high responsivity in 0.9um~1.7um wavelength spectral range, low leakage current, high shunt resistance InGaAs PIN photodiode in CLCC or TO-can package with 950um diameter 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 ⌀950um
- Package type: 6CLCC, TO-46

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
PDLCC-6C950-917	0.9-1.7um	⌀950um	6CLCC
PDT-F46A950-917	0.9-1.7um	⌀950um	TO-46, 3-pin
PDT-F46B950-917	0.9-1.7um	⌀950um	TO-46, 5-pin

Specifications

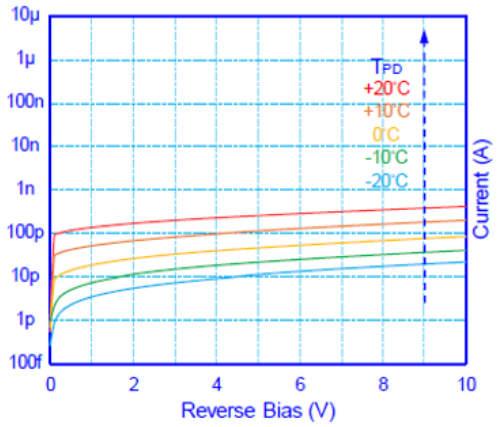
Electro-Optical Characteristics (T_{AMB}=23°C)							
Parameters		Symbol	Min.	Typ.	Max.	Unit	Conditions
Aperture size		⌀		950		um	
Spectral Range		λ	0.9		1.7	um	
Responsivity	PDLCC-6C950 -917	R_e	0.1	0.15		A/W	V_R=0V, λ=0.85um
			0.8	0.9			V_R=0V, λ=1.30um
			0.85	0.95			V_R=0V, λ=1.55um
	PDT-F46A950-917		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-F46B950-917		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		Id		1	2	nA	V_R=-5V
Capacitance		C		120	160	pF	f=1MHz, V_R=0V
				60	80		f=1MHz, V_R=-5V
Saturation Power (1)		P_{sat}	5	7		mW	V_R=0V, λ=1.55um, -0.2dB
Shunt Resistance		R_{sh}	50	200		MΩ	V_R=-10mV
NEP				1.2	2.4	10^{-14}W/√Hz	V_R=0V, λ=1.55um, f=1kHz
3dB Bandwidth			30	40		MHz	V_R=-5V, 50Ω
Max Cooling Capability, ΔT_{MAX} (2)	PDT-F46A950-917		-	-	-	°C	$T_{Heatsink}$=20°C
	PDT-F46B950-917		35	40	-		

(1) Measured at the aperture center with a $1/e^2$ beam diameter of 250um.
(2) Adequate heatsink and thermal interface material are the prerequisites for stable operation.

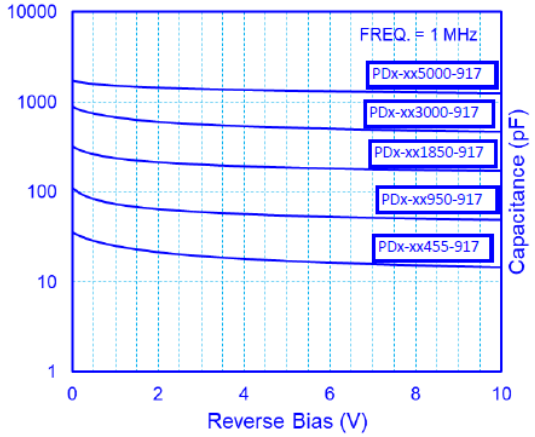
Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	Non-condensing environment.
Operating Temperature	-40	85	°C	Non-condensing environment.
Forward Current		10	mA	
Reverse Current		10	mA	
Reverse Voltage		20	V	

Typical Characteristics

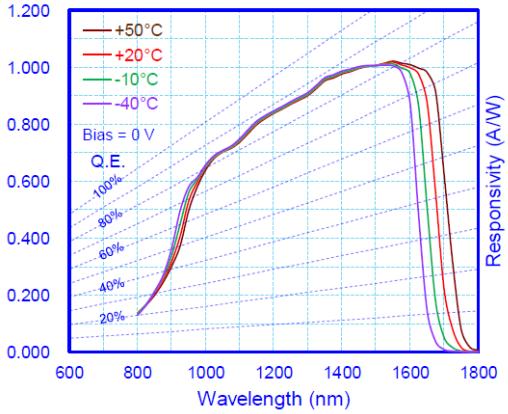
Dark Current



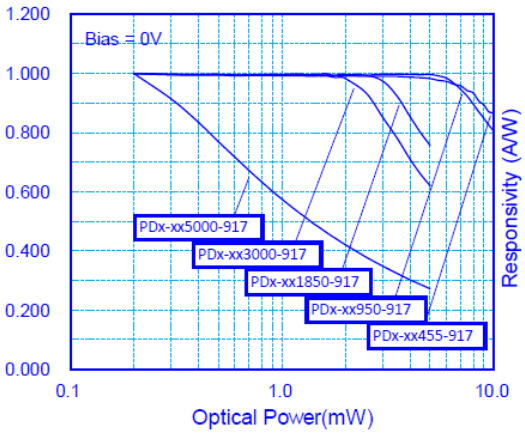
Dark Capacitance



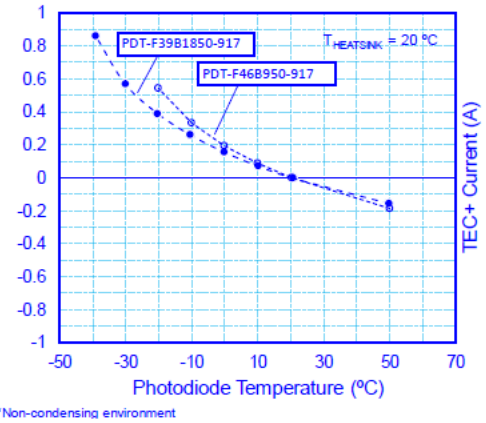
Responsivity Spectrum



Normalized Response Linearity



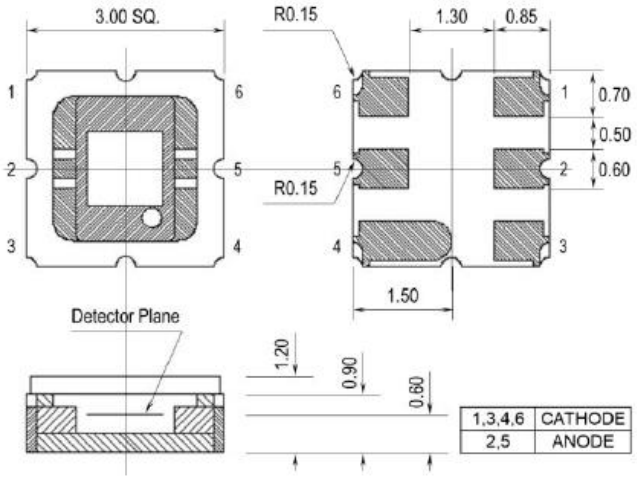
TEC Performance



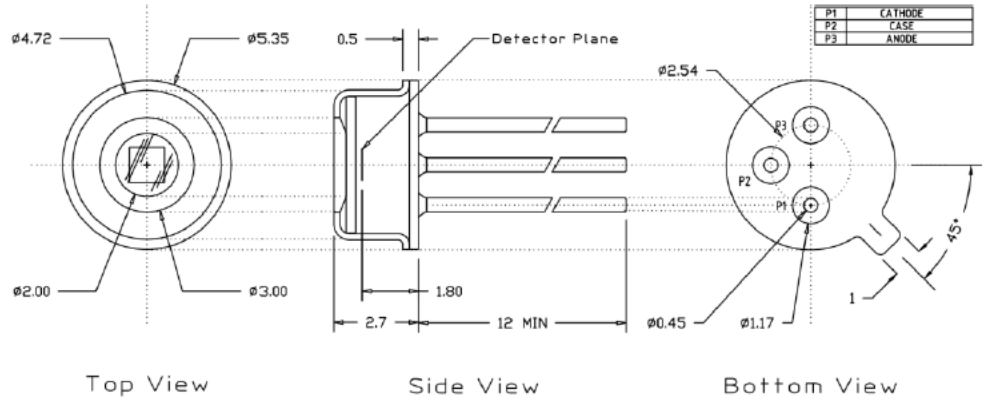
*Non-condensing environment

Outline Dimensions (unit: mm)

PDLCC-6C950-917:



PDT-F46A950-917:



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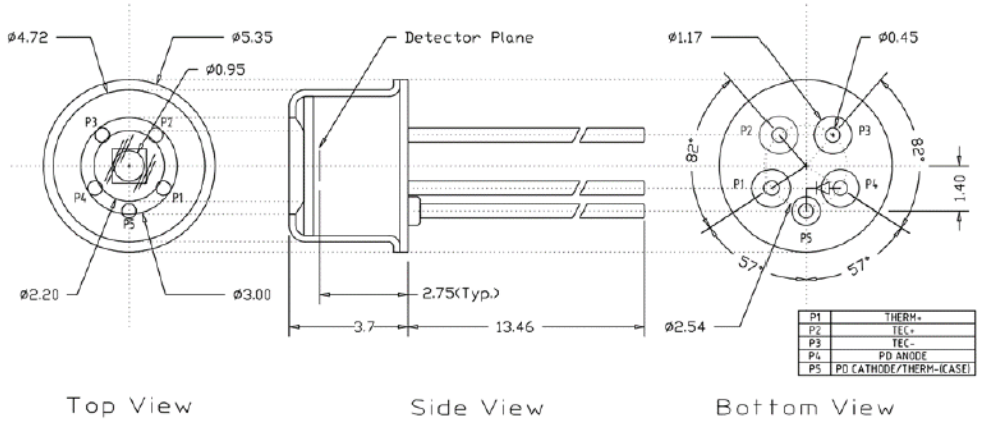

Additional Notes

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