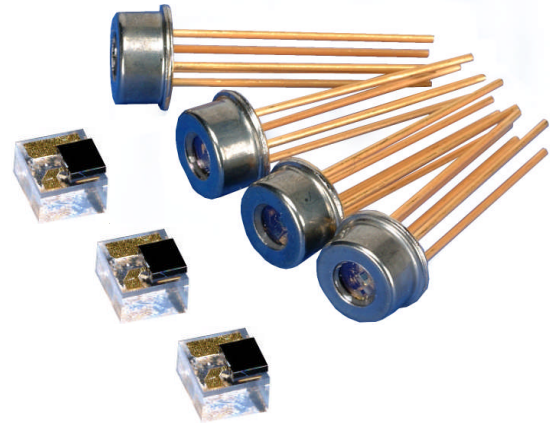


# SU200-01A-TO SU200-01A-SM Large Area InGaAs APDs



The largest commercially available InGaAs APD, the SU200-01A is ideal for 1.25 Gbps free space optical communications laser range-finding applications, OTDR and high resolution Optical Coherence Tomography. Standard packaging choices are a 5 pin TO-46 header package with BK7 window or die mounted on a 800 x 850  $\mu\text{m}$  ceramic submount.



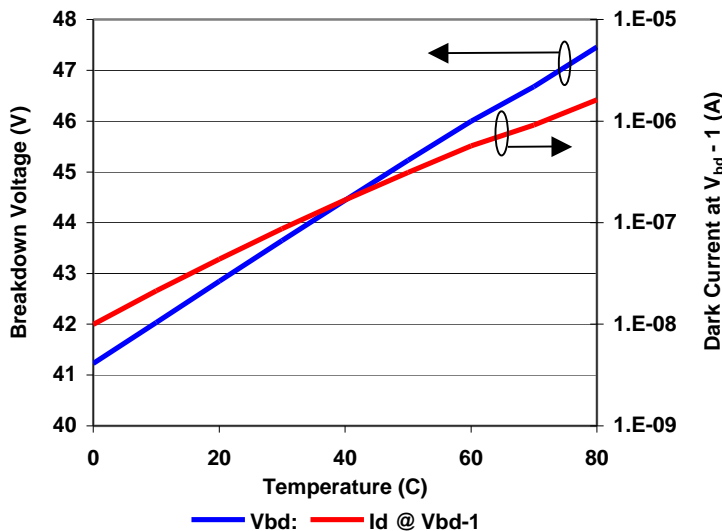
## APPLICATIONS

- Free Space Optical Communications
- LADAR/LIDAR range finding
- Optical Time Domain Reflectometry
- Optical Coherence Tomography

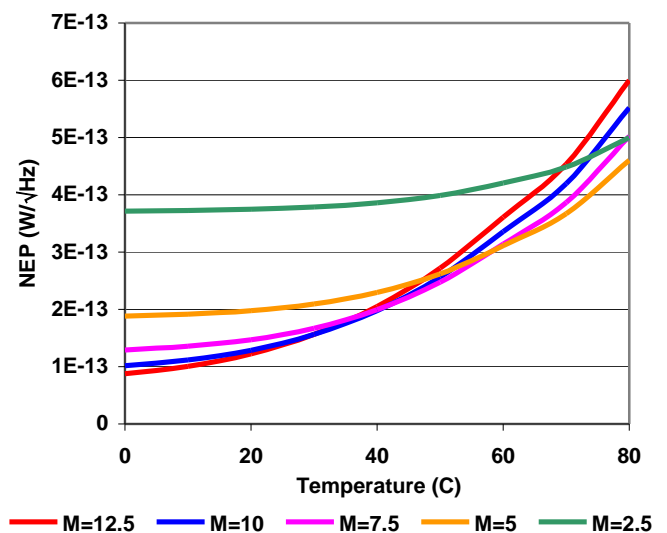
## FEATURES

- Large, 200  $\mu\text{m}$  active diameter
- Typical bandwidth over 1 GHz
- Over 70% QE from 1000 to 1650 nm
- Available in hermetically sealed 5 pin TO-46 package or on submount

$V_{bd}$ ,  $I_d$  over temperature



NEP vs gain & temperature



3490 U.S. Route 1 • Princeton, New Jersey 08540 • Phone: (609) 520-0610 • Fax: (609) 520-0638  
www.sensorsinc.com • info@sensorsinc.com

## SPECIFICATIONS

( $V_{\text{SUPPLY}} = 3.3 \text{ V}$ ,  $T_c = 25^\circ\text{C}$ ,  $V_{\text{APD}} = V_{\text{bd}} - 1 \text{ V}$ ,  $\lambda = 1550 \text{ nm}$ )

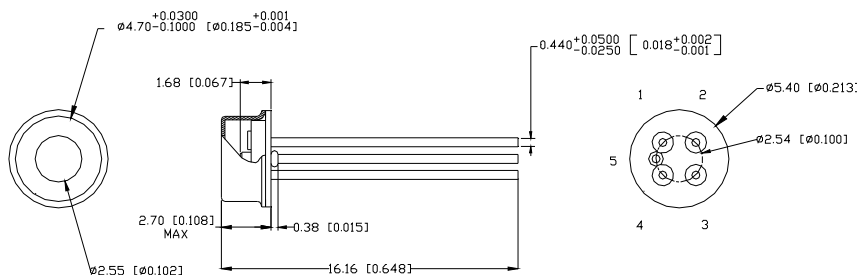
Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Active Diameter	-	D	-	200	-	$\mu\text{m}$
APD Breakdown Voltage	$I_d = 10 \mu\text{A}$	$V_{\text{bd}}$	40	50	60	V
APD Capacitance	$F = 1 \text{ MHz}$	C	10	-	2500	fF
APD Gain Factor	-	M	8	10	-	
APD Responsivity	-	R	5	8	-	A/W
Bandwidth (-3 dB)	M=10	BW	-	1	-	GHz
Dark Current	-	$I_d$	-	150	200	nA
Ionization Ratio	-	$k = \alpha/\beta$	-	0.4	-	
Series Resistance	$dV(i = 7 \text{ mA}, i = 4 \text{ mA})$	$R_o$	-	-	60	$\Omega$

## ABSOLUTE RATINGS

Parameter	Symbol	Min	Typ	Max	Unit
Forward Current	$I_f$	-	-	10	mA
Operating Case Temperature Range	$T_{\text{op}}$	0	-	85	$^\circ\text{C}$
Optical Input Power @ $V_{\text{APD}}$	$P_{\text{IN}}$	-	-	-7	dBm
Reverse Current	$I_r$	-	-	1.6	mA
Storage Case Temperature Range	$T_{\text{stg}}$	-40	-	85	$^\circ\text{C}$

## DIMENSIONS: mm [inch]

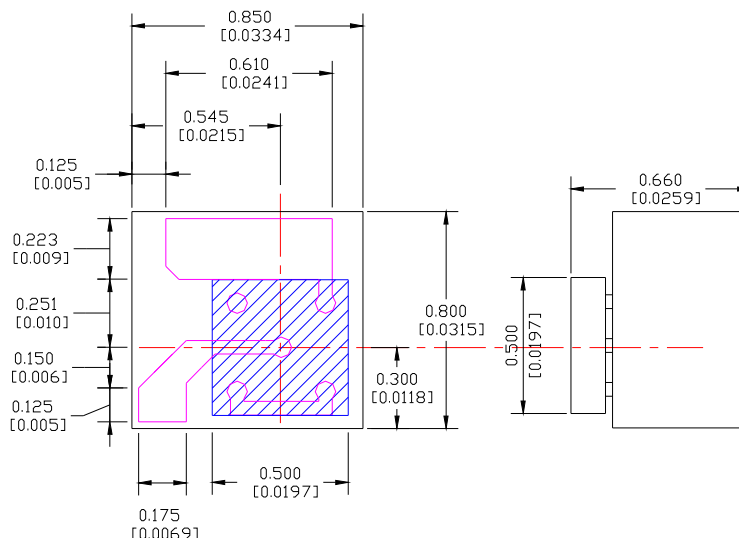
**TO  
PACKAGE**



**PIN FUNCTION**

PIN	FUNCTION
1	APD Anode
2	NC
3	APD Cathode
4	NC
5	GND

**SILICA  
SUBMOUNT**



**NOTES:**

- ALL DIMENSIONS: mm [ INCH ]
- SUBMOUNT PADS HAVE 500 nm OVERLAY OF 99.999% Au
- BACK-ILLUMINATED PHOTODIODE BUMP BONDED TO SUBMOUNT
- BACKSIDE COATED WITH 1550 nm AR COATING
- APD DIAMETER: 200  $\mu\text{m}$
- CAUTION: ELECTROSTATIC DISCHARGE SENSITIVE
- SOLDERING TEMPERATURE SHOULD NOT EXCEED 260 $^\circ\text{C}$  FOR MORE THAN 10 SECONDS

### ORDERING INFORMATION:

SU200-01A-TO      InGaAs APD photodiode with 200  $\mu\text{m}$  active diameter. in TO-46 package  
 SU200-01A-SM      InGaAs APD photodiode with 200  $\mu\text{m}$  active diameter. on silica submount