



## 35 GHz Surface Mount InGaAs Photodiode

### Description

An InGaAs photodiode with 35 GHz of 3 dB Bandwidth. This device has been packaged in a custom surface mount package that delivers amazing functional density. With a footprint size of 8x8mm and standing at only 2.5 mm thick this device delivers the performance of butterfly packages in a compact size. This device can be mounted directly to your PCB and comes with a Single-Mode pigtail connector of your choice.

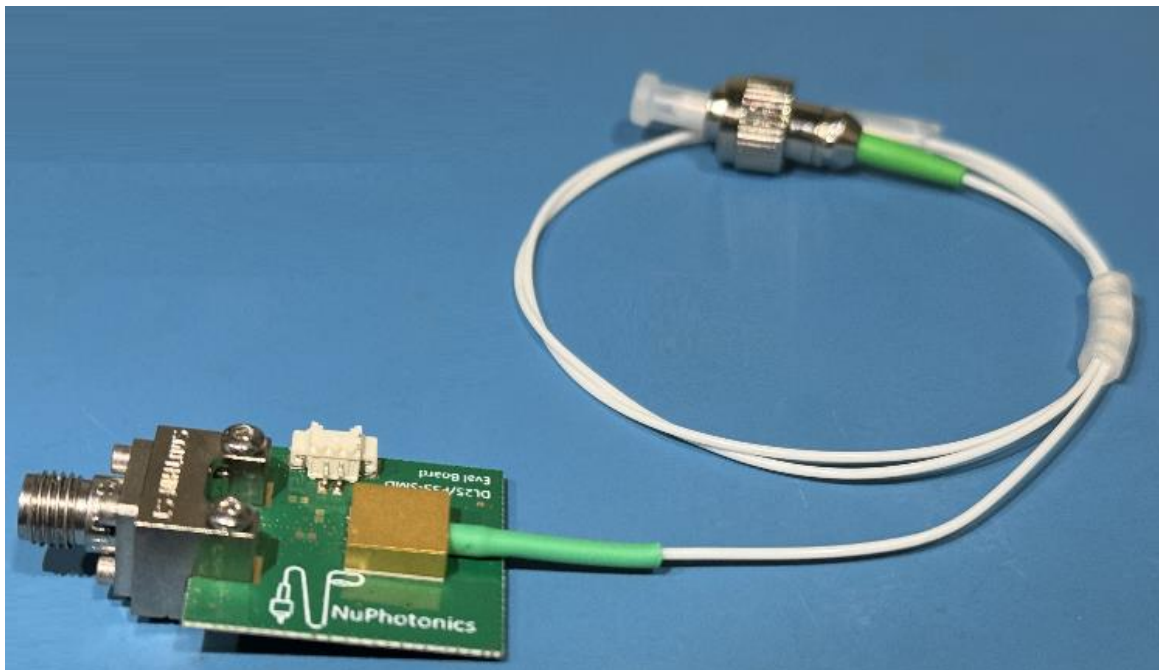
### Features

- 8x8x2.5 mm surface mount package
- Single mode Pigtail cable
- 35 GHz 3 dB Bandwidth at 1550 nm
- Response Spectrum 910 – 1650 nm
- Low Dark Current
- Responsivity 0.7 A/W at 1310 nm
- Responsivity 0.6 A/W at 1550 nm



### Applications

- 400 GbE (PAM4) / 100 GbE
- 400 Gbps/ 200 Gbps/ 100 Gbps  
Digital coherent system
- RF over Fiber (RFoF)



Device shown on an Evaluation Board



**Electro-Optical Characteristics ( $T_{op} 23 \pm 3^{\circ}C$ , unless otherwise specified)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Response Spectrum	$\lambda$	910		1650	nm	
Dark Current	$I_d$		0.05	3.0	nA	$V_r = 5.0 V$
Reverse Breakdown Voltage	$V_{BR}$	20			V	$I = 10 \mu A$
Responsivity	$R_e$	0.7 0.6			A/W	$\lambda = 1310 P_{in} 0.5 mW V = 1.0v$ $\lambda = 1550 P_{in} 0.5 mW V = 1.0v$
Bandwidth	BW	35		50	GHz	$\lambda = 1550 P_{in} 0.5 mW V = 3.0v$ $R_L = 50\Omega$ at - 3 dB
Capacitance	$C_p$		60	70	fF	$F = 1 MHz V = 4.0 v$

**Absolute Maximum Ratings**

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	$V_r$			10	V
Forward Current	$I_F$			10	mA
Reverse Current	$I_R$			5	mA
Optical Input power	$P_{in}$			10	mW
Storage Temperature	$T_{stg}$		-25	90	$^{\circ}C$
Storage Humidity	$H_{stg}$			85	% r.H.
Operating Temperature	$T_{op}$		-10	80	$^{\circ}C$
Soldering Temperature	$T_{st}$	60 sec		200	$^{\circ}C$
ESD Susceptibility		HBM	100		V

Operating at maximum ratings for a prolonged period will cause damage to the device.



### Pin Configuration

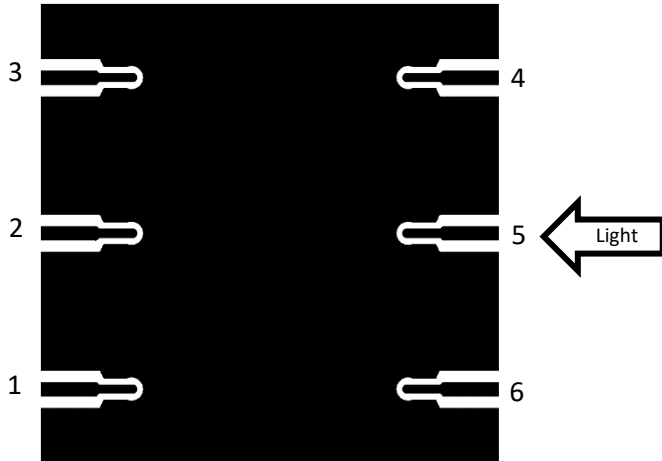


Fig 1A: Bottom View

Note: Entire bottom is ground.

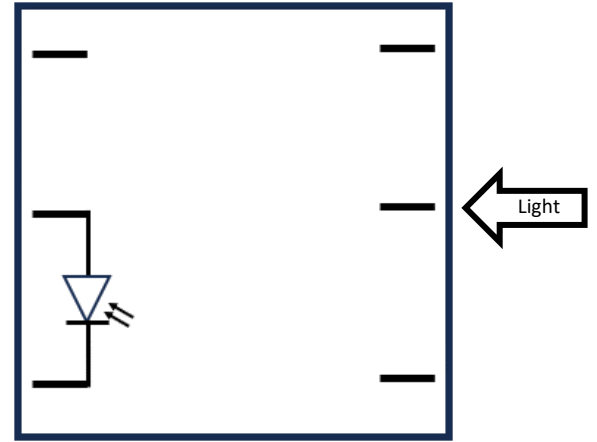


Fig 1B.: Functional diagram (Bottom view)

Pin Number	Function	DC Connector Color (Eval board)
1	PD Cathode	
2	RF output/PD Anode	<span style="background-color: red; display: inline-block; width: 20px; height: 10px;"></span>
3,4,5,6	N.C.	

Table 1: Device Pin out and corresponding color code for 8 pin DC connector.

Note: No connects can be connected to ground

### Recommended Foot PCB Footprint

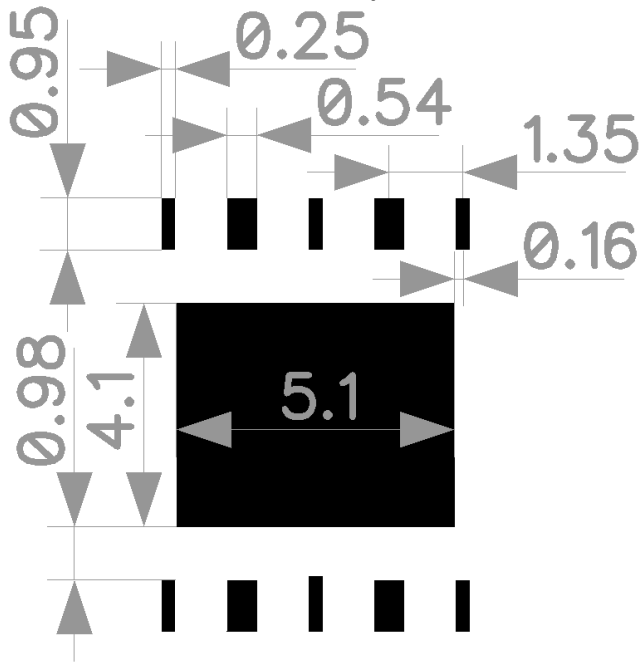


Fig 2. A: Recommended pad landing. All units in (mm)

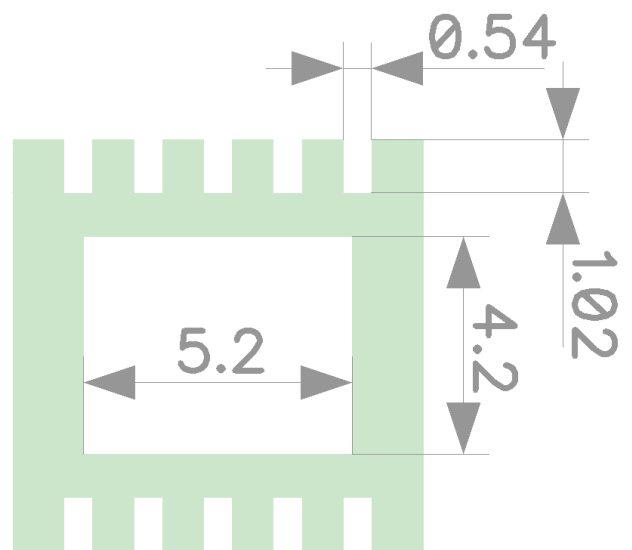
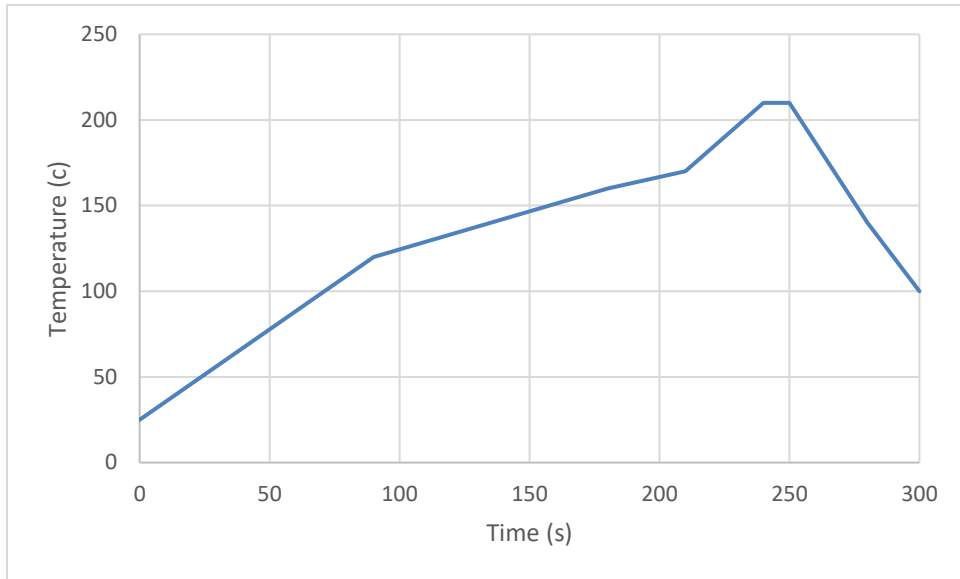


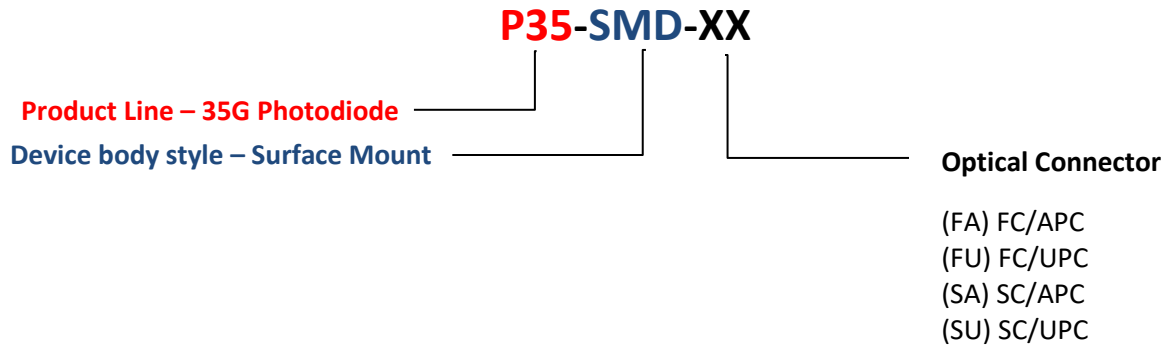
Fig 2. B: Recommended solder mask. All units in (mm)



### Recommended Reflow Profile



### Device Nomenclature



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