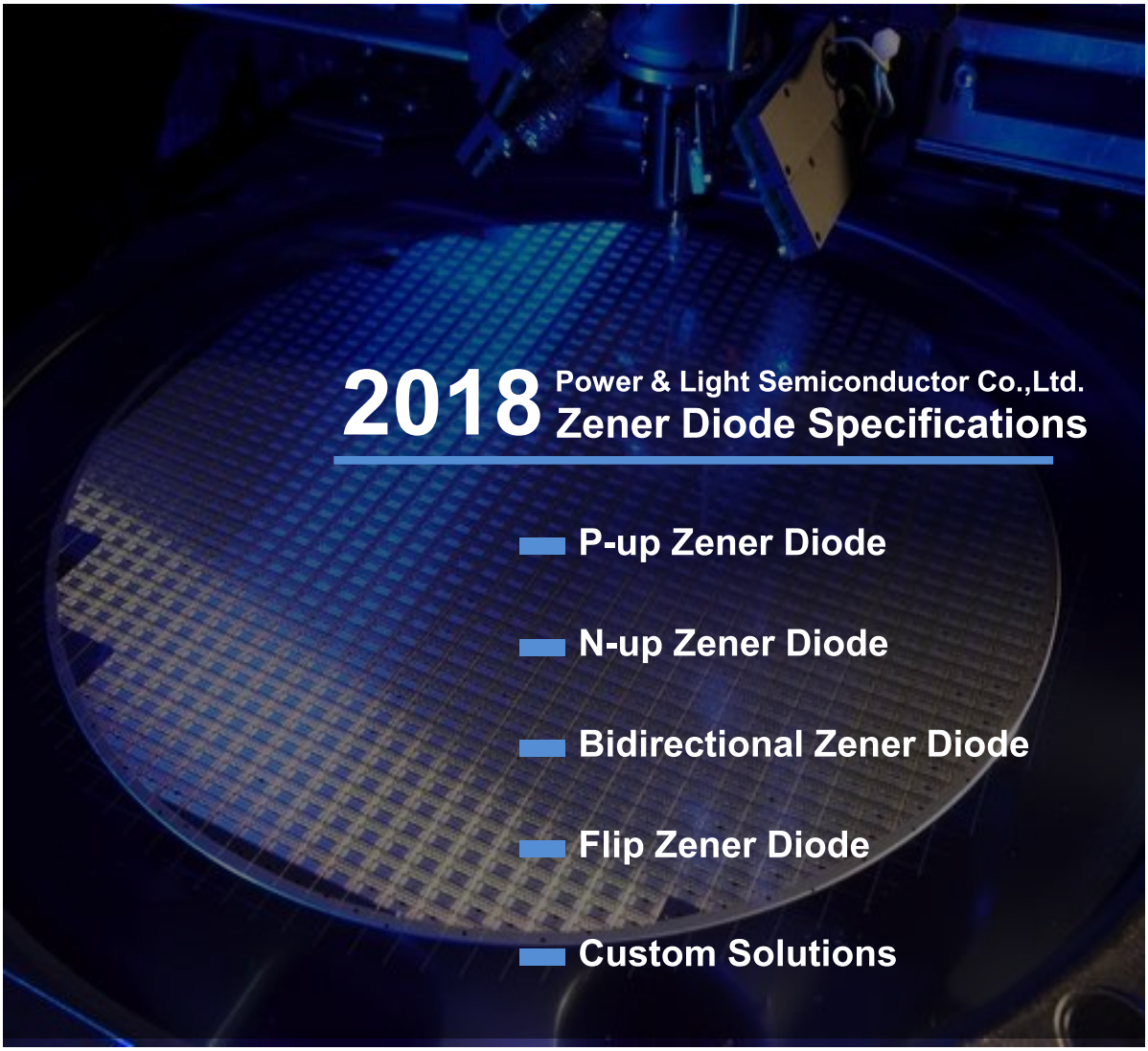

2018 Power & Light Semiconductor Co.,Ltd. Zener Diode Specifications

- P-up Zener Diode
- N-up Zener Diode
- Bidirectional Zener Diode
- Flip Zener Diode
- Custom Solutions

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Zener Diode List

Unidirectional Zener Diodes

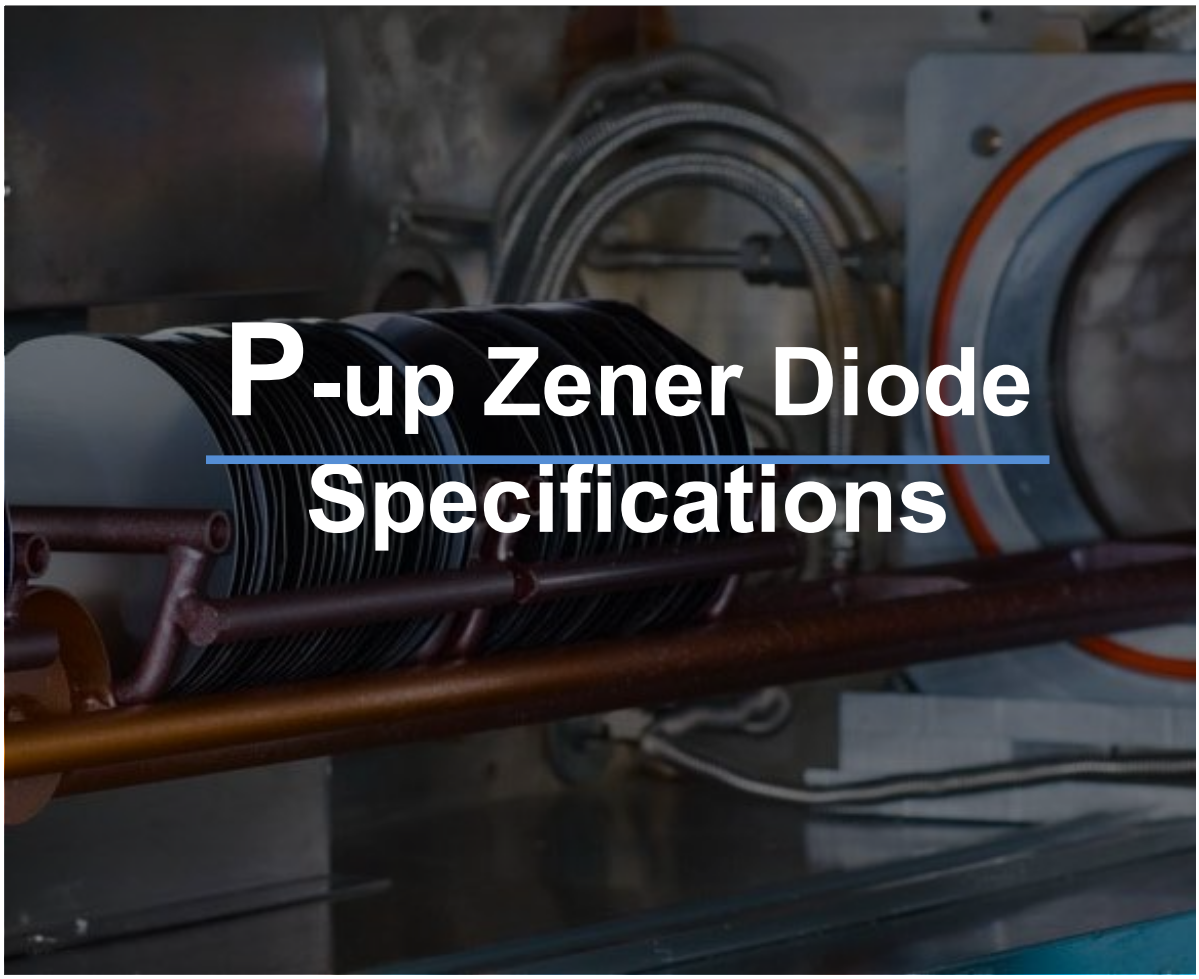
Product No.	Electrode	Die Size	Bonding PAD Size	Zener Voltage
	Common	[mm]	W x L[mm]	[V] (IR= 5mA)
PSZ-1017S	Cathode	0.150 x 0.150	0.120 x 0.120	7 / 8 / 12
PSZ-1017	Cathode	0.150 x 0.150	Ø 0.100	7 / 8 / 12
PSZ-1019	Cathode	0.170 x 0.170	Ø 0.090	6 / 7 / 12
PSZ-1021	Cathode	0.190 x 0.190	Ø 0.130	7 / 12 / 14
PSZ-1023	Cathode	0.210 x 0.210	Ø 0.150	7 / 8 / 12 / 30
PSZ-1026S	Cathode	0.240 x 0.240	0.180 x 0.180	7 / 12
PSZ-2017S	Anode	0.150 x 0.150	0.120 x 0.120	7 / 14
PSZ-2017	Anode	0.150 x 0.150	Ø 0.100	7 / 14
PSZ-2019	Anode	0.170 x 0.170	Ø 0.090	7 / 14
PSZ-2021	Anode	0.190 x 0.190	Ø 0.130	7 / 14
PSZ-2023	Anode	0.210 x 0.210	Ø 0.150	7 / 14
PSZ-2026S	Anode	0.240 x 0.240	0.180 x 0.180	7 / 14

Bidirectional Zener Diodes

Product No.	Electrode	Die Size	Bonding PAD Size	Zener Voltage
	Common	[mm]	W x L[mm]	[V] (IR= 5mA)
PSZ-1017B	N/P/N	0.150 x 0.150	0.120 x 0.120	7
PSZ-1021B	N/P/N	0.190 x 0.190	0.150 x 0.150	7
PSZ-1023B	N/P/N	0.210 x 0.210	0.160 x 0.160	7
PSZ-2021B	P/N/P	0.190 x 0.190	0.150 x 0.150	13
PSZ-1034D	P/N/P	0.320 x 0.320	0.116 x 0.265 (Dual Pad)	7
PSZ-2034D	N/P/N	0.320 x 0.320	0.116 x 0.265 (Dual Pad)	7

Flip Zener Diodes

Product No.	Electrode	Die Size	Bonding PAD Size	Zener Voltage
	Common	[mm]	W x L[mm]	[V] (IR= 5mA)
PSZ-1044023F	P/N/P	0.420 x 0.210	0.070 x 0.100 (Dual Pad)	8 / 20
PSZ-1049023F	P/N/P	0.470 x 0.210	0.100 x 0.110 (Dual Pad)	8 / 20
PSZ-1039039F	P/N/P	0.375 x 0.375	0.090 x 0.265 (Dual Pad)	8 / 20
PSZ-1056026F	P/N/P	0.540 x 0.240	0.200 x 0.200 (Dual Pad)	20



P-up Zener Diode Specifications

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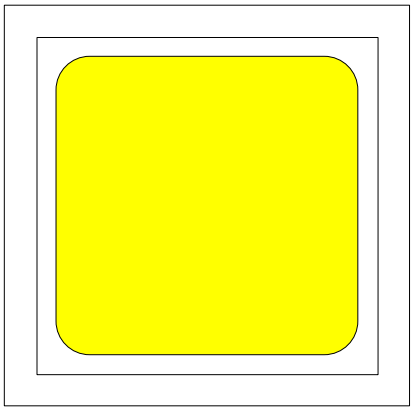
Silicon Zener Diode
PSZ-1017S-7V

Description

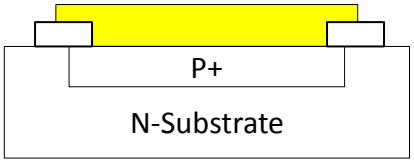
- PSZ-1017S-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

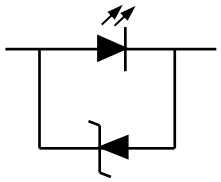


[Cross Section]

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 120㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-1017S-8V

Description

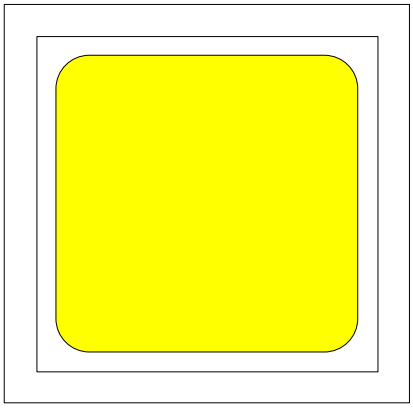
- PSZ-1017S-8V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

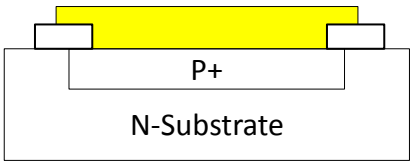
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 120㎛

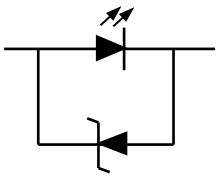


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	7	8	10	V
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

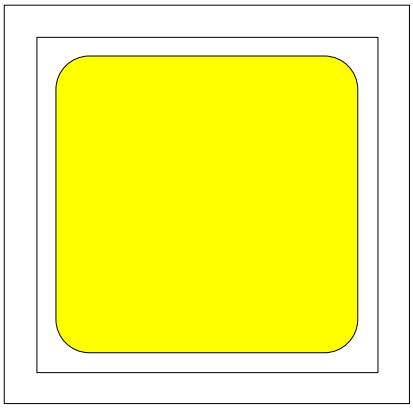
Silicon Zener Diode
PSZ-1017S-12V

Description

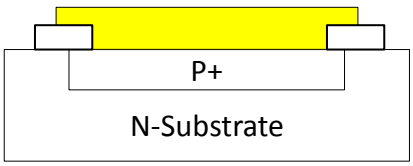
- PSZ-1017S-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

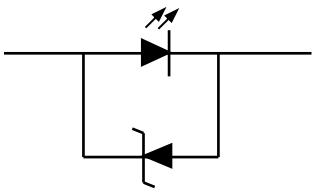


[Cross Section]

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 120㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

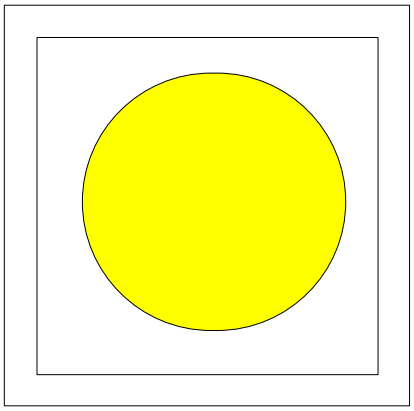
Silicon Zener Diode
PSZ-1017-7V

Description

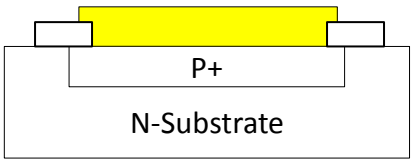
- PSZ-1017-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

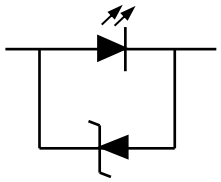


[Cross Section]

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 100㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-1017-8V

Description

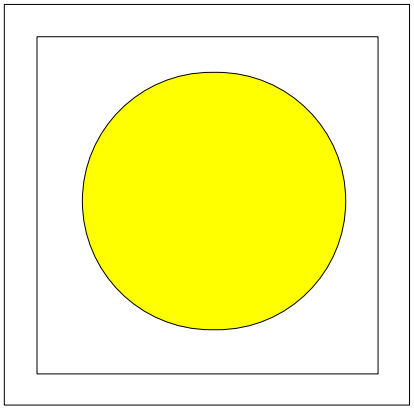
- PSZ-1017-8V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

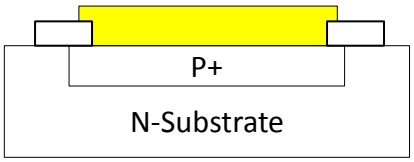
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 100㎛

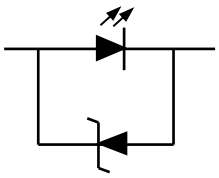


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	7	8	10	V
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

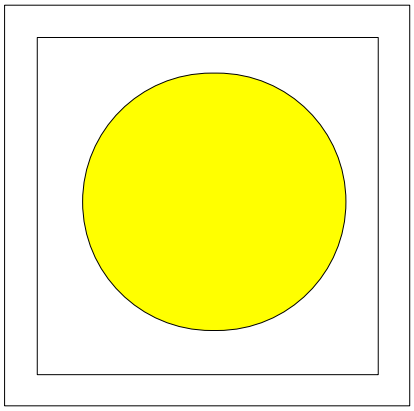
Silicon Zener Diode
PSZ-1017-12V

Description

- PSZ-1017-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

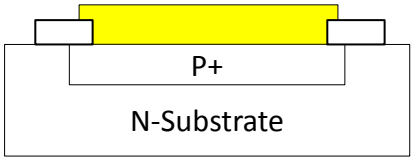
- **ESD & Surge Protector for LEDs**



[Top View]

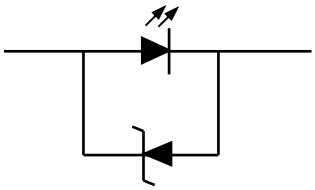
Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 100㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-1019-6V

Description

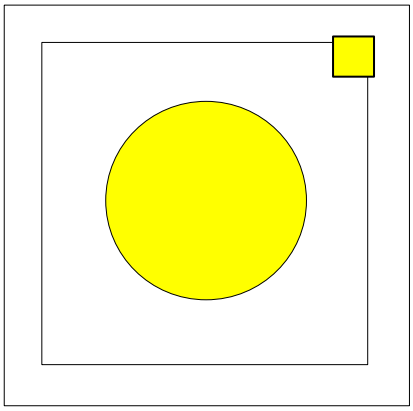
- PSZ-1019-6V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

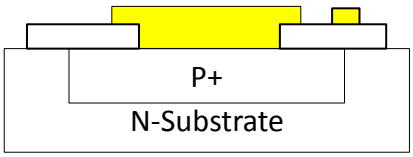
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 170(±20)㎛ X 170(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 100㎛

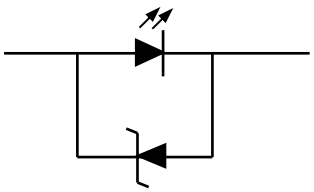


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	5.5	6.5	7.5	V
Reverse Current	I_R	V_R = 3V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

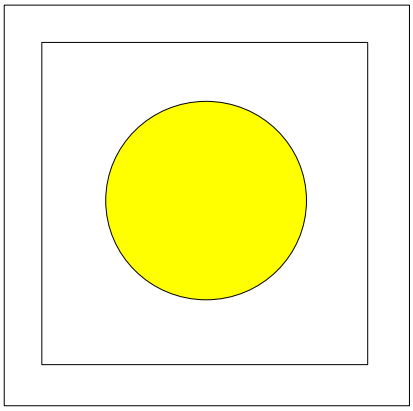
Silicon Zener Diode
PSZ-1019-7V

Description

- PSZ-1019-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

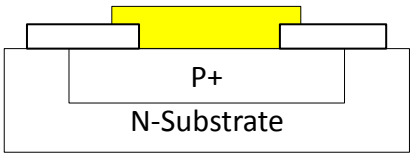
- **ESD & Surge Protector for LEDs**



[Top View]

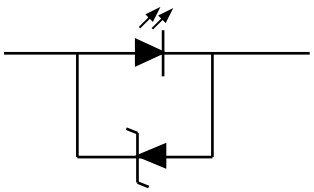
Feature

- **Chip Size** : 170(±20)㎛ X 170(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 90㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

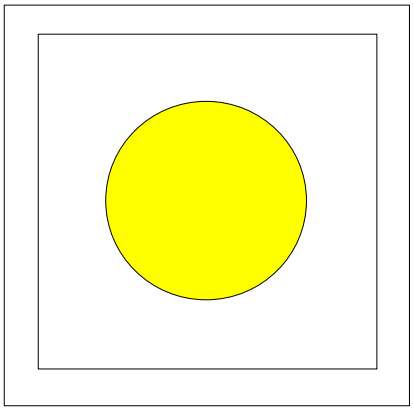
Silicon Zener Diode
PSZ-1019-12V

Description

- PSZ-1019-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

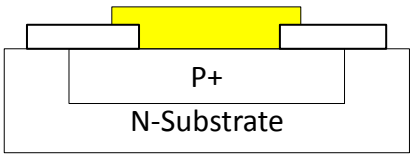
- **ESD & Surge Protector for LEDs**



[Top View]

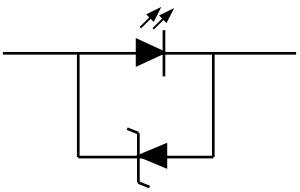
Feature

- **Chip Size** : 170(±20)㎛ X 170(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 90㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

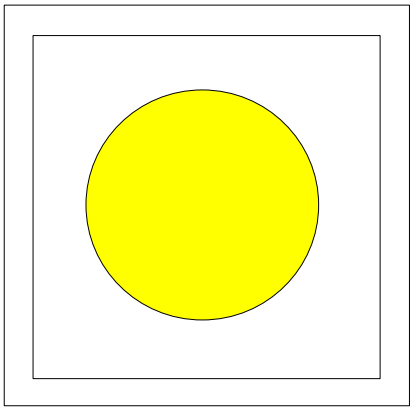
Silicon Zener Diode
PSZ-1021-7V

Description

- PSZ-1021-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

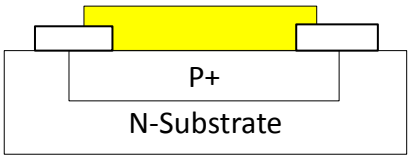
- **ESD & Surge Protector for LEDs**



[Top View]

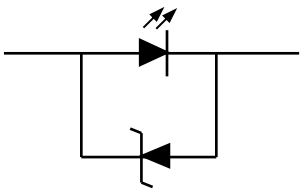
Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 130㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

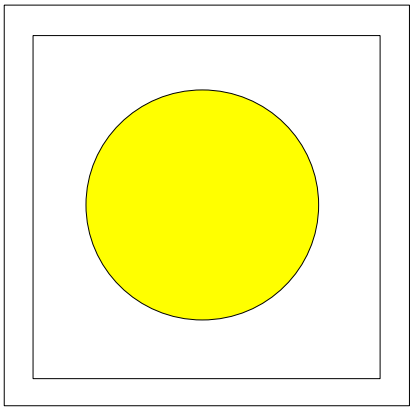
Silicon Zener Diode
PSZ-1021-12V

Description

- PSZ-1021-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

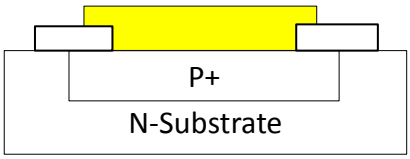
- **ESD & Surge Protector for LEDs**



[Top View]

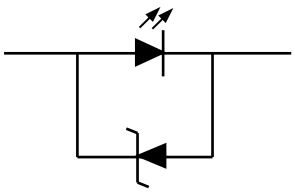
Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 130㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

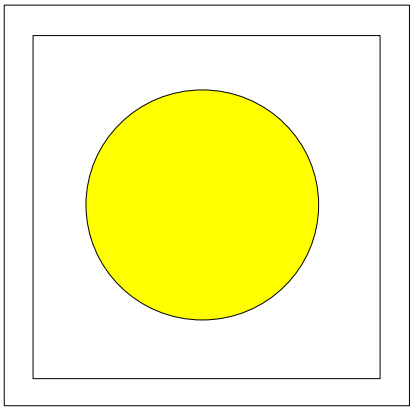
Silicon Zener Diode
PSZ-1021-14V

Description

- PSZ-1021-14V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

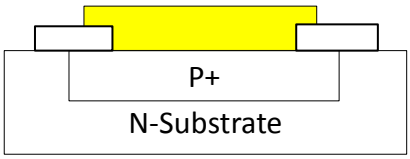
- **ESD & Surge Protector for LEDs**



[Top View]

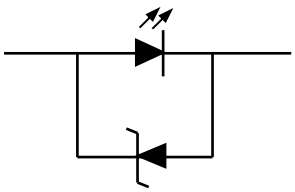
Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 130㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

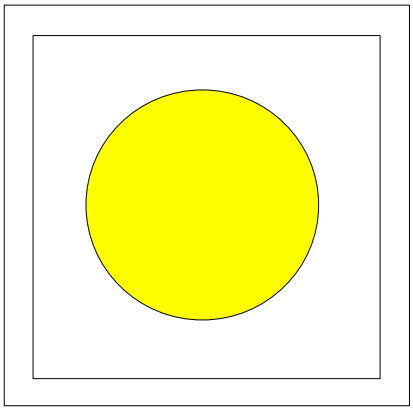
Silicon Zener Diode
PSZ-1023-7V

Description

- PSZ-1023-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

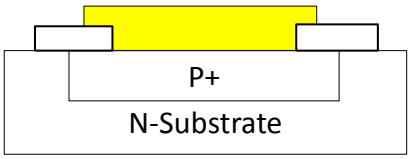
- **ESD & Surge Protector for LEDs**



[Top View]

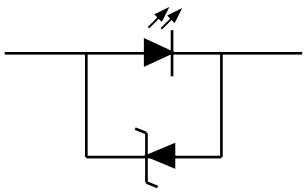
Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 150㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

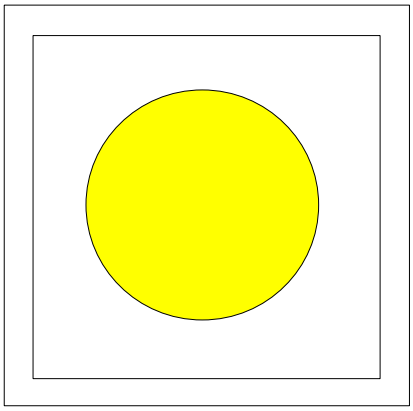
Silicon Zener Diode
PSZ-1023-8V

Description

- PSZ-1023-8V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

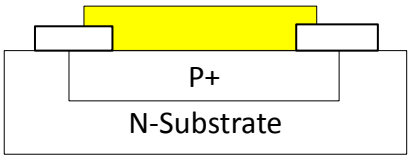
- **ESD & Surge Protector for LEDs**



[Top View]

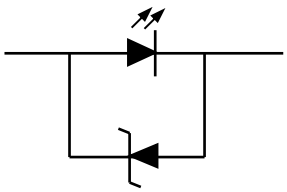
Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 150㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	7	8	10	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

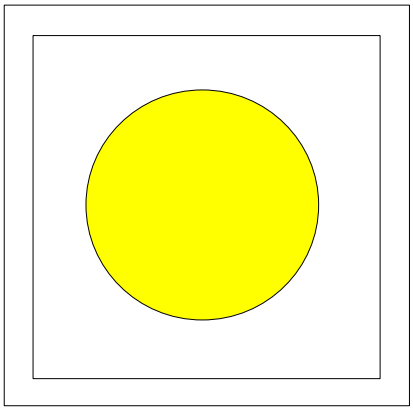
Silicon Zener Diode
PSZ-1023-12V

Description

- PSZ-1023-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

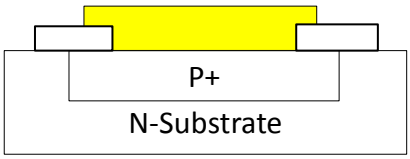
- **ESD & Surge Protector for LEDs**



[Top View]

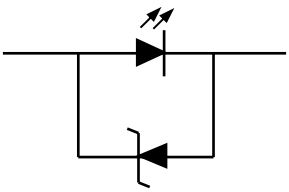
Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 150㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

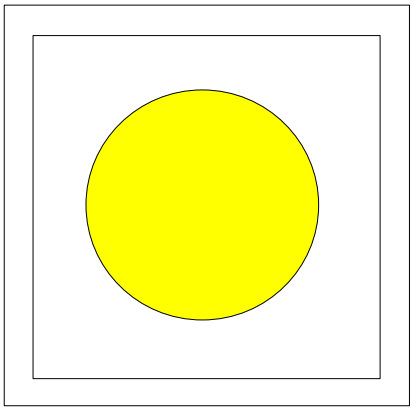
Silicon Zener Diode
PSZ-1023-30V

Description

- PSZ-1023-30V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

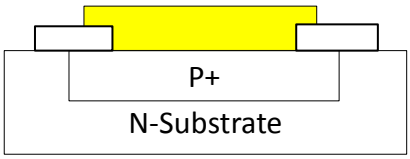
- **ESD & Surge Protector for LEDs**



[Top View]

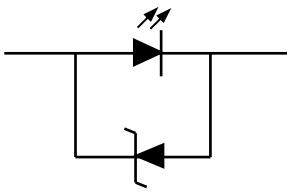
Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : Φ 150㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	25	30	35	V
Reverse Current	I_R	V_R = 20V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-1026S-7V

Description

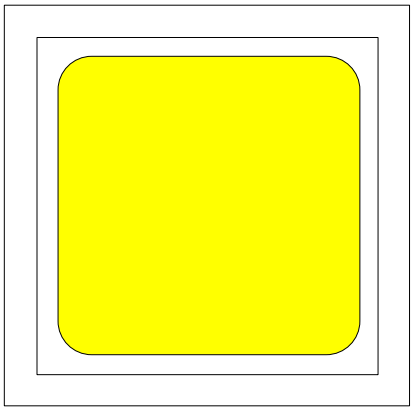
- PSZ-1026S-7V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

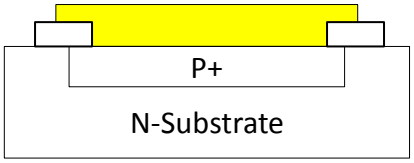
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 240(±20)㎛ X 240(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 180㎛

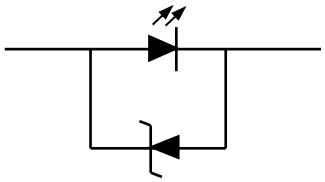


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

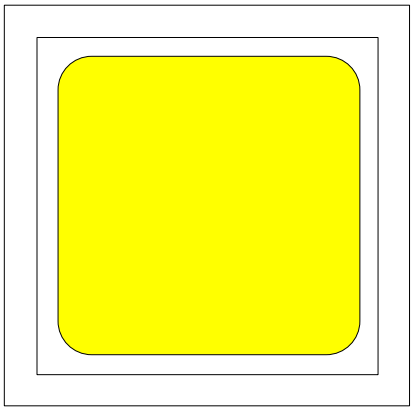
Silicon Zener Diode
PSZ-1026S-12V

Description

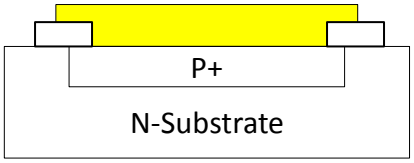
- PSZ-1026S-12V is silicon planar zener diode.
- Common cathode, anode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

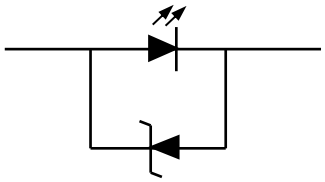


[Cross Section]

Feature

- **Chip Size** : 240(±20)㎛ X 240(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Cathode
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 180㎛

Schematic Diagram

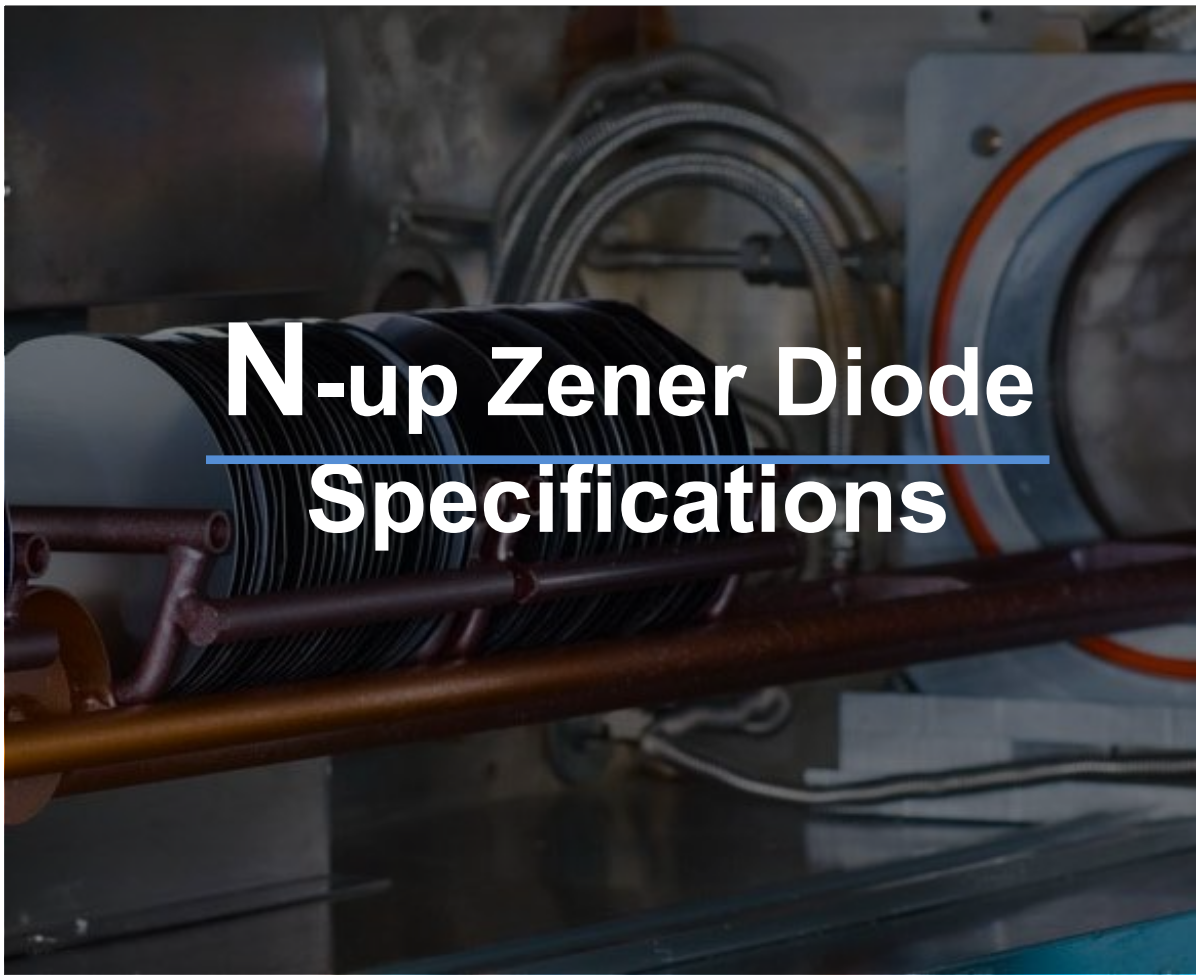


Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	10	12	14	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃



N-up Zener Diode Specifications

P&L SEMI
Power and Lighting Semiconductor

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

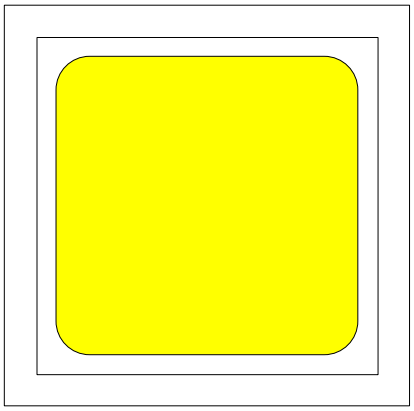
Silicon Zener Diode
PSZ-2017S-7V

Description

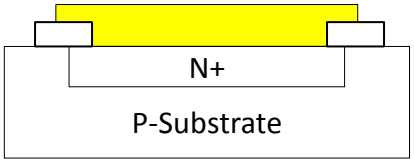
- PSZ-2017S-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

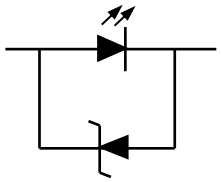


[Cross Section]

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : □ 120㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2017S-14V

Description

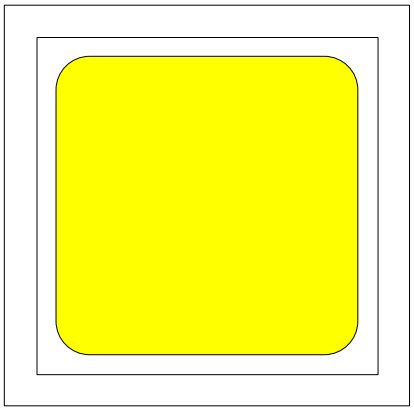
- PSZ-2017S-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

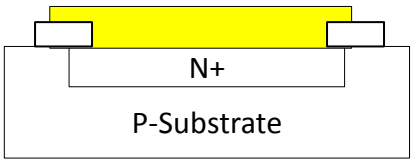
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : □ 120㎛

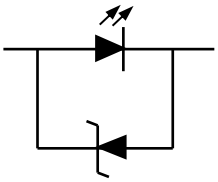


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

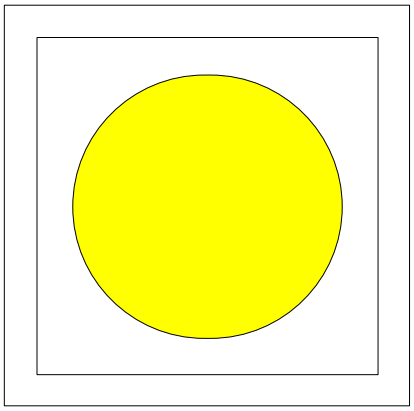
Silicon Zener Diode
PSZ-2017-7V

Description

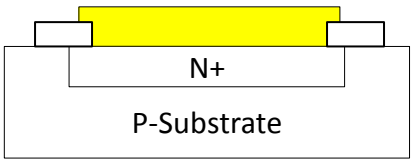
- PSZ-2017-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

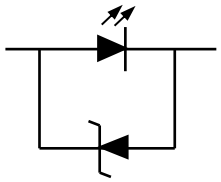


[Cross Section]

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 100㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2017-14V

Description

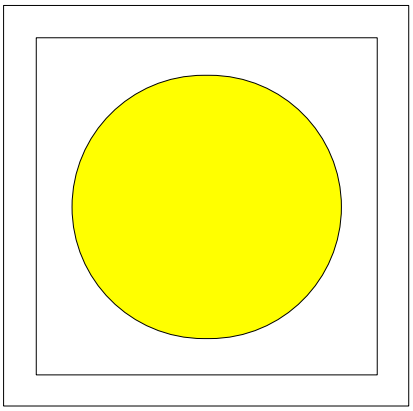
- PSZ-2017-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

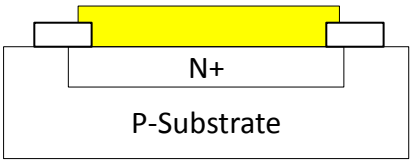
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 100㎛

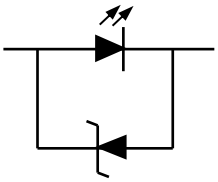


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2019-7V

Description

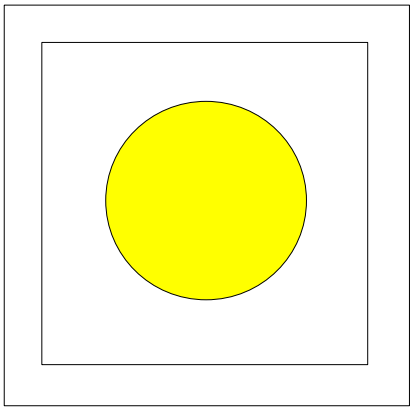
- PSZ-2019-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

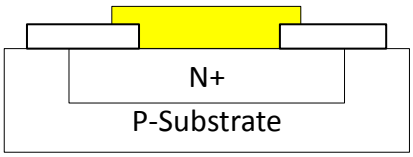
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 170(±20)㎛ X 170(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 90㎛

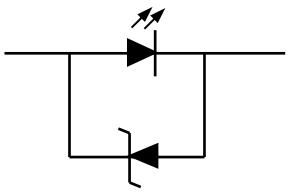


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2019-14V

Description

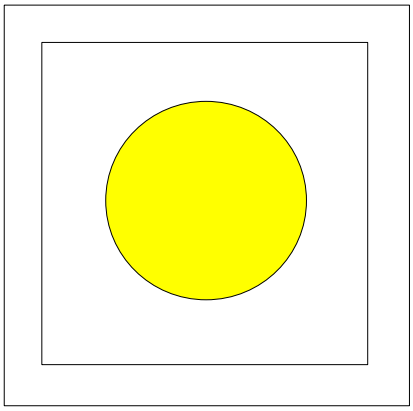
- PSZ-2019-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

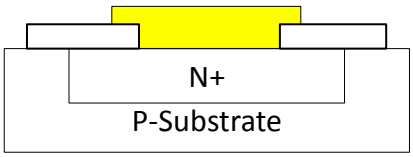
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 170(±20)㎛ X 170(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 90㎛

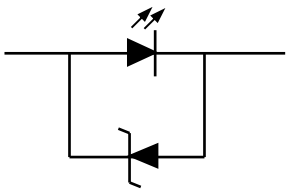


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

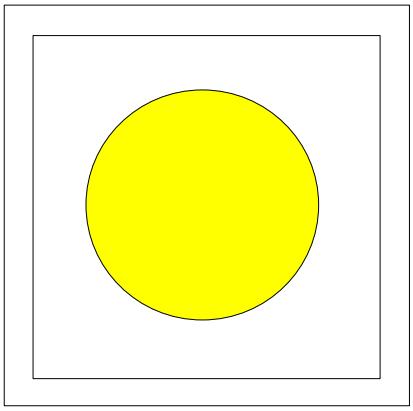
Silicon Zener Diode
PSZ-2021-7V

Description

- PSZ-2021-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

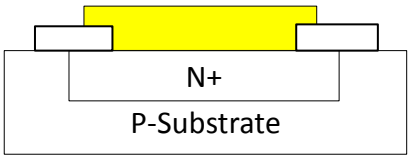
- **ESD & Surge Protector for LEDs**



[Top View]

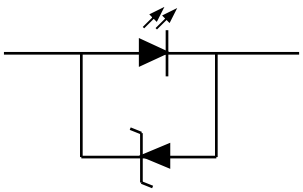
Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 130㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

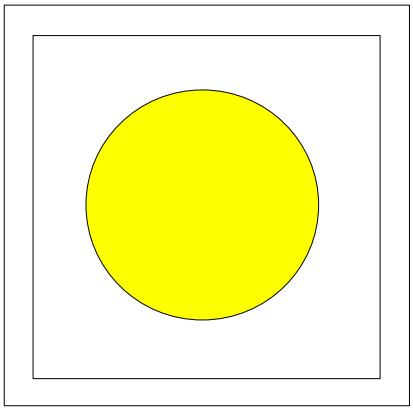
Silicon Zener Diode
PSZ-2021-14V

Description

- PSZ-2021-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

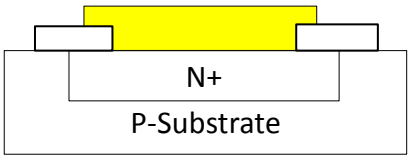
- **ESD & Surge Protector for LEDs**



[Top View]

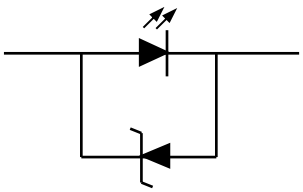
Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 130㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

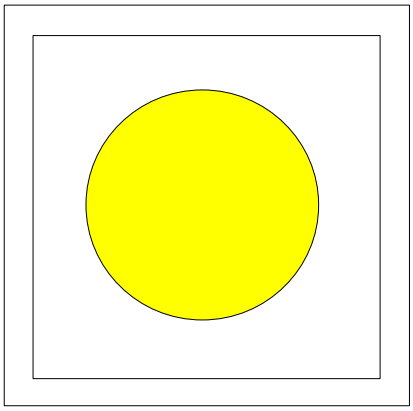
Silicon Zener Diode
PSZ-2023-7V

Description

- PSZ-2023-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

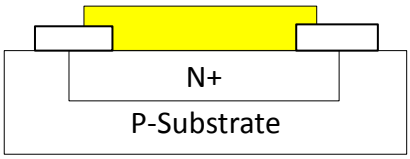
- **ESD & Surge Protector for LEDs**



[Top View]

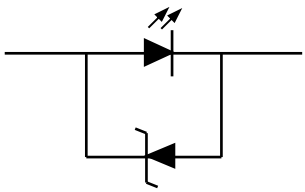
Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 150㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2023-14V

Description

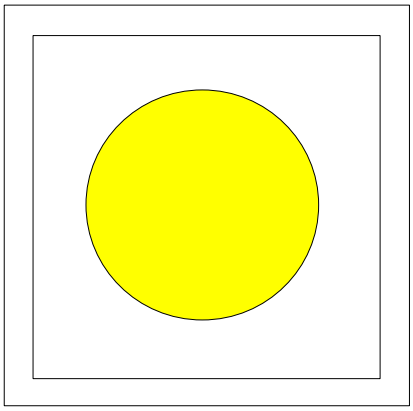
- PSZ-2023-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

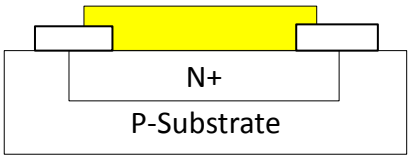
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : Φ 150㎛

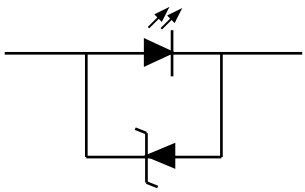


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

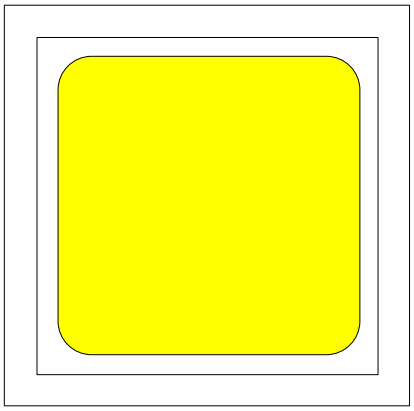
Silicon Zener Diode
PSZ-2026S-7V

Description

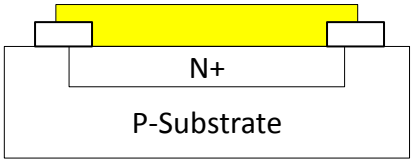
- PSZ-2026S-7V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

- **ESD & Surge Protector for LEDs**



[Top View]

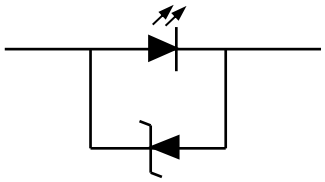


[Cross Section]

Feature

- **Chip Size** : 240(±20)㎛ X 240(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : □ 180㎛

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	6	7	9	V
Reverse Current	I_R	V_R = 4V			0.1	㎂

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Silicon Zener Diode
PSZ-2026S-14V

Description

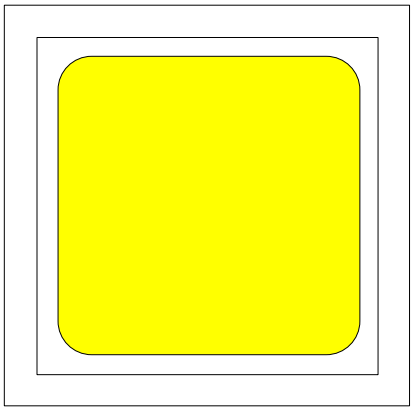
- PSZ-2026S-14V is silicon planar zener diode.
- Common anode, cathode is the bond pad on top.

Application

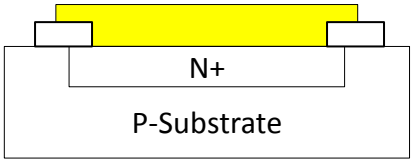
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 240(±20)㎛ X 240(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Common Anode
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : □ 180㎛

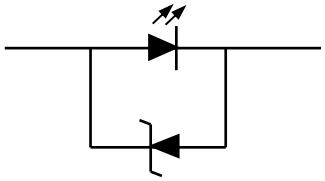


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 5mA	0.7	0.9	1.2	V
Zener Voltage	V_Z	I_Z = 5mA	12	14	16	V
Reverse Current	I_R	V_R = 8V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Bidirection Zener Diode Specifications

P&L SEMI
Power and Lighting Semiconductor

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

Silicon Bidirectional Zener Diode
PSZ-1017B-7V

Description

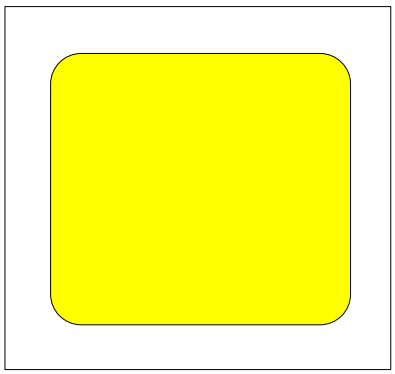
- PSZ-1017B-7V is silicon planar zener diode.
- $V_{Z(F)}$ means Zener voltage on forward bias.

Application

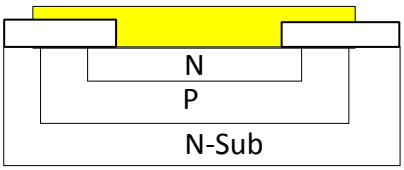
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 150(±20)㎛ X 150(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Vertical N/P/N
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 115㎛

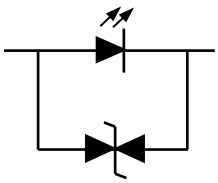


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	4.5	5.5	7	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	5	6.5	8	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Bidirectional Zener Diode
PSZ-1021B-7V

Description

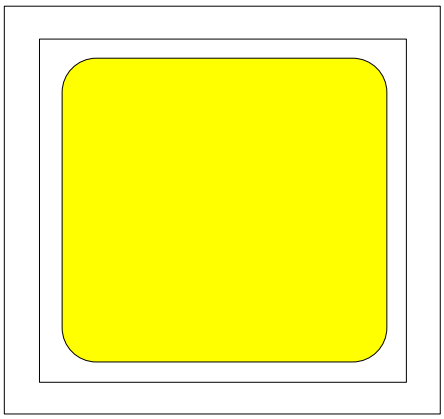
- PSZ-1021B-7V is silicon planar zener diode.
- $V_{Z(F)}$ means Zener voltage on forward bias.

Application

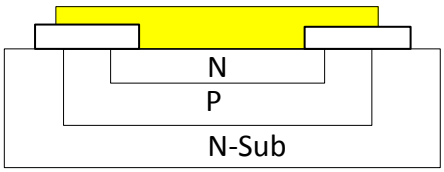
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Vertical N/P/N
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 150㎛

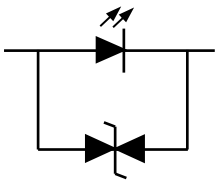


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	4.5	5.5	7	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	5	6.5	8	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Bidirectional Zener Diode
PSZ-1023B-7V

Description

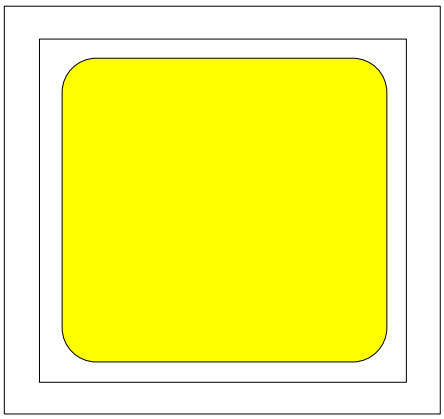
- PSZ-1023B-7V is silicon planar zener diode.
- $V_{Z(F)}$ means Zener voltage on forward bias.

Application

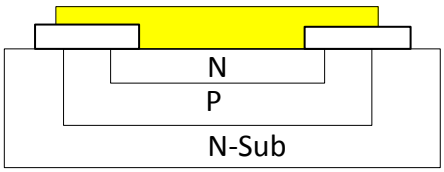
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 210(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Vertical N/P/N
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Au
- **Bonding Pad Size**
  - Top(Anode) : □ 160㎛

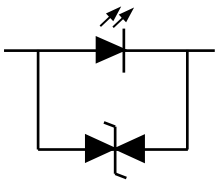


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	4.5	5.5	7	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	5	6.5	8	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Silicon Bidirectional Zener Diode
PSZ-2021B-13V

Description

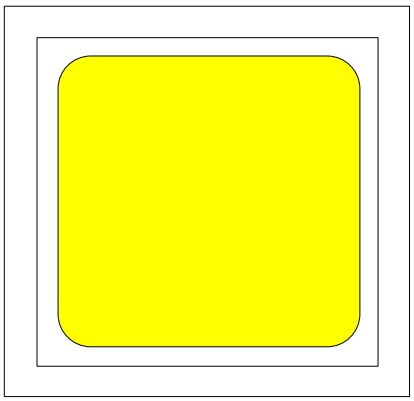
- PSZ-2021B-13V is silicon planar zener diode.
- $V_{Z(F)}$ means Zener voltage on forward bias.

Application

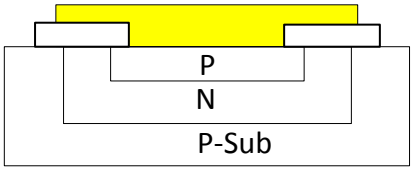
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 190(±20)㎛ X 190(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Vertical P/N/P
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Au
- **Bonding Pad Size**
  - Top(Cathode) : □ 150㎛

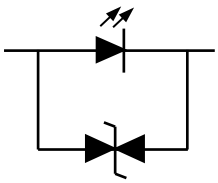


[Top View]



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	7	-	13	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	10	-	17	V
Forward Current	I_F	V_F = 5V	-	-	0.1	μA
Reverse Current	I_R	V_R = 8V	-	-	0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

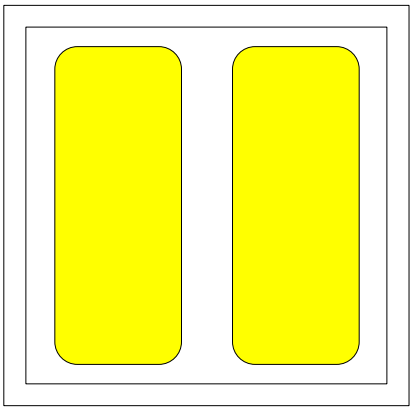
Silicon Bidirectional Zener Diode
PSZ-1034D-7V

Description

- PSZ-1034D-7V is silicon planar zener diode.
- Lateral P/N/P type. Isolated back side.

Application

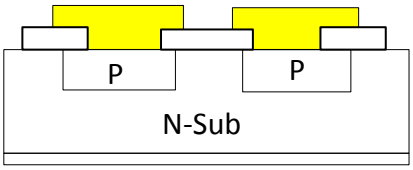
- **ESD & Surge Protector for LEDs**



[Top View]

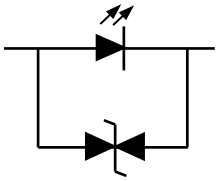
Feature

- **Chip Size** : 320(±20)㎛ X 320(±20)㎛
- **Chip Thickness** : 120㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - Top(Anode) : Au
  - Bottom(Cathode) : Isolation (SiO2)
- **Bonding Pad Size**
  - Top(Anode) : □ 115㎛ X 265㎛



[Cross Section]

Schematic Diagram



Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	6	7.5	9	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	6	7.5	9	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

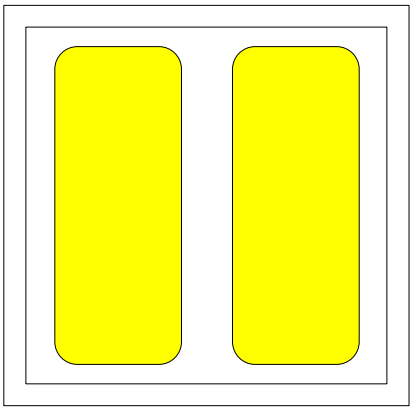
Silicon Bidirectional Zener Diode
PSZ-2034D-7V

Description

- PSZ-2034D-7V is silicon planar zener diode.
- Lateral N/P/N type. Isolated back side.

Application

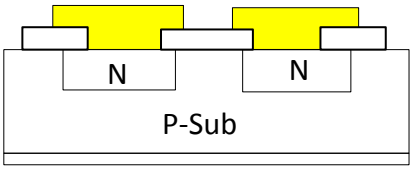
- **ESD & Surge Protector for LEDs**



[Top View]

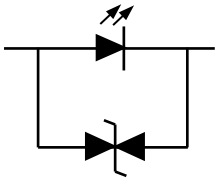
Feature

- **Chip Size** : 320(±20)㎛ X 320(±20)㎛
- **Chip Thickness** : 120㎛ ± 15㎛
- **Structure** : Lateral N/P/N
- **Metallization**
  - Top(Cathode) : Au
  - Bottom(Anode) : Isolation (SiO2)
- **Bonding Pad Size**
  - Top(Cathode) : □ 115㎛ X 265㎛



[Cross Section]

Schematic Diagram

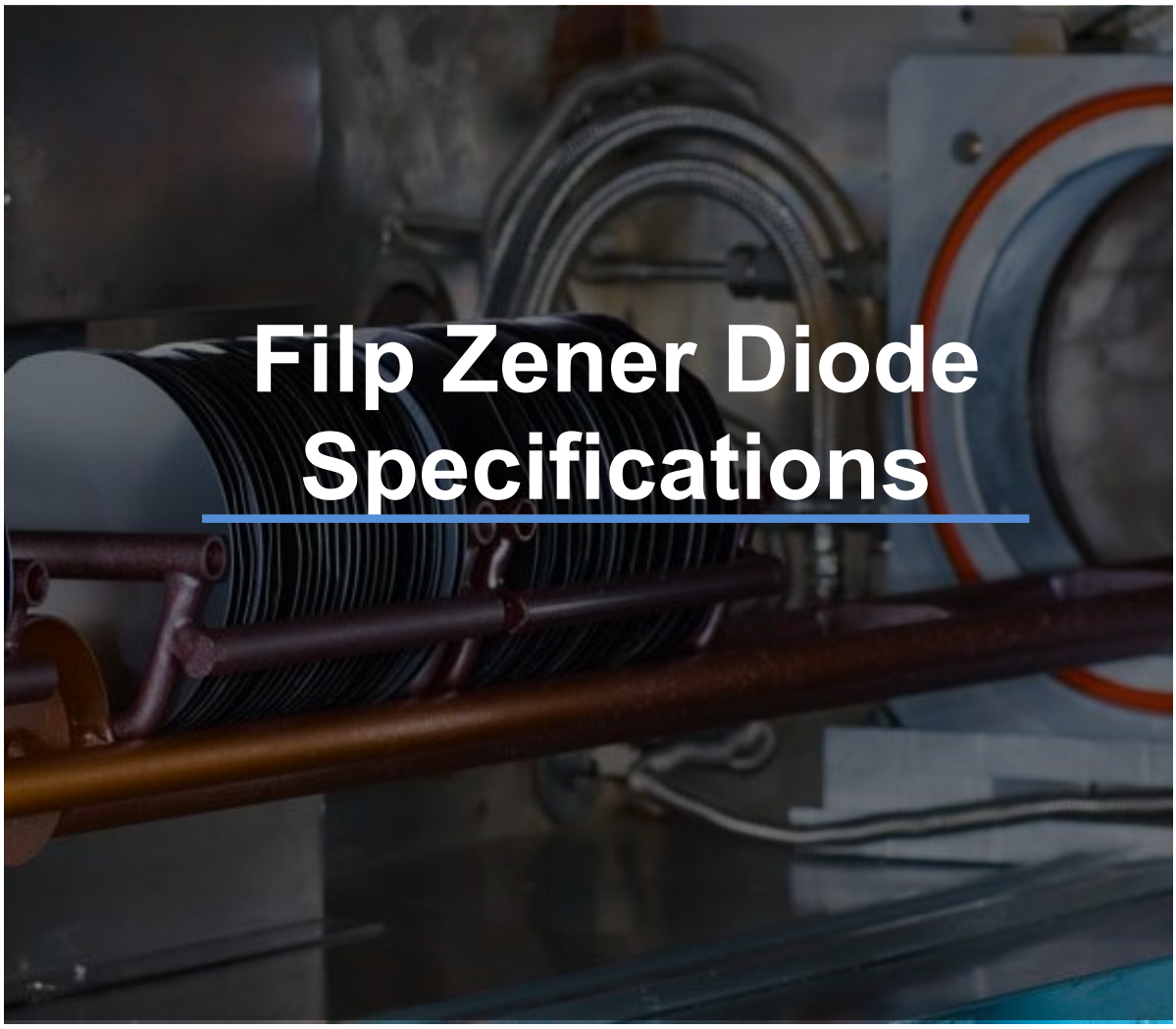


Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	6	7.5	9	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	6	7.5	9	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃



Filp Zener Diode Specifications

P&L SEMI
Power and Lighting Semiconductor

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

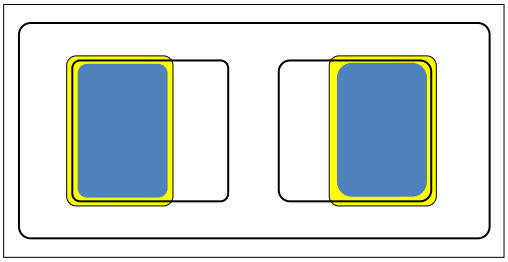
Silicon Flip Zener Diode
PSZ-1044023F-8V

Description

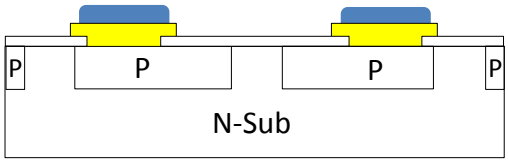
- PSZ-1044023F-8V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

- **ESD & Surge Protector for LEDs**



[Top View]



[Cross Section]

Feature

- **Chip Size** : 420(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : None
- **Bonding Pad Size**
  - Diffusion Barrier : □ 90㎛ X 120㎛
  - Solder : □ 70㎛ X 100㎛
  - Distance of Pad to Pad : 130㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	7	8	10	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	7	8	10	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Flip Zener Diode
PSZ-1044023FA-8V

Description

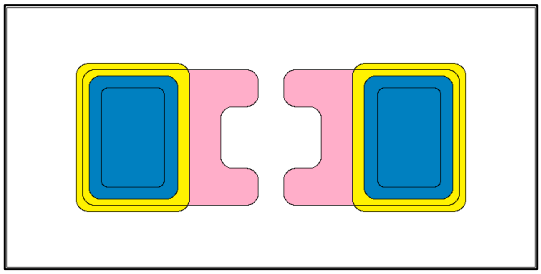
- PSZ-1044023FA-8V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

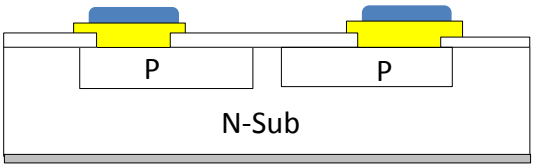
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 420(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al



[Top View]



[Cross Section]

- **Bonding Pad Size**
  - Diffusion Barrier : □ 90㎛ X 120㎛
  - Solder : □ 70㎛ X 100㎛
  - Distance of Pad to Pad : 130㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	7	8	10	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	7	8	10	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Flip Zener Diode
PSZ-1044023F-20V

Description

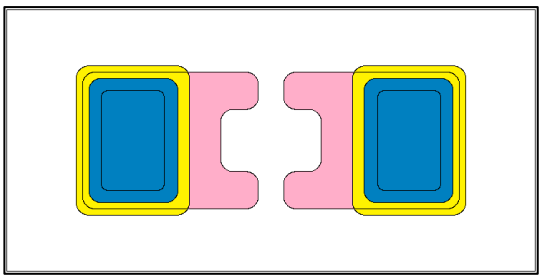
- PSZ-1044023F-20V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

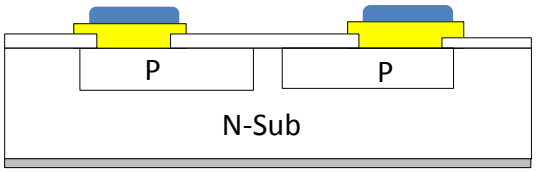
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 420(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al



[Top View]



[Cross Section]

- **Bonding Pad Size**
  - Diffusion Barrier : □ 90㎛ X 120㎛
  - Solder : □ 70㎛ X 100㎛
  - Distance of Pad to Pad : 130㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	16	20	24	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	16	20	24	V
Forward Current	I_F	V_F = 14V			0.1	μA
Reverse Current	I_R	V_R = 14V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Flip Zener Diode
PSZ-1049023F-8V

Description

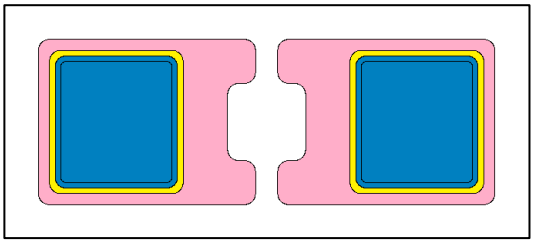
- PSZ-1049023F-8V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

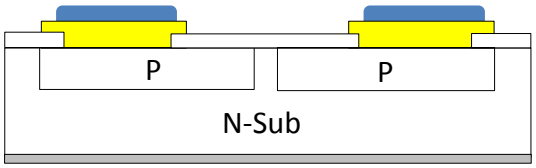
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 470(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al



[Top View]



[Cross Section]

- **Bonding Pad Size**
  - Diffusion Barrier : □ 120㎛ X 130㎛
  - Solder : □ 100㎛ X 110㎛
  - Distance of Pad to Pad : 150㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	7	8	10	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	7	8	10	V
Forward Current	I_F	V_F = 4V			0.1	μA
Reverse Current	I_R	V_R = 4V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

Silicon Flip Zener Diode
PSZ-1049023F-20V

Description

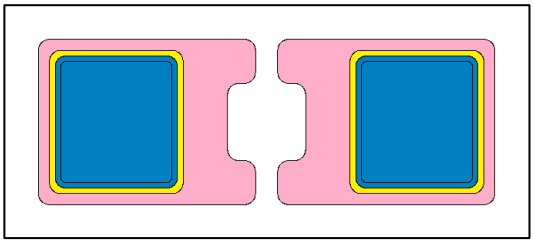
- PSZ-1049023F-20V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

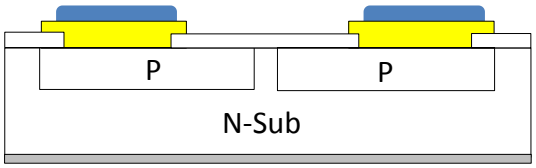
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 470(±20)㎛ X 210(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al



[Top View]



[Cross Section]

- **Bonding Pad Size**
  - Diffusion Barrier : □ 120㎛ X 130㎛
  - Solder : □ 100㎛ X 110㎛
  - Distance of Pad to Pad : 150㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	16	20	24	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	16	20	24	V
Forward Current	I_F	V_F = 14V			0.1	μA
Reverse Current	I_R	V_R = 14V			0.1	μA

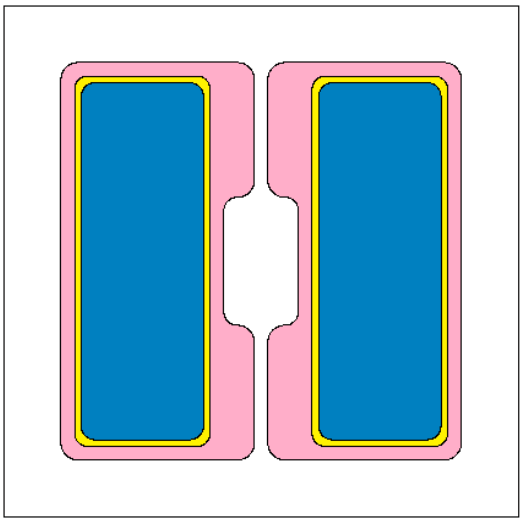
Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃

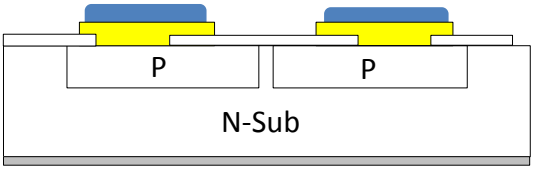
Silicon Flip Zener Diode
PSZ-1039039F-8V5

Description

- PSZ-1039039F-8V5 is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.



[Top View]



[Cross Section]

Application

- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 375(±20)㎛ X 375(±20)㎛
- **Chip Thickness** : 150㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al

- **Bonding Pad Size**
  - Diffusion Barrier : □ 100㎛ X 275㎛
  - Solder : □ 90㎛ X 265㎛
  - Distance of Pad to Pad : 85㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	7	8	10	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	7	8	10	V
Forward Current	I_F	V_F = 4V			0.1	㎂
Reverse Current	I_R	V_R = 4V			0.1	㎂

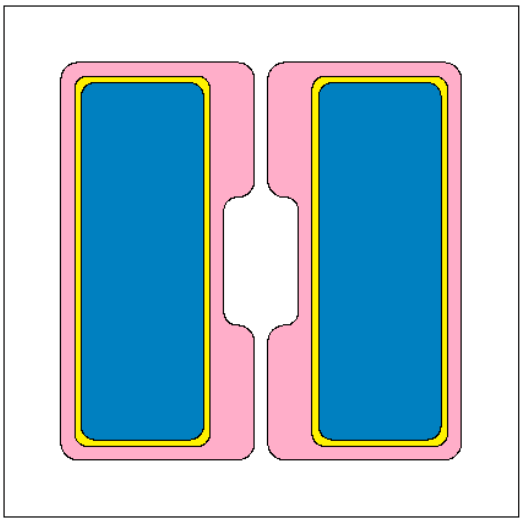
Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

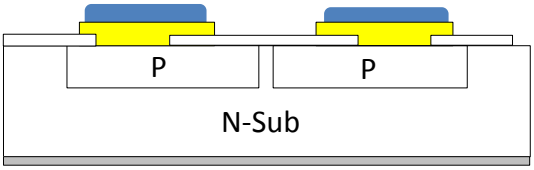
Silicon Flip Zener Diode
PSZ-1039039F-20V5

Description

- PSZ-1039039F-20V5 is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.



[Top View]



[Cross Section]

Application

- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 375(±20)㎛ X 375(±20)㎛
- **Chip Thickness** : 150㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al

- **Bonding Pad Size**
  - Diffusion Barrier : □ 100㎛ X 275㎛
  - Solder : □ 90㎛ X 265㎛
  - Distance of Pad to Pad : 85㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	16	20	24	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	16	20	24	V
Forward Current	I_F	V_F = 14V			0.1	μA
Reverse Current	I_R	V_R = 14V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	100	mW
Junction Temperature	T_j	150	℃

Silicon Flip Zener Diode
PSZ-1056026F-20V

Description

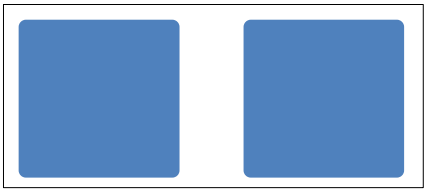
- PSZ-1056026F-20V is silicon planar Zener Diode for Flip Bonding.
- Lateral P/N/P type.

Application

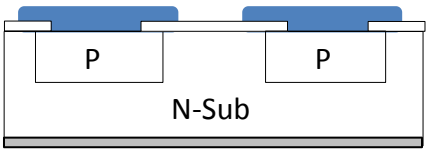
- **ESD & Surge Protector for LEDs**

Feature

- **Chip Size** : 540(±20)㎛ X 240(±20)㎛
- **Chip Thickness** : 100㎛ ± 15㎛
- **Structure** : Lateral P/N/P
- **Metallization**
  - **> Top**
    - Diffusion Barrier : Gold(Au)
    - Solder : Gold-Tin(Au/Sn) 3um
  - **> Bottom** : Al



[Top View]



[Cross Section]

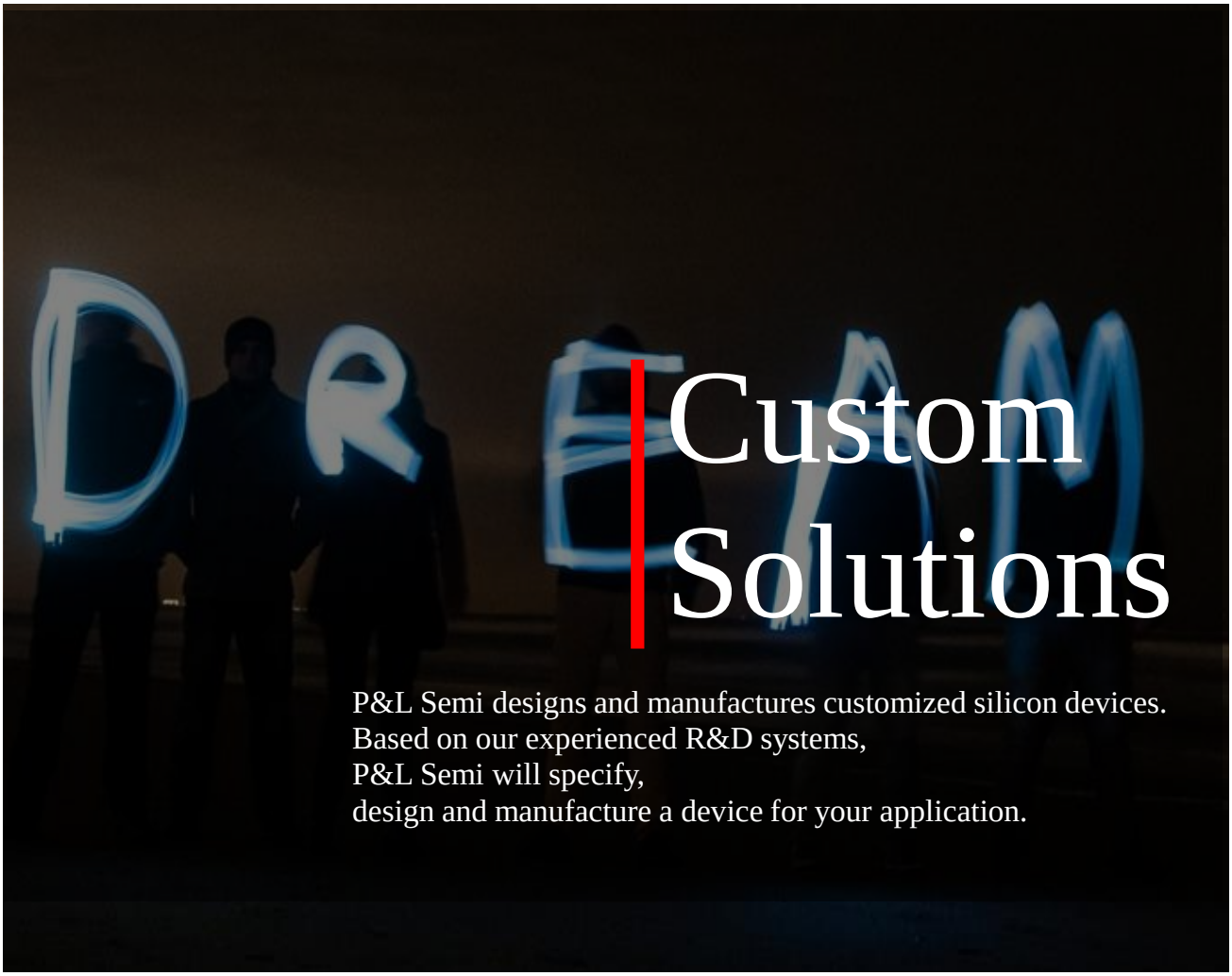
- **Bonding Pad Size**
  - Diffusion Barrier : □ 220㎛ X 220㎛
  - Solder : □ 200㎛ X 200㎛
  - Distance of Pad to Pad : 150㎛

Electrical and Optical Characteristics (Ta=25℃)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Zener Voltage	$V_{Z(F)}$	I_F = 5mA	16	20	24	V
Reverse Zener Voltage	$V_{Z(R)}$	I_Z = 5mA	16	20	24	V
Forward Current	I_F	V_F = 14V			0.1	μA
Reverse Current	I_R	V_R = 14V			0.1	μA

Absolute Maximum Rating (Ta=25℃)

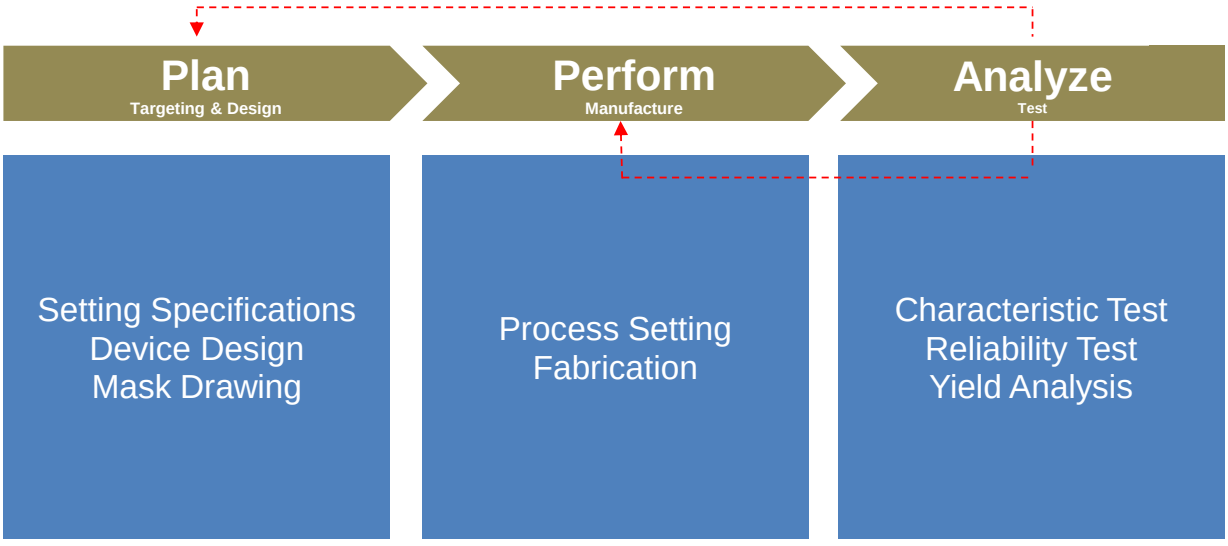
Parameter	Symbol	Maximum Rating	Unit
Power dissipation	Pd	50	mW
Junction Temperature	T_j	150	℃



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



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