

◆ **Introduction:**

S-10BAPD02-G is a front-side illuminated InGaAs APD chip with a planar structure. This product has high responsivity, low dark current, and excellent reliability. It is ideally suited for low cost, high-speed data communication designs.

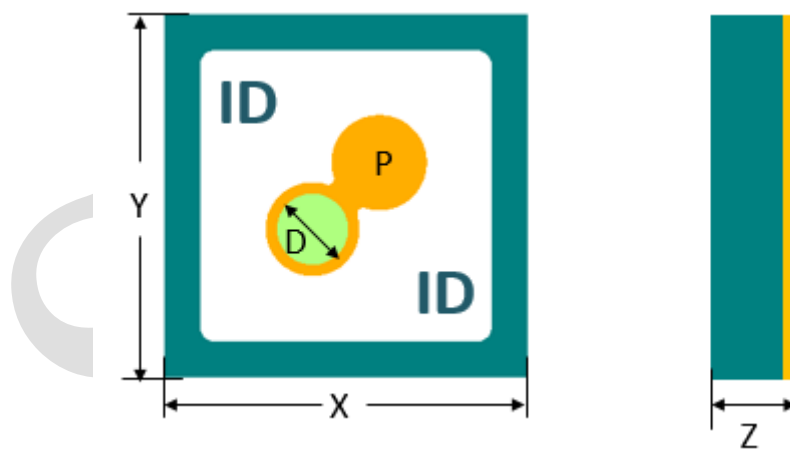
◆ **Key Features:**

- Optical aperture: 50μm
- Low capacitance: 0.5pF Max
- Backside common cathode and topside anode
- Operating temperature range:-40 to +85°C
- 100% testing and inspection
- RoHS compliant

◆ **Applications:**

- GPON
- SONET OC48
- Ethernet
- Fiber Channel

◆ **Physical Parameters:**



	Die Dimension			Aperture	Pad
Symbol	X	Y	Z	D	P
Min	225	225	135		Φ60
Typ	250	250	150	Φ50	Φ65
Max	275	275	165		Φ70
Unit	μm	μm	μm	μm	μm

◆ Absolute Maximum Rating:

Parameter	Symbol	Rating		Unit
		Min	Max	
Operation Voltage	$V_{OP}$		$V_{BR}$	V
Forward Current	$I_F$		5	mA
Reverse Current	$I_R$		3	mA
Operating Temperature	$T_{OP}$	-40	85	°C
Storage Temperature	$T_S$	-45	125	°C
ESD Susceptibility		400		V

◆ Specifications ( $T=25^{\circ}\text{C}$ ) :

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Wavelength Range	$\lambda$		1210	1310/1550	1650	nm
Breakdown Voltage	$V_{BR}$	$I_D=10\mu\text{A}$	38		53	V
Punch-through Voltage	$V_P$	$\lambda=1550\text{nm}$ $P_O=1\mu\text{W}$ $M=1.1$	18		30	V
Dark Current	$I_D$	$V_R=V_{BR}-3\text{V}$ $T=25^{\circ}\text{C}$			20	nA
		$V_R=V_{BR}-3\text{V}$ $T=85^{\circ}\text{C}$			500	nA
Responsivity	$R_e$	$\lambda=1310\text{nm}$ $P_O=1\mu\text{W}$ $M=1$	0.80	0.90		A/W
Multiplication Factor	$M$	$\lambda=1310\text{nm}$ $P_O=1\mu\text{W}$ $V_R=V_{BR}-3\text{V}$	10			
Capacitance	$C$	$V_R=V_{BR}-3\text{V}$			0.5	pF
-3dB Bandwidth	BW	$V_R=V_{BR}-3\text{V}$	2.5			GHz
Temperature coefficient of $V_{BR}$	$\gamma$	+20~+85°C	0.07		0.12	V/°C
		-40~+20°C	0.09		0.15	