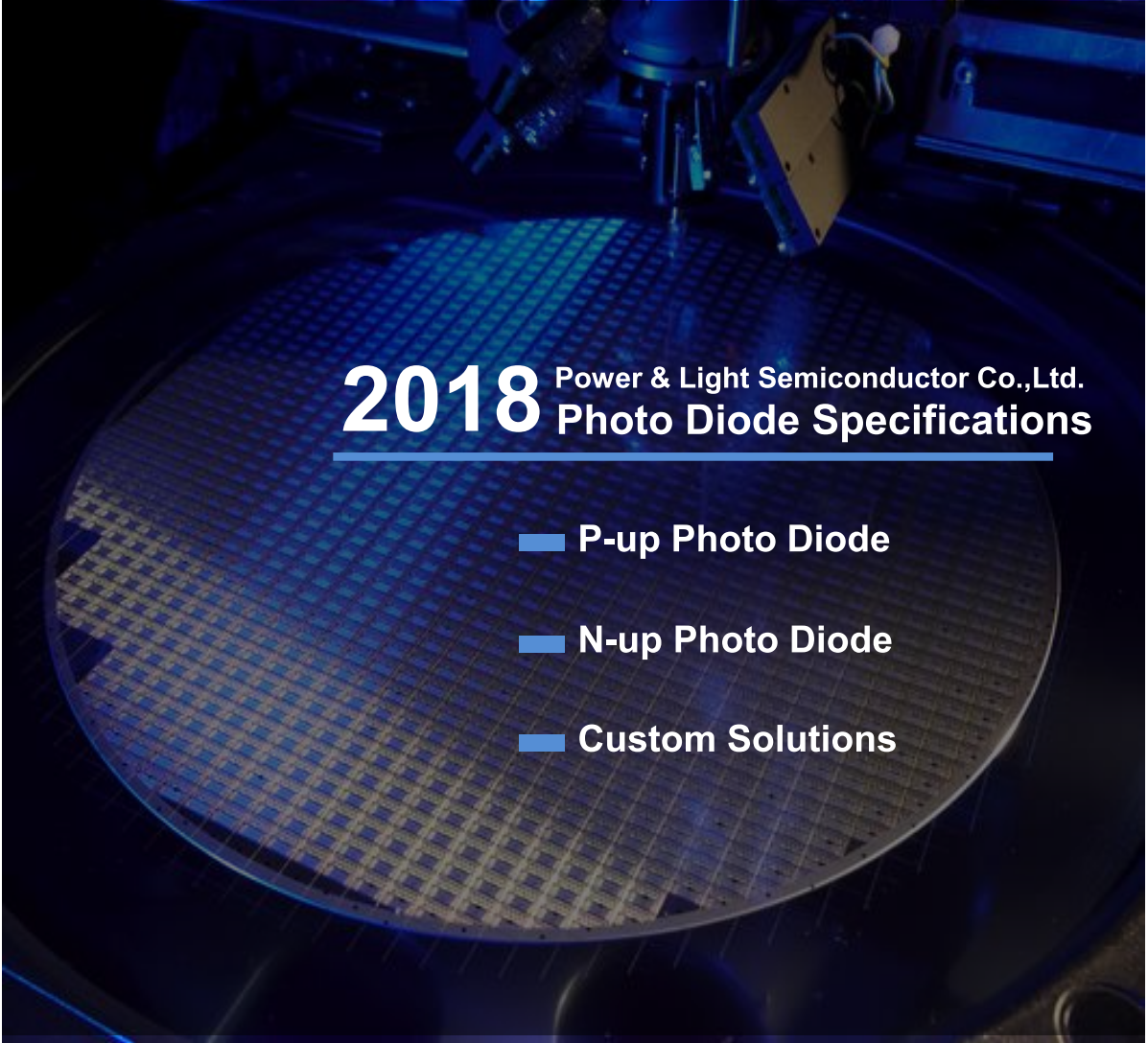




2018

Power & Light Semiconductor Co.,Ltd.
Photo Diode Specifications

■ P-up Photo Diode

■ N-up Photo Diode

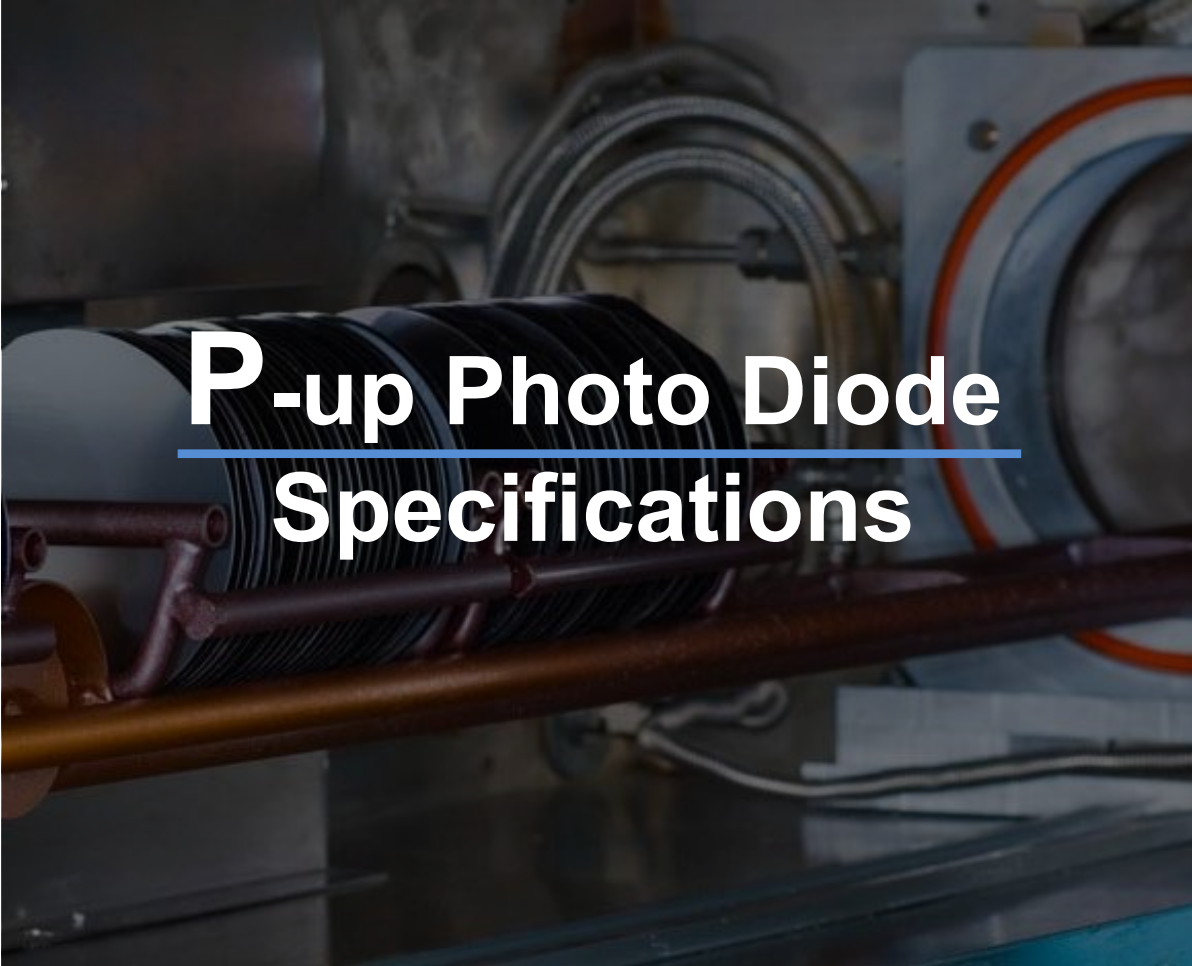
■ Custom Solutions

P&L SEMI
Power and Lighting Semiconductor

www.pnlsemi.com
+82-63-714-3737
smgoh@pnlsemi.com

Photo Diode List

Product No.	Electrode	Die Size	Active Area	PAD Size
	Common	[mm]	W x L [mm]	W x L [mm]
P-up Photo Diodes				
PSD-1054A	Cathode	0.54 x 0.54	0.42 x 0.42	0.15 x 0.15
PSD-1068068A	Cathode	0.68 x 0.68	0.55 x 0.55	Ø 0.15
PSD-1068068	Cathode	0.68 x 0.68	0.55 x 0.55	Ø 0.15
PSD-1077A	Cathode	0.89 x 0.65	0.77 x 0.53	0.15 x 0.15
PSD-1109A	Cathode	1.09 x 1.09	0.97 x 0.97	0.15 x 0.15
PSD-1130A	Cathode	1.13 x 1.13	1.18 x 1.18	0.15 x 0.15
PSD-1060A	Cathode	1.52x 1.52	1.40 x 1.40	0.15 x 0.15
PSD-1064A	Cathode	1.60 x 1.60	1.47 x 1.47	0.15 x 0.15
PSD-1220A	Cathode	2.20 x 2.20	2.08 x 2.08	0.15 x 0.15
PSD-1230A	Cathode	2.30 x 2.30	2.18 x 2.18	0.15 x 0.15
PSD-1300A	Cathode	3.00 x 3.00	2.85 x 2.85	0.15 x 0.15
N-up Photo Diodes				
PSD-2068068A	Anode	0.68 x 0.68	0.55 x 0.55	Ø 0.15
PSD-2068068	Anode	0.68 x 0.68	0.55 x 0.55	Ø 0.15
PSD-2077A	Anode	0.89 x 0.65	0.77 x 0.53	0.15 x 0.15
PSD-2077	Anode	0.89 x 0.65	0.77 x 0.53	0.15 x 0.15
PSD-2100A	Anode	1.00 x 1.00	0.88 x 0.88	0.13 x 0.13
PSD-2109A	Anode	1.09 x 1.09	0.97 x 0.97	0.15 x 0.15
PSD-2109	Anode	1.09 x 1.09	0.97 x 0.97	0.15 x 0.15
PSD-2130A	Anode	1.13 x 1.13	1.18 x 1.18	0.15 x 0.15
PSD-2130	Anode	1.13 x 1.13	1.18 x 1.18	0.15 x 0.15
PSD-2060A	Anode	1.52x 1.52	1.40 x 1.40	0.15 x 0.15
PSD-2060	Anode	1.52x 1.52	1.40 x 1.40	0.15 x 0.15
PSD-2064A	Anode	1.60 x 1.60	1.47 x 1.47	0.15 x 0.15
PSD-2064	Anode	1.60 x 1.60	1.47 x 1.47	0.15 x 0.15
PSD-21814A	Anode	1.80 x 1.40	1.68 x 1.28	0.15 x 0.15
PSD-2180A	Anode	1.80 x 1.80	1.68 x 1.68	0.15 x 0.15
PSD-2180	Anode	1.80 x 1.80	1.68 x 1.68	0.15 x 0.15
PSD-2230A	Anode	2.30 x 2.30	2.18 x 2.18	0.15 x 0.15
PSD-2230	Anode	2.30 x 2.30	2.18 x 2.18	0.15 x 0.15
PSD-2220A	Anode	2.20 x 2.20	2.08 x 2.08	0.15 x 0.15
PSD-2220	Anode	2.20 x 2.20	2.08 x 2.08	0.15 x 0.15
PSD-2300A	Anode	3.00 x 3.00	2.85 x 2.85	0.15 x 0.15
PSD-2300	Anode	3.00 x 3.00	2.85 x 2.85	0.15 x 0.15



P-up Photo Diode Specifications

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Power and Lighting Semiconductor

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Description

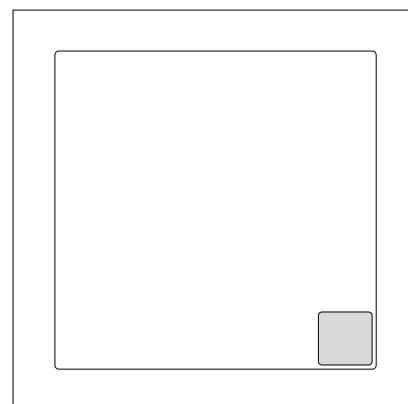
- PSD-1054A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

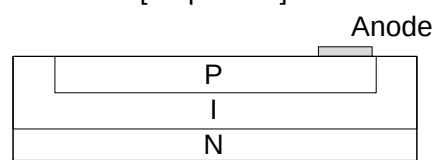
- Light Sensor

Feature

- **Chip Size** : $540\mu\text{m} \times 540\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $420\mu\text{m} \times 420\mu\text{m}$
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\square 150\mu\text{m}$



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Light Current	I_{SC}	Note(1)	1.2			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 5\text{mA}$	0.5		1.3	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 100\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

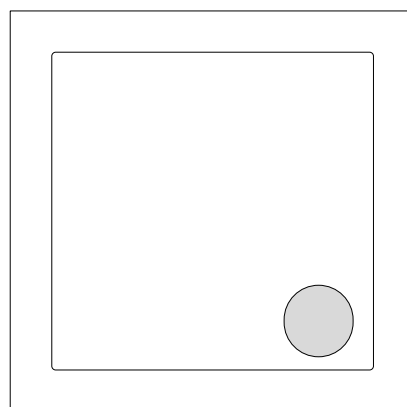
- PSD-1068068A is a high speed and high sensitive PIN Photo Diode.
- Anode is the bond pad on top.

Application

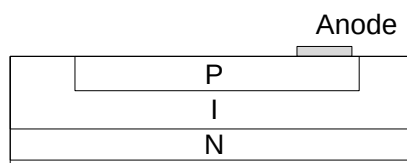
- Light Sensor, Laser Diode Power Control

Feature

- **Chip Size** : $680\mu\text{m} \times 680\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $550\mu\text{m} \times 550\mu\text{m}$
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\Phi 150\mu\text{m}$



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	2			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1\text{mA}$			1.0	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

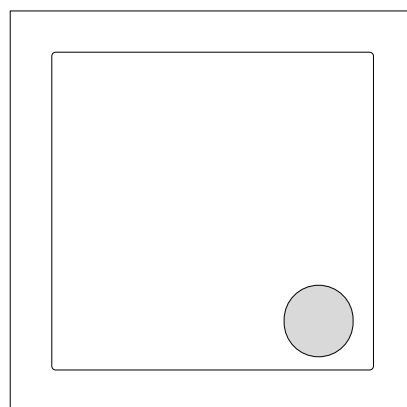
- PSD-1068068 is a high speed and high sensitive PIN Photo Diode.
- Anode is the bond pad on top.

Application

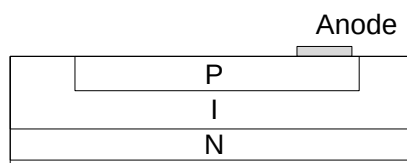
- Light Sensor

Feature

- **Chip Size** : $680\mu\text{m} \times 680\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $550\mu\text{m} \times 550\mu\text{m}$
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\Phi 150\mu\text{m}$



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	2			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1\text{mA}$			1.0	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

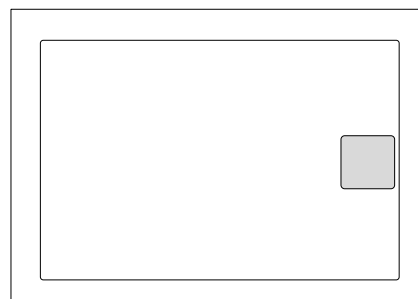
- PSD-1077A is a high speed and high sensitive PIN Photo Diode.
- Anode is the bond pad on top.

Application

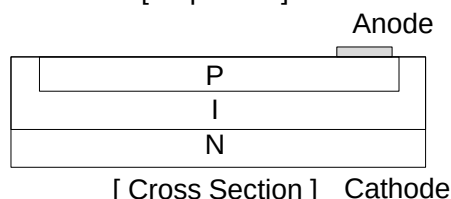
- Light Sensor

Feature

- **Chip Size** : $890\mu\text{m} \times 640\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $770\mu\text{m} \times 520\mu\text{m}$
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square 150\mu\text{m}$



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	2.5			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 5\text{mA}$			1.3	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

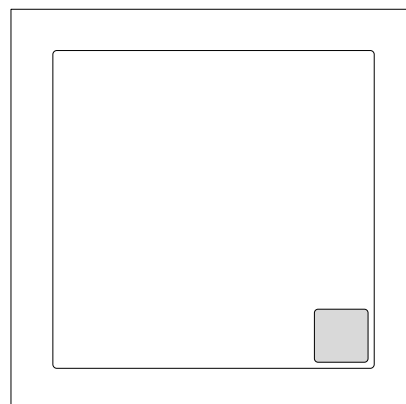
- PSD-1109A is a high speed and high sensitive PIN Photo Diode.
- Anode is the bond pad on top.

Application

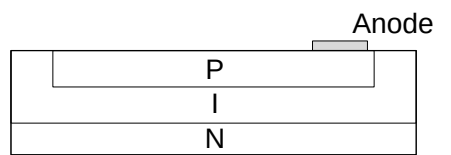
- Light Sensor

Feature

- **Chip Size** : 1090 μ m X 1090 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 970 μ m $\times$ 970 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : □150 μ m



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	6			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

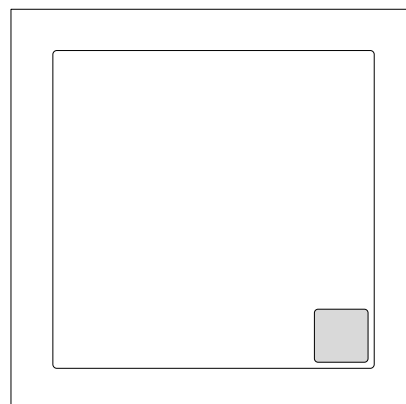
- PSD-1130A is a high speed and high sensitive PIN Photo Diode.
- Anode is the bond pad on top.

Application

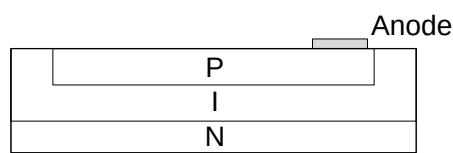
- Light Sensor

Feature

- **Chip Size** : 1300 μ m X 1300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1180 μ m $\times$ 1180 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\square$ 150 μ m



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	10			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

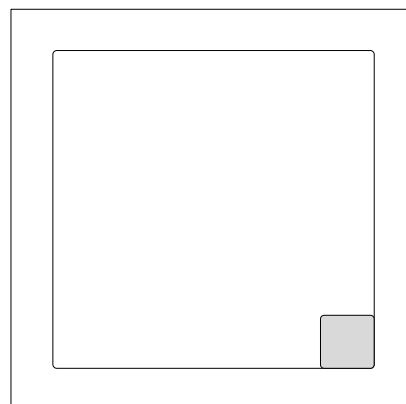
- PSD-1060A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

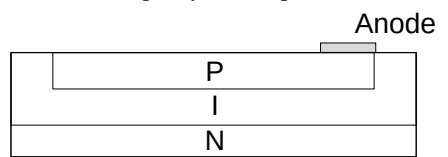
- Light Sensor

Feature

- **Chip Size** : 60(±1.5)mil X 60(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 55mil × 55mil±0.5mil
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	16			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

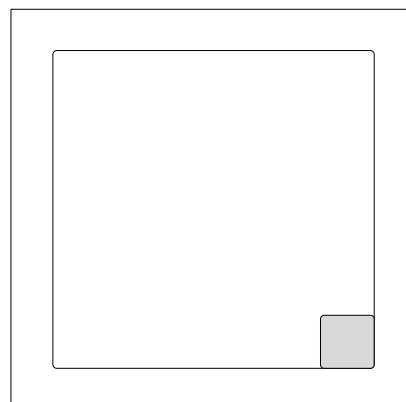
- PSD-1064A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

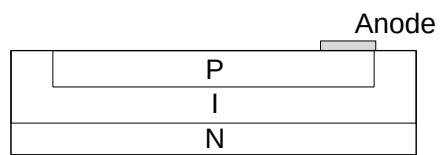
- Light Sensor

Feature

- **Chip Size** : 64(±1.5)mil X 64(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 58mil × 58mil±0.5mil
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	18			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

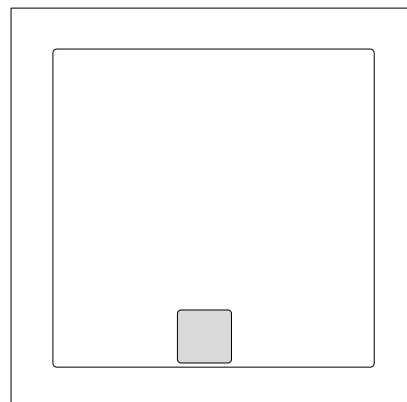
- PSD-1220A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

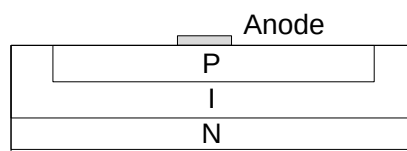
- Light Sensor

Feature

- **Chip Size** : 2200 μ m X 2200 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2080 μ m $\times$ 2080 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\square$ 150 μ m



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Light Current	I_{SC}	Note(1)	36			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1\text{mA}$			1.0	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

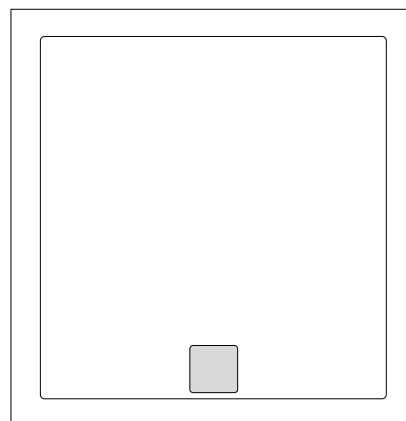
- PSD-1230A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

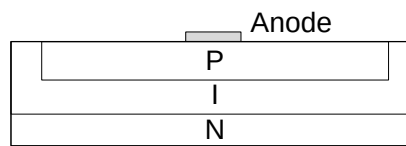
- Light Sensor

Feature

- **Chip Size** : 2300 μ m X 2300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2180 μ m $\times$ 2180 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\square$ 150 μ m



[Top View]



[Cross Section] Cathode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	40			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

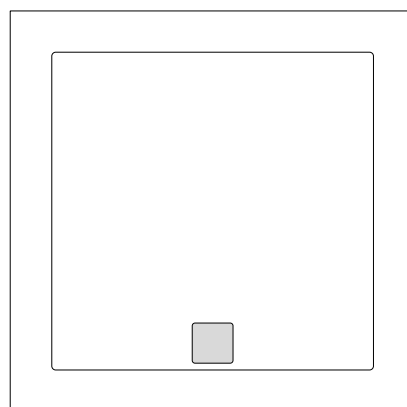
- PSD-1300A is a high speed and high sensitive PIN photodiode.
- Anode is the bond pad on top.

Application

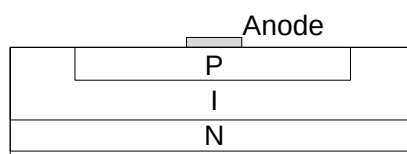
- Light Sensor

Feature

- **Chip Size** : 3000 μ m X 3000 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2850 μ m $\times$ 2850 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\square$ 165 μ m



[Top View]



[Cross Section] Cathode

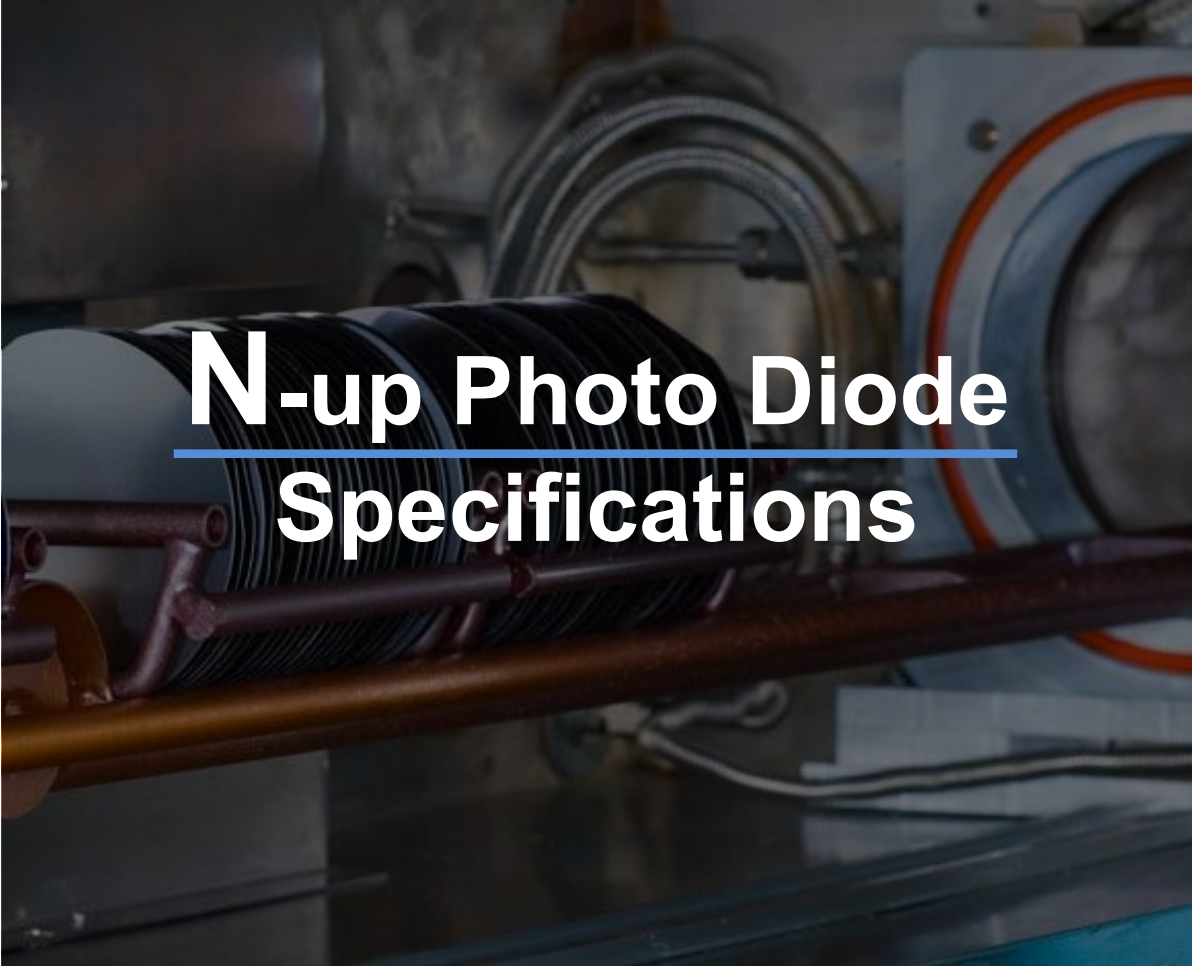
Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	70			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C



N-up Photo Diode Specifications

P&L SEMI
Power and Lighting Semiconductor

www.pnlsemi.com
+82-63-714-3737
smgoh@pnlsemi.com

Description

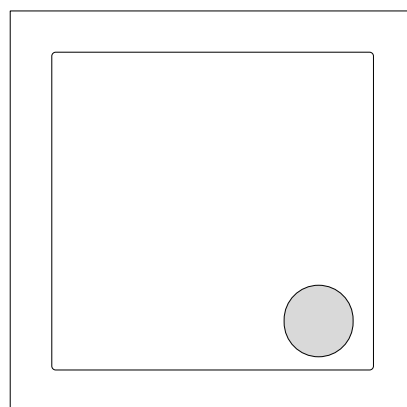
- PSD-2068068A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

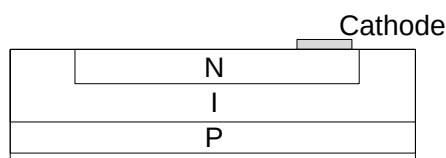
- Light Sensor, Laser Diode Power Control

Feature

- **Chip Size** : $680\mu\text{m} \times 680\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $550\mu\text{m} \times 550\mu\text{m}$
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\Phi 150\mu\text{m}$



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	2			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			780		nm
Forward Voltage	V_F	$I_F = 10\text{mA}$			1.3	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

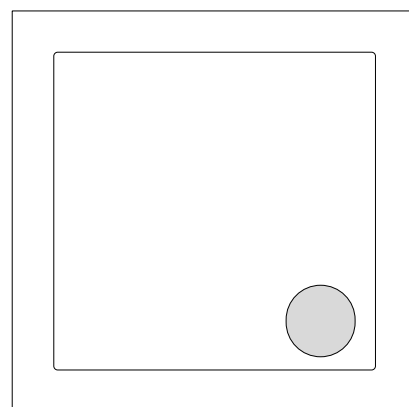
- PSD-2068068 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

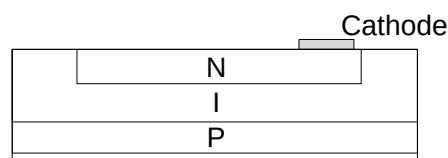
- Light Sensor, Laser Diode Power Control

Feature

- **Chip Size** : $680\mu\text{m} \times 680\mu\text{m} \pm 40\mu\text{m}$
- **Chip Thickness** : $400\mu\text{m} \pm 20\mu\text{m}$
- **Radiant Sensitivity Area** : $550\mu\text{m} \times 550\mu\text{m}$
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Anode) : Al
 - Bottom(Cathode) : Au
- **Bonding Pad Size**
 - Top(Anode) : $\Phi 150\mu\text{m}$



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	2			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			780		nm
Forward Voltage	V_F	$I_F = 10\text{mA}$			1.3	V
Dark Current	I_D	$V_R = 10\text{V}$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

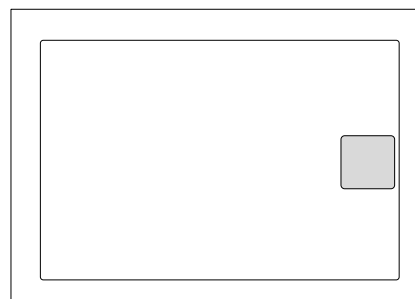
- PSD-2077A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

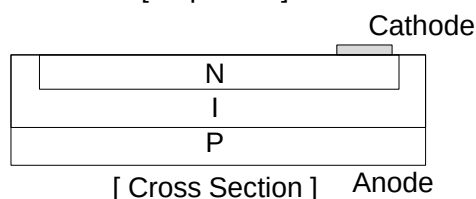
- Light Sensor

Feature

- **Chip Size** : 890 μ m X 640 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 770 μ m $\times$ 520 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	2.5			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

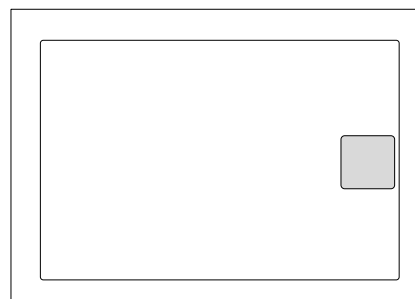
- PSD-2077 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

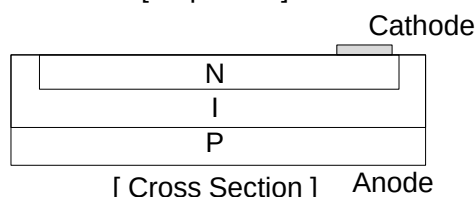
- Light Sensor

Feature

- **Chip Size** : 890 μ m X 640 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 770 μ m $\times$ 520 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section]

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	2.5			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

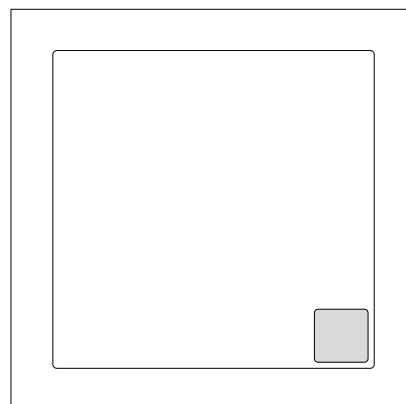
- PSD-2100A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

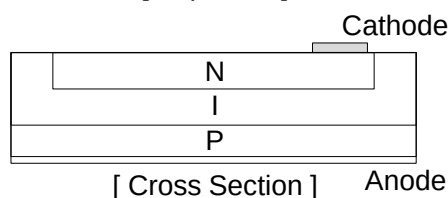
- Light Sensor

Feature

- **Chip Size** : 1000 μ m X 1000 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 880 μ m $\times$ 880 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 130 μ m



[Top View]



[Cross Section]

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Voltage	I _{SC}	Note(1)	5.5			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

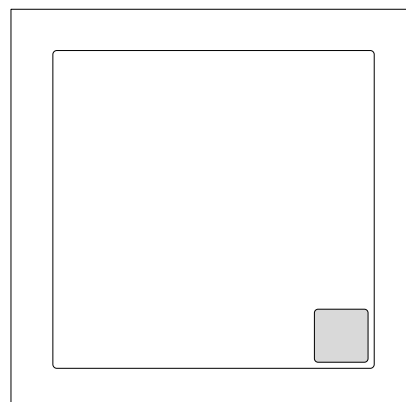
- PSD-2109A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

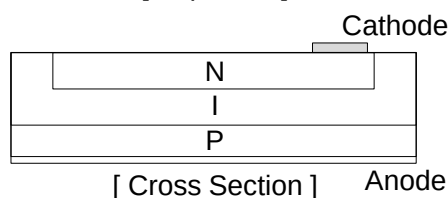
- Light Sensor

Feature

- **Chip Size** : 1090 μ m X 1090 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 970 μ m $\times$ 970 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	6			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

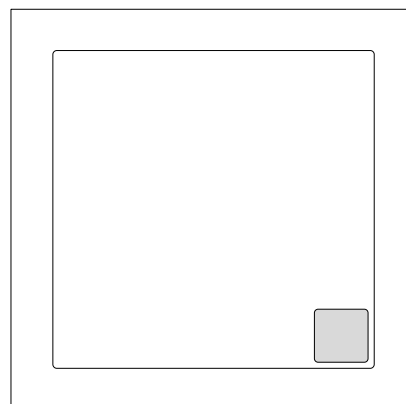
- PSD-2109 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

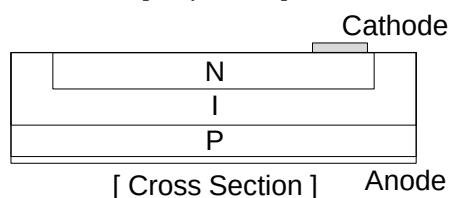
- Light Sensor

Feature

- **Chip Size** : 1090 μ m X 1090 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 970 μ m $\times$ 970 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	6			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

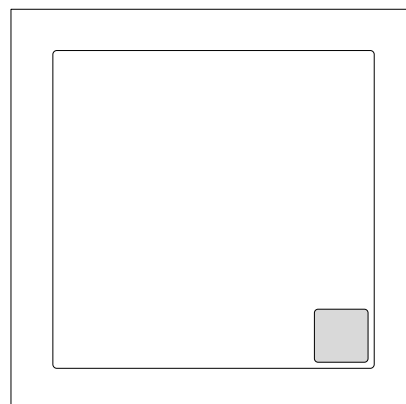
- PSD-2130A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

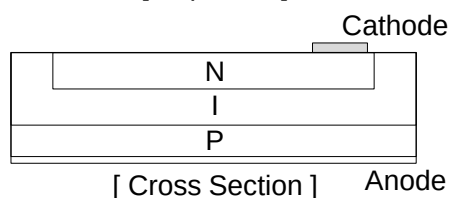
- Light Sensor

Feature

- **Chip Size** : 1300 μ m X 1300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1180 μ m $\times$ 1180 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	10			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

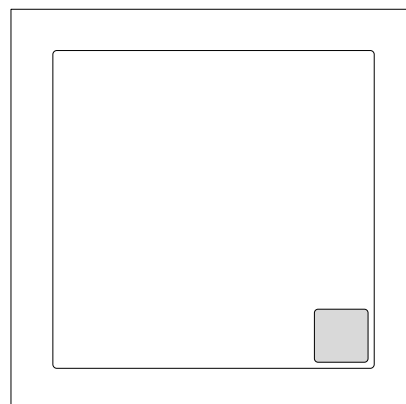
- PSD-2130 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

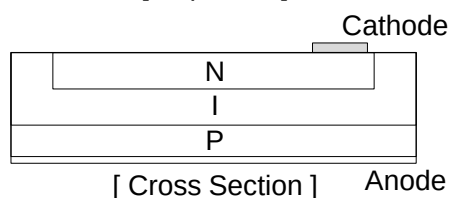
- Light Sensor

Feature

- **Chip Size** : 1300 μ m X 1300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1180 μ m $\times$ 1180 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	10			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

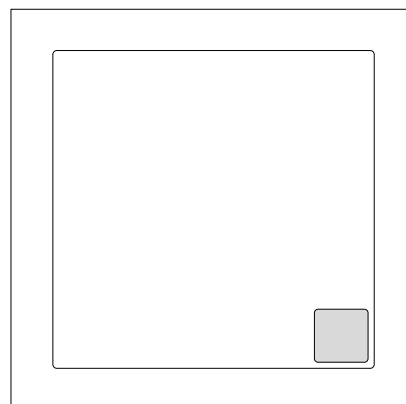
- PSD-2130 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

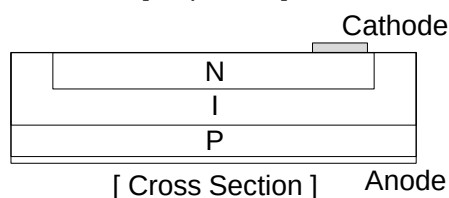
- Light Sensor

Feature

- **Chip Size** : 1300 μ m X 1300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 300 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1180 μ m $\times$ 1180 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	10			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 5mA			1.3	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

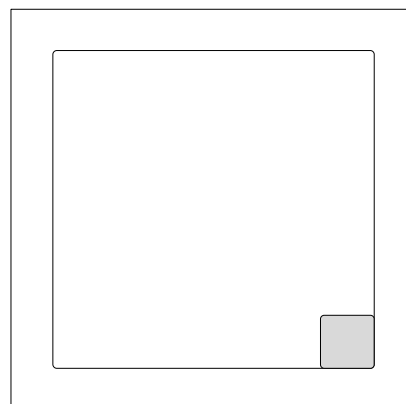
- PSD-2060A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

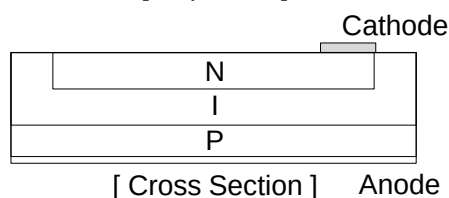
- Light Sensor

Feature

- **Chip Size** : 60(±1.5)mil X 60(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 55mil × 55mil±0.5mil
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	16			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

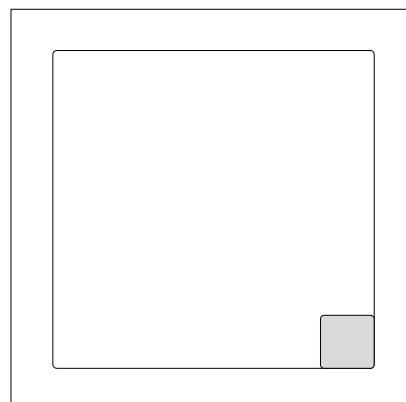
- PSD-2060 is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

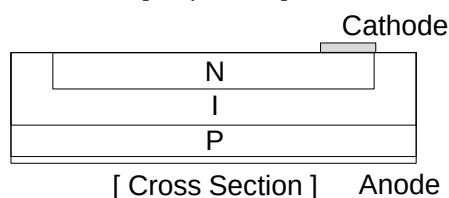
- Light Sensor

Feature

- **Chip Size** : 60(±1.5)mil X 60(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 55mil × 55mil±0.5mil
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	16			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

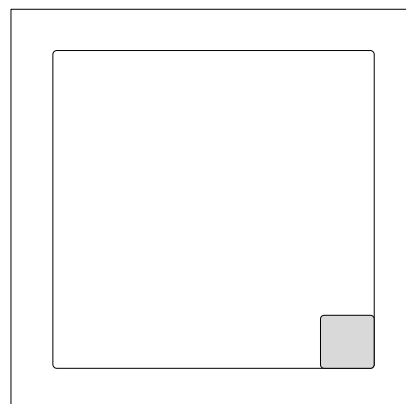
- PSD-2064A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

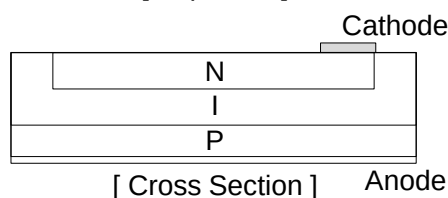
- Light Sensor

Feature

- **Chip Size** : 64(±1.5)mil X 64(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 58mil × 58mil±0.5mil
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	18			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

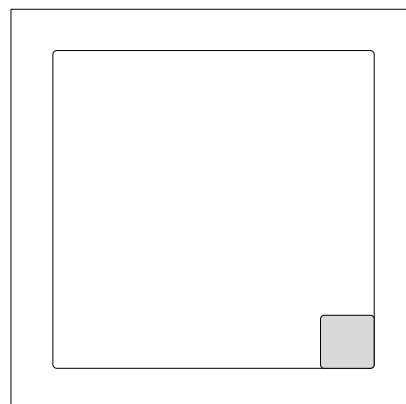
- PSD-2064 is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

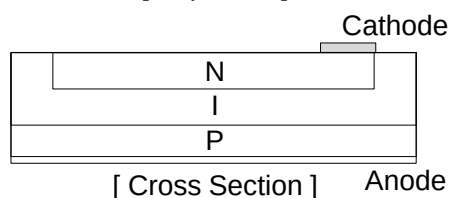
- Light Sensor

Feature

- **Chip Size** : 64(±1.5)mil X 64(±1.5)mil
- **Chip Thickness** : 16mil ±1mil
- **Radiant Sensitivity Area** : 58mil × 58mil±0.5mil
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : □6mil ± 0.4mil



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V_{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I_{SC}	Note(1)	18			μA
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V_F	$I_F = 1mA$			1.0	V
Dark Current	I_D	$V_R = 10V$			10	nA
Reverse Breakdown Voltage	BV_R	$I_R = 10\mu A$	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV_R	30	V
Junction Temperature	T_j	150	°C

Description

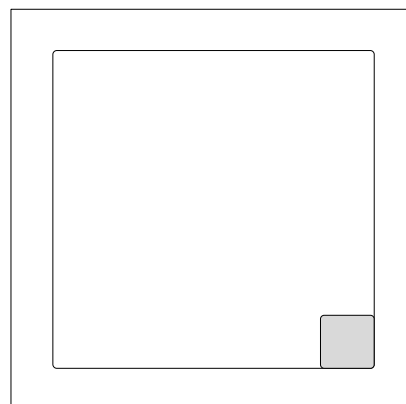
- PSD-2160A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

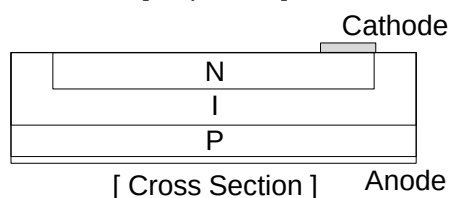
- Light Sensor

Feature

- **Chip Size** : 1600 μ m X 1600 μ m $\pm$ 40 μ m
- **Chip Thickness** : 300 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1440 μ m X 1440 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 6mil $\pm$ 0.4mil



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	18			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

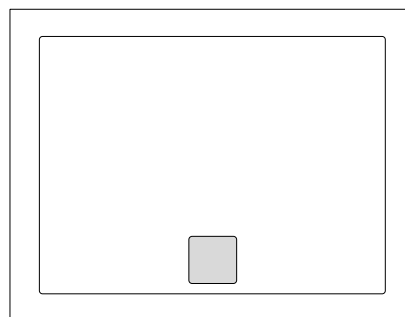
- PSD-21814A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

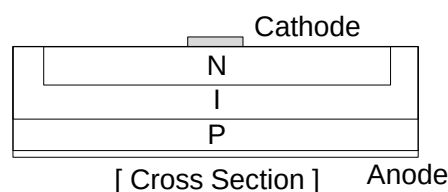
- Ambient Light Sensor

Feature

- **Chip Size** : 1800 μ m X 1400 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1680 μ m $\times$ 1280 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	18			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

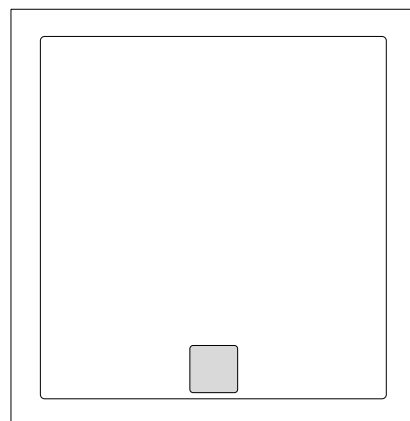
- PSD-2180A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

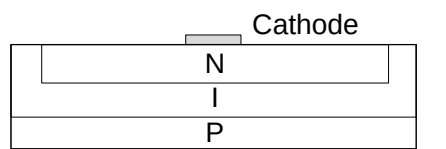
- Light Sensor

Feature

- **Chip Size** : 1800 μ m X 1800 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1680 μ m $\times$ 1680 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	24			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

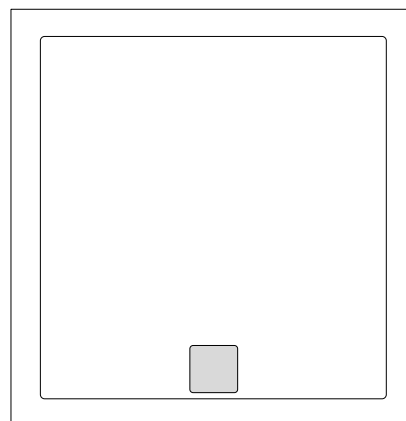
- PSD-2180A is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

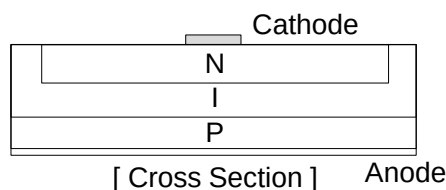
- Light Sensor

Feature

- **Chip Size** : 1800 μ m X 1800 μ m $\pm$ 40 μ m
- **Chip Thickness** : 300 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1680 μ m $\times$ 1680 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	24			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

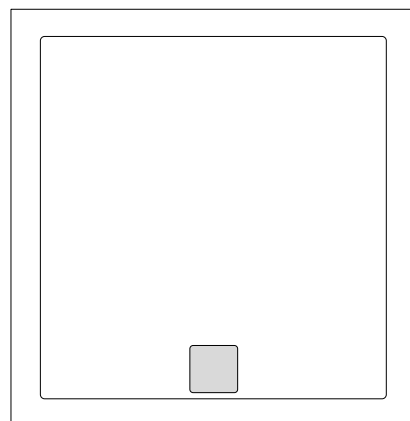
- PSD-2180 is a high speed and high sensitive PIN Photo Diode.
- Cathode is the bond pad on top.

Application

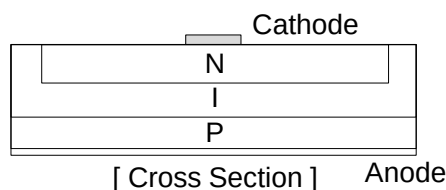
- Light Sensor

Feature

- **Chip Size** : 1800 μ m X 1800 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 1680 μ m $\times$ 1680 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	24			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

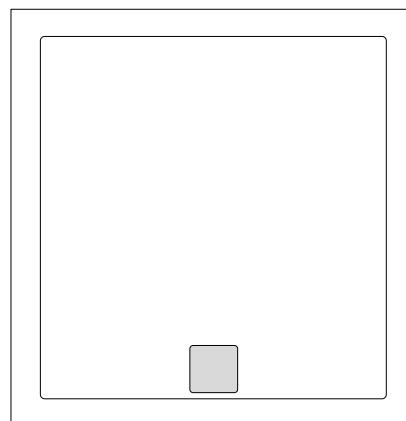
- PSD-2220A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

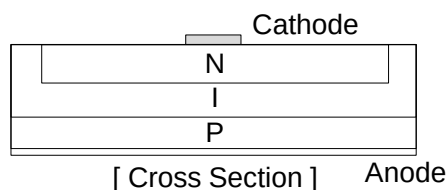
- Light Sensor

Feature

- **Chip Size** : 2200 μ m X 2200 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2080 μ m $\times$ 2080 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	36			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

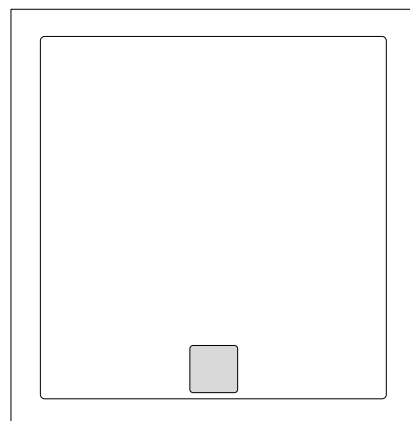
- PSD-2220 is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

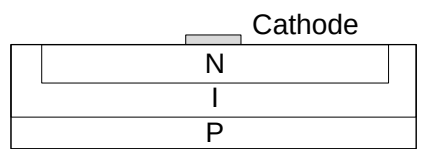
- Light Sensor

Feature

- **Chip Size** : 2200 μ m X 2200 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2080 μ m $\times$ 2080 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	36			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

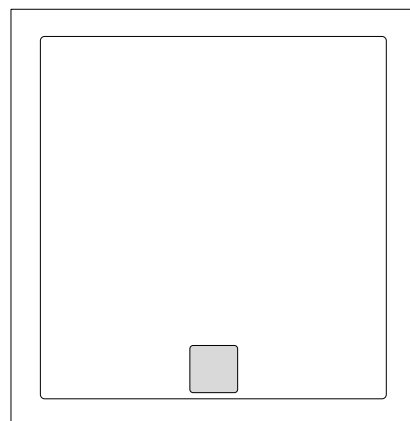
- PSD-2230A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

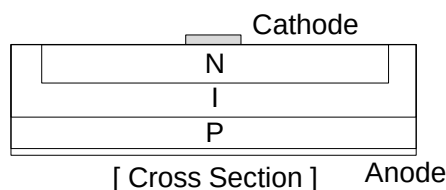
- Light Sensor

Feature

- **Chip Size** : 2300 μ m X 2300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2180 μ m $\times$ 2180 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	40			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

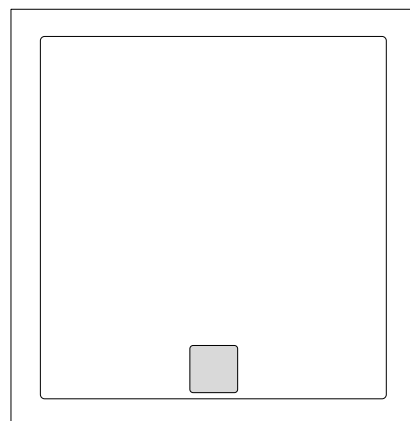
- PSD-2230 is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

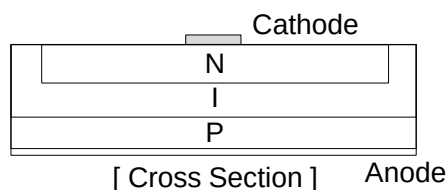
- Light Sensor

Feature

- **Chip Size** : 2300 μ m X 2300 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2180 μ m $\times$ 2180 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 150 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	40			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

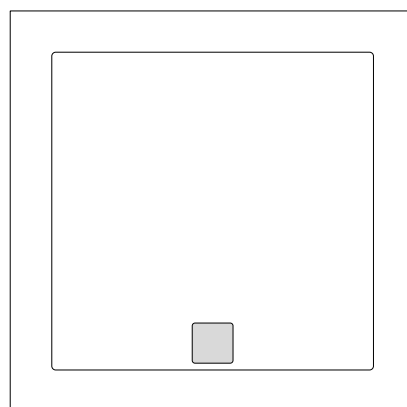
- PSD-2300A is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

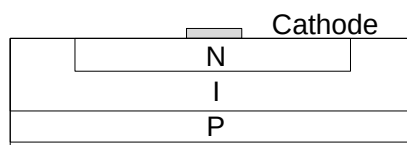
- Light Sensor

Feature

- **Chip Size** : 3000 μ m X 3000 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2850 μ m $\times$ 2850 μ m
- **Passivation** : Silicon Oxide
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 165 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	70			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Description

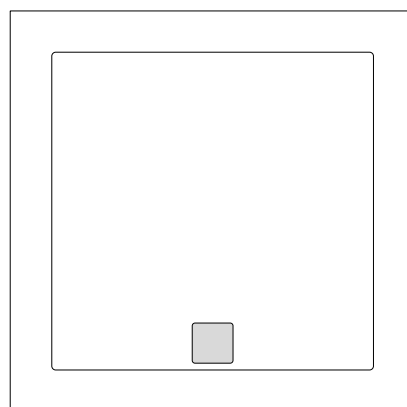
- PSD-2300 is a high speed and high sensitive PIN photodiode.
- Cathode is the bond pad on top.

Application

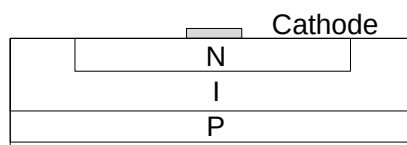
- Light Sensor

Feature

- **Chip Size** : 3000 μ m X 3000 μ m $\pm$ 40 μ m
- **Chip Thickness** : 400 μ m $\pm$ 20 μ m
- **Radiant Sensitivity Area** : 2850 μ m $\times$ 2850 μ m
- **Passivation** : Silicon Nitride
- **Metallization**
 - Top(Cathode) : Al
 - Bottom(Anode) : Au
- **Bonding Pad Size**
 - Top(Cathode) : $\square$ 165 μ m



[Top View]



[Cross Section] Anode

Electrical and Optical Characteristics (Ta=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Open Circuit Voltage	V _{OP}	Note(1)	0.3	0.32		V
Short Circuit Current	I _{SC}	Note(1)	70			μ A
Spectrum Sensitivity	λ		430 ~ 1100			nm
Peak Sensing Wavelength	λ_p			940		nm
Forward Voltage	V _F	I _F = 1mA			1.0	V
Dark Current	I _D	V _R = 10V			10	nA
Reverse Breakdown Voltage	BV _R	I _R = 10 μ A	30			V

Note(1) : Parallel light of 1,000 Lux illumination is applied by a Tungsten lamp of 2856k

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Maximum Rating	Unit
Reverse Breakdown Voltage	BV _R	30	V
Junction Temperature	T _j	150	°C

Custom Solutions

P&L Semi designs and manufactures customized silicon devices. Based on our experienced R&D systems, P&L Semi will specify, design and manufacture a device for your application.

Custom Device Manufacture Process

