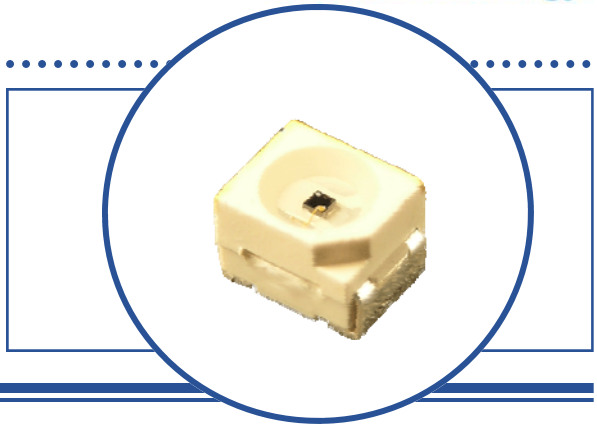
Silicon Photodiode in Top-View PLCC-2 Package

OP980

TT electronics
OPTEK Technology



Features:

- Wide acceptance angle, 100°
- Fast response time
- Linear response vs Irradiance
- Plastic leadless chip carrier (PLCC-2)
- Low Capacitance
- Top Sensing Area
- Tape and reel packaging
- Moisture Sensitivity Level: MSL2 or >

Description:

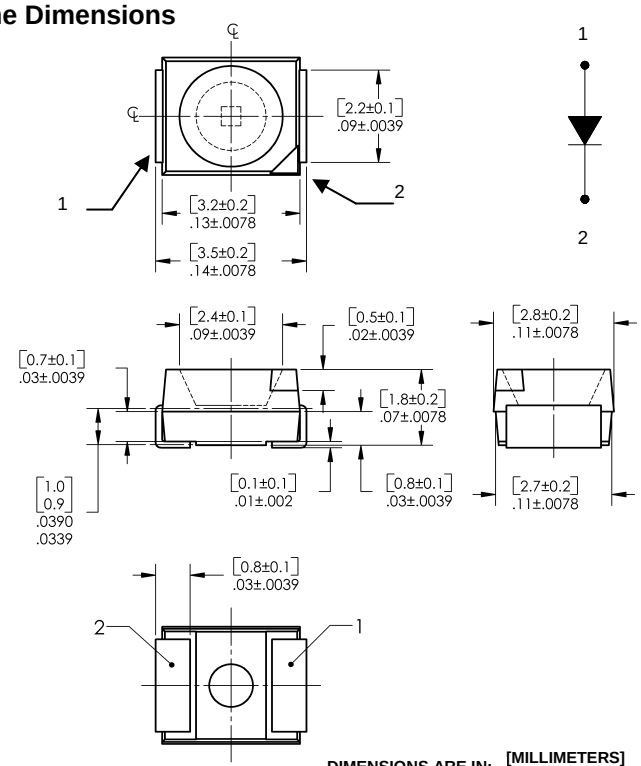
The **OP980** is a high speed, low-noise and high sensitivity PIN silicon photodiode mounted in a miniature SMD package. The device has a flat window lens, which enables a wide acceptance angle at 100°. Due to its clear lens, the OP980 responds to visible and near infrared light. It is packaged in a plastic leadless chip carrier that is compatible with most automated pick and place mounting equipment. *The OP980 is mechanically and spectrally matched to the OP280 and OP180 infrared LED.*

Applications:

- Non-contact position sensing
- Datum detection
- Computer peripherals
- Smoke detectors
- Touch Sensors
- Machine automation
- Optical encoders
- Reflective sensors
- Counters and sorters
- Miniature optical switches

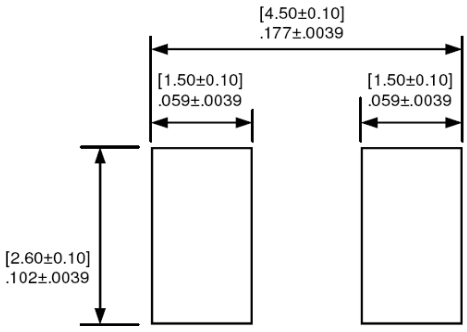
Ordering Information		
Part Number	**Sensor**	**Viewing Angle**
OP980	Photodiode	100°

Package Outline Dimensions



DIMENSIONS ARE IN: [MILLIMETERS] INCHES

Recommended Solder Patterns



Pin #	Transistor
1	Anode
2	Cathode

RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Silicon Photodiode in Top-View PLCC-2 Package

OP980

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

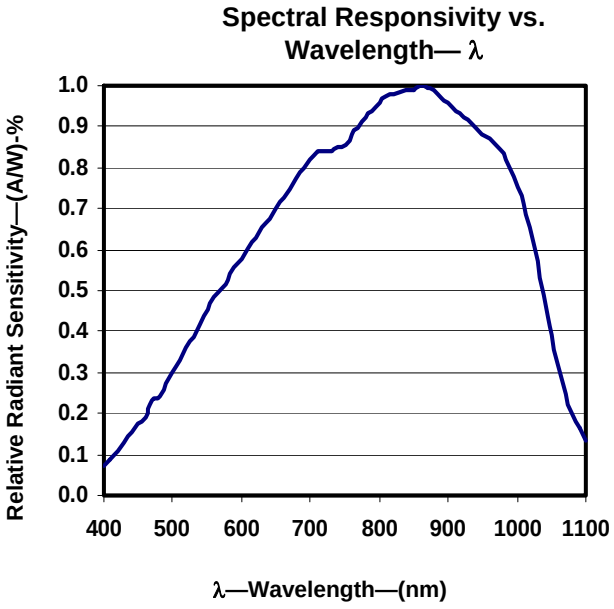
Storage Temperature Range	-40° C to +100° C
Operating Temperature Range	-25° C to +85° C
Lead Soldering Temperature	260° C(1)

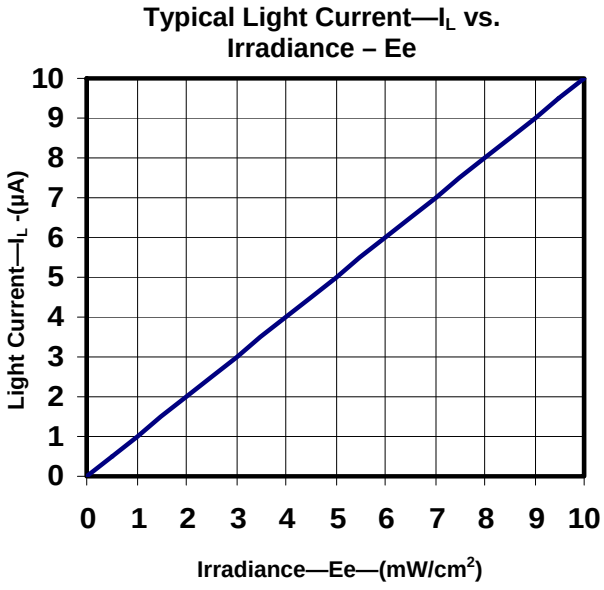
Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I_L	Light Current	0.5	-	-	µA	V_R = 5.0 V, E_E = 1.0 mW/cm^2(3)
I_D	Dark Current	-	-	60	nA	V_R = 30.0 V, E_E = 0.0 mW/cm^2(3)
$VR_{(BR)}$	Reverse Breakdown Voltage	60	-	-	V	I_R = 10 µA
V_F	Forward Voltage	-	-	1.2	V	I_F = 1 mA, Ee = 0.0 mW/cm^2
λ_{pk}	Peak Sensitivity Wavelength	-	890	-	nm	V_R = 5.0
tr	Rise Time	-	50	-	ns	V_R = 5.0, R_L = 1k
tf	Fall Time	-	50	-	ns	V_R = 5.0, R_L = 1k

Notes:
1. Solder time less than 5 seconds at temperature extreme.
2. Derate linearly at 1.33 mW/° C above 25° C.
3. $E_{e(APT)}$ is an unfiltered GaAlAs LED with peak emission wavelength of 890nm. The measurement of the apertured radiant incidence upon a sensing area 0.081" (2.06mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 0.590" (14.99mm) from the measurement surface. Measurement surface will be considered the tip of the top-view lens. $E_{e(APT)}$ is not necessarily uniform within the measured area.

Electrical Characteristic Performance Curves



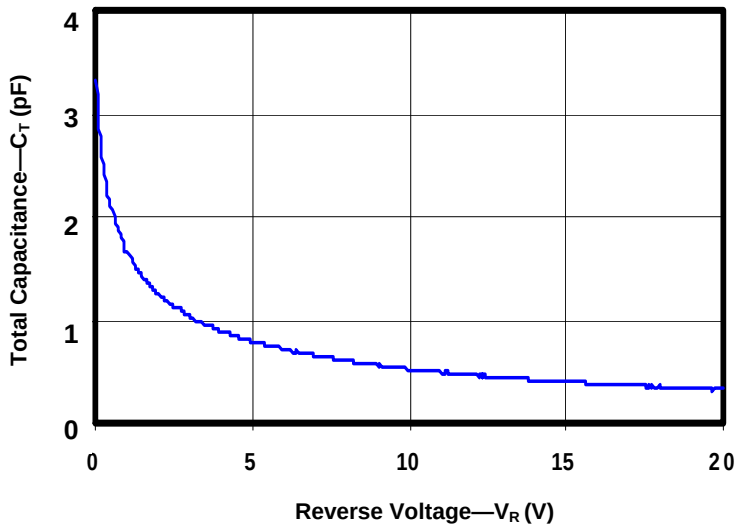


OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

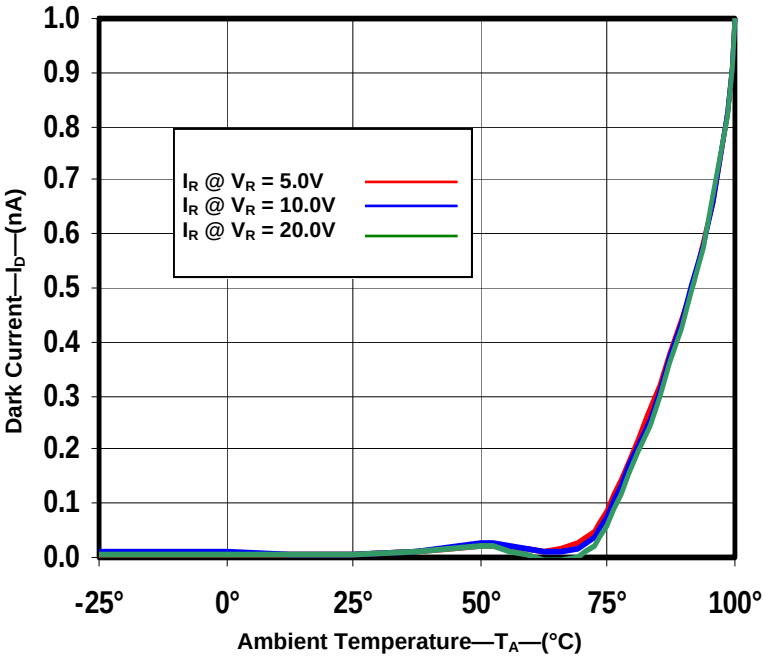
OPTEK Technology Inc. — 1645 Wallace Drive, Carrollton, Texas 75006
Phone: (972) 323-2200 or (800) 341-4747 FAX: (972) 323-2396 sensors@optekinc.com www.optekinc.com

More Typical Performance Curves

Total Capacitance—C_T (pF) vs. Reverse Bias Voltage—V_R (V)

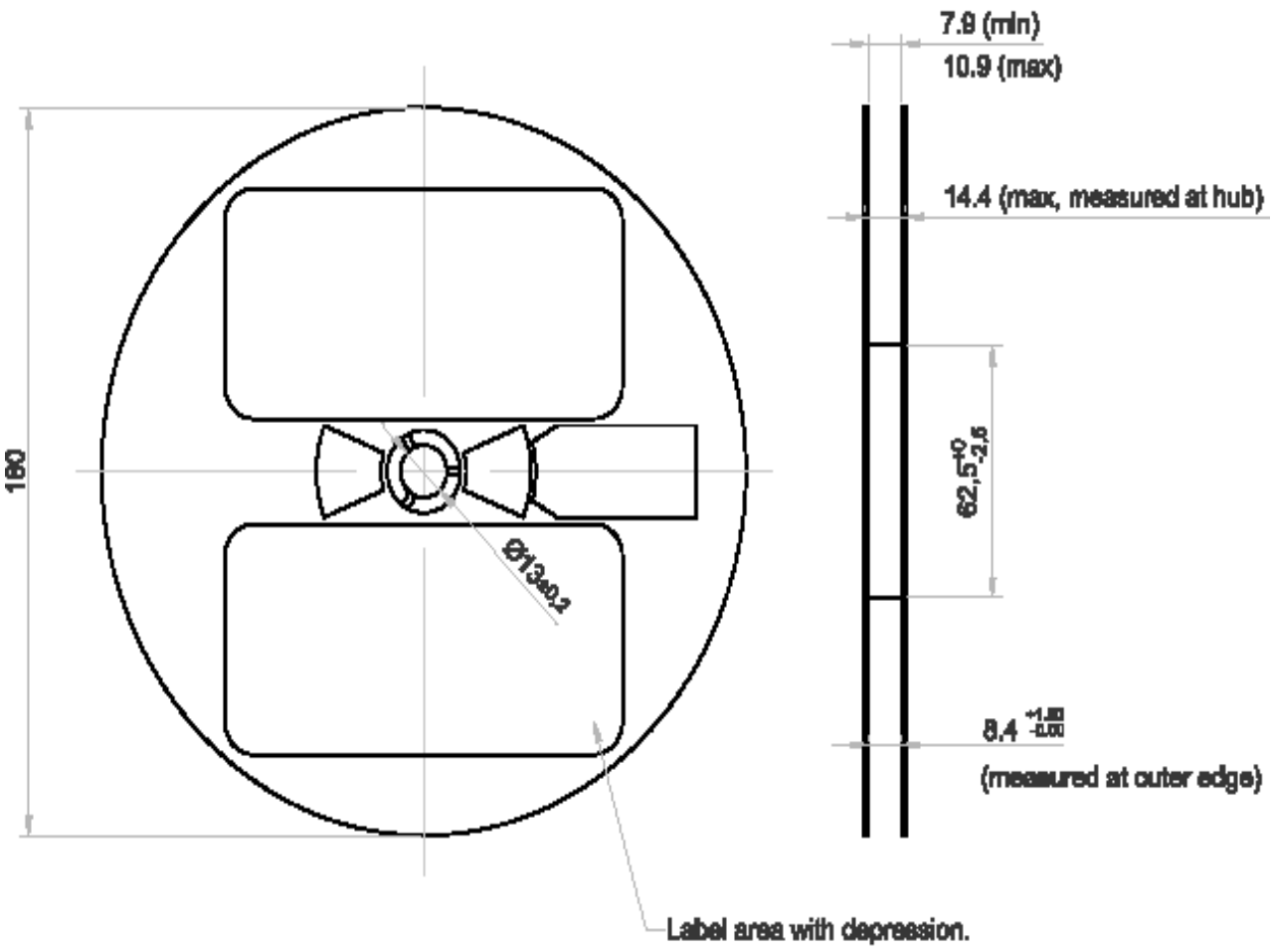


Dark Current—I_D vs. Irradiance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Reel Packaging Dimensions



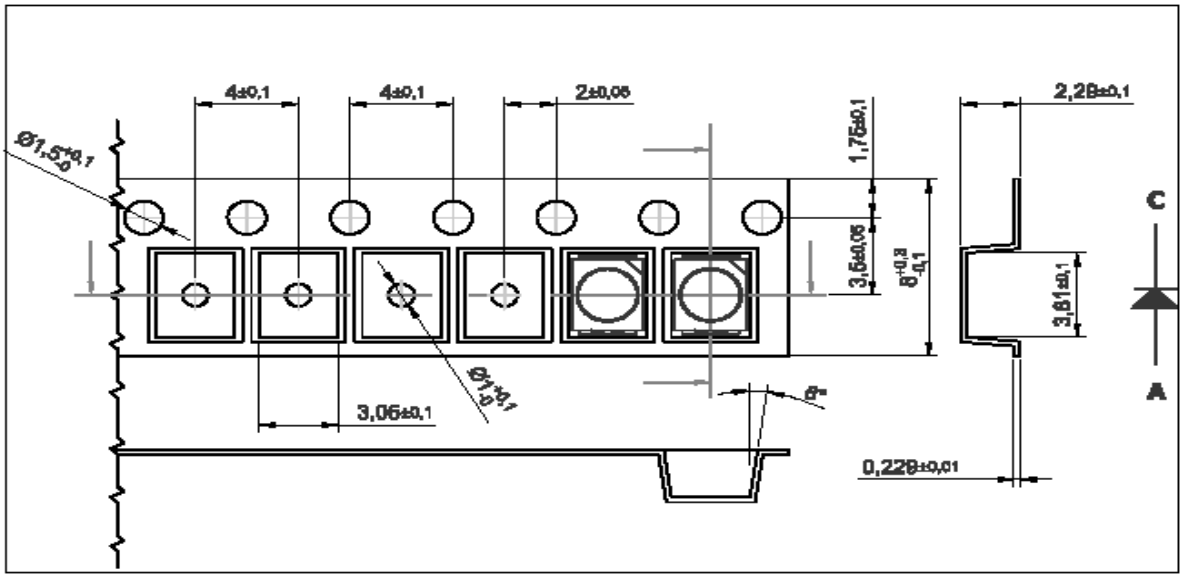
Dimensions are in: mm
Tolerance: ±0.01

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

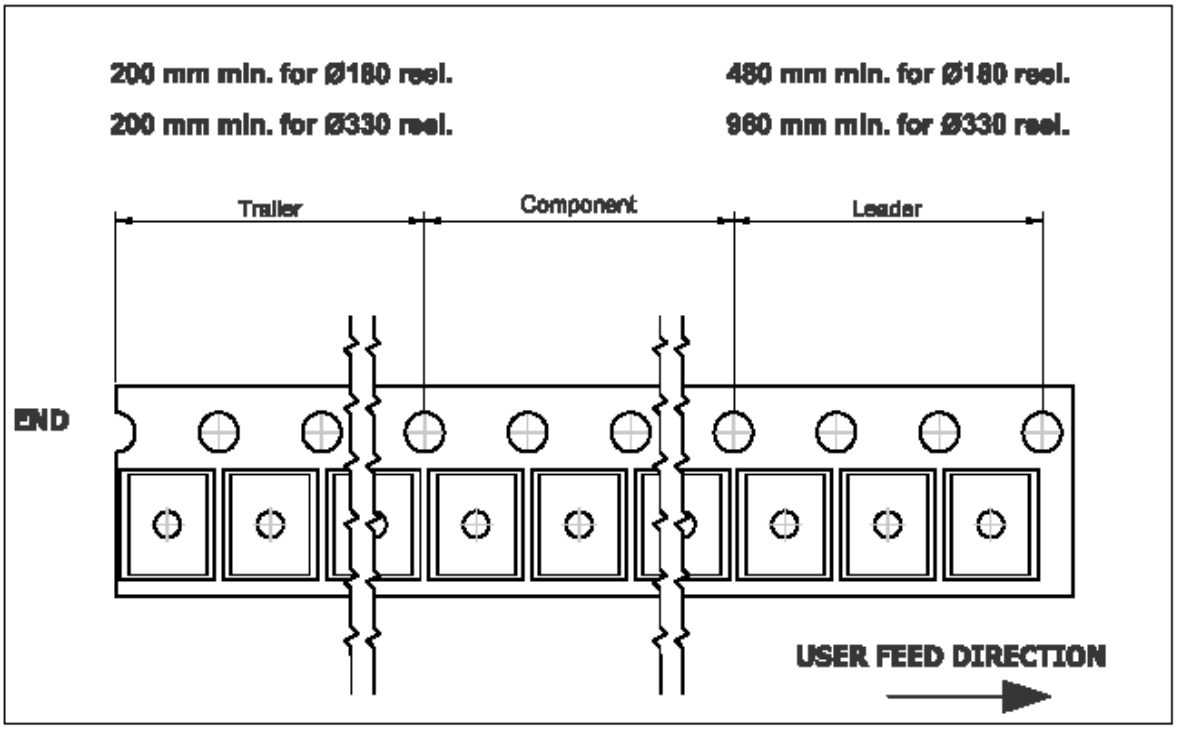
OPTEK Technology Inc. — 1645 Wallace Drive, Carrollton, Texas 75006
Phone: (972) 323-2200 or (800) 341-4747 FAX: (972) 323-2396 sensors@optekinc.com www.optekinc.com

Taping and Orientation

- **Reels come in quantity of 2000 units.**
- **Reel diameter is 180mm.**



Tape Feed Direction



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Optek:
OP980