



SANTA ANA DIVISION

**MXP1144P**

**PHOTOVOLTAIC BY-PASS DIODE  
50 VOLTS, 1.0 Amps**

**PRODUCT PREVIEW**

**DESCRIPTION**

Large area diode chip for medium current photovoltaic by-pass applications, or for higher current hybrid applications. The device is rated for 1A for applications where the device will be exposed to substantial radiation flux (space). For other applications, it may be operated at higher currents. A version with attached leads is available.

**IMPORTANT:** For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

**KEY FEATURES**

- Oxide passivated structure for very low leakage currents
- Epitaxial structure minimizes forward voltage drop
- Triangular shape to fit in corner near flat of photovoltaic cell
- Forward voltage decreases with radiation exposure
- Targeted for terrestrial applications with silicon photovoltaic cells
- Thin construction for fit with photovoltaic cells

**APPLICATIONS/BENEFITS**

- Increases efficiency of photovoltaic arrays
- Protects photovoltaic cells from reverse voltage
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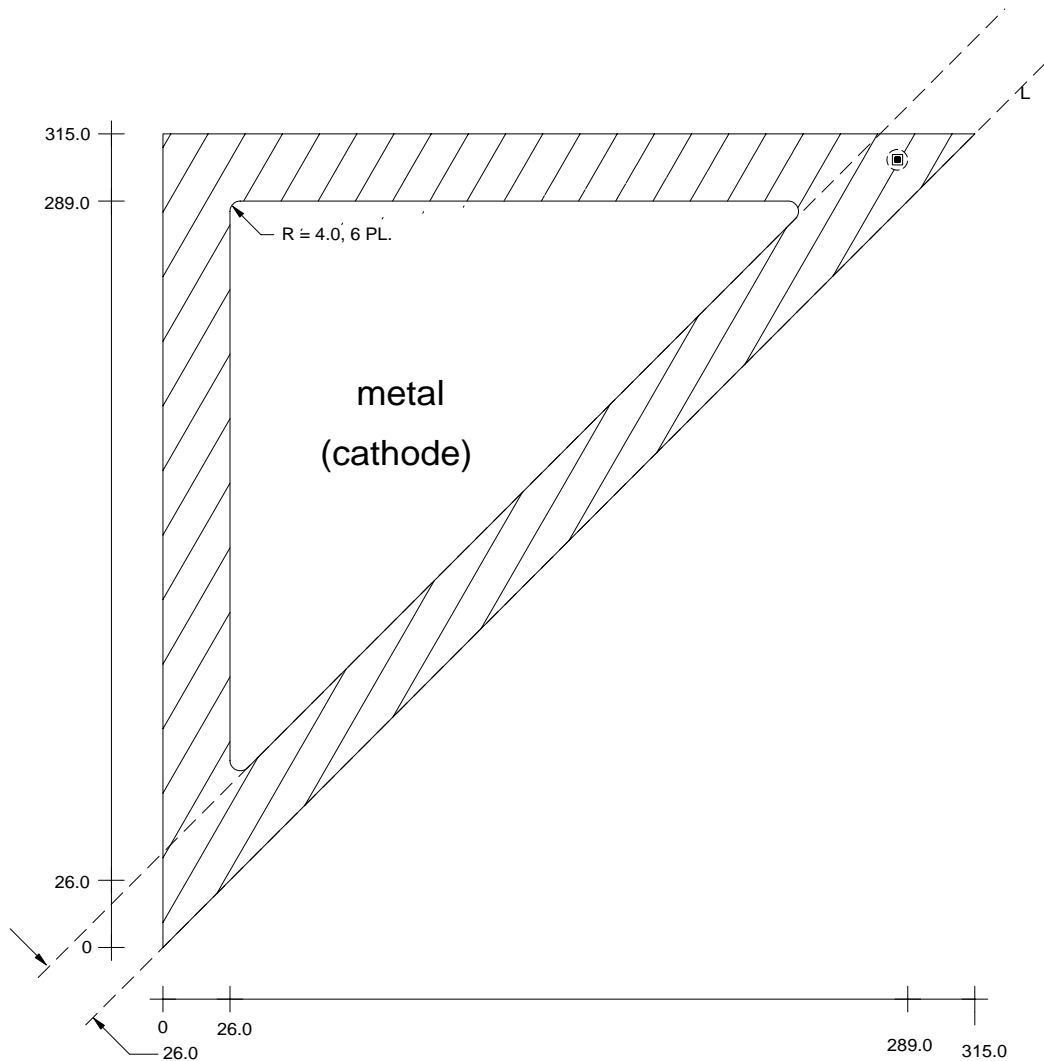
**MAXIMUM RATINGS @ 25°C (UNLESS OTHERWISE SPECIFIED)**

DESCRIPTION	SYMBOL	MAX.	UNIT
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	Volts
Working Peak Reverse Voltage	$V_{RWM}$	50	Volts
DC Blocking Voltage	$V_R$	50	Volts
Average Rectified Forward Current, $T_c \leq 135^\circ\text{C}$	$I_{F(ave)}$	1.0	Amps
Junction Temperature Range	$T_j$	-65 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +200	$^\circ\text{C}$

**ELECTRICAL PARAMETERS**

DESCRIPTION	SYMBOL	CONDITIONS	MIN	TYP.	MAX	UNIT
Reverse (Leakage) Current (in dark)	$IR_{25}$	$VR = 4 \text{ Vdc}, Ta = 25^\circ\text{C}$		10		nA
	$IR_{25}$	$VR = 50 \text{ Vdc}, Ta = 25^\circ\text{C}$		20	200	nA
Forward Voltage pulse test, $pw = 300 \mu\text{s}$	VF1	$IF = 400 \text{ mA}, Ta = 25^\circ\text{C}$		750	775	mV
	VF2	$IF = 1.0 \text{ A}, Ta = 25^\circ\text{C}$		770	800	mV
Junction Capacitance	$Cj1$	$VR = 4 \text{ Vdc}$		1050	1300	pF
Breakdown Voltage	BVR	$IR = 200 \mu\text{A}, Ta = 25^\circ\text{C}$	50	60		V

**Mechanical Outline**



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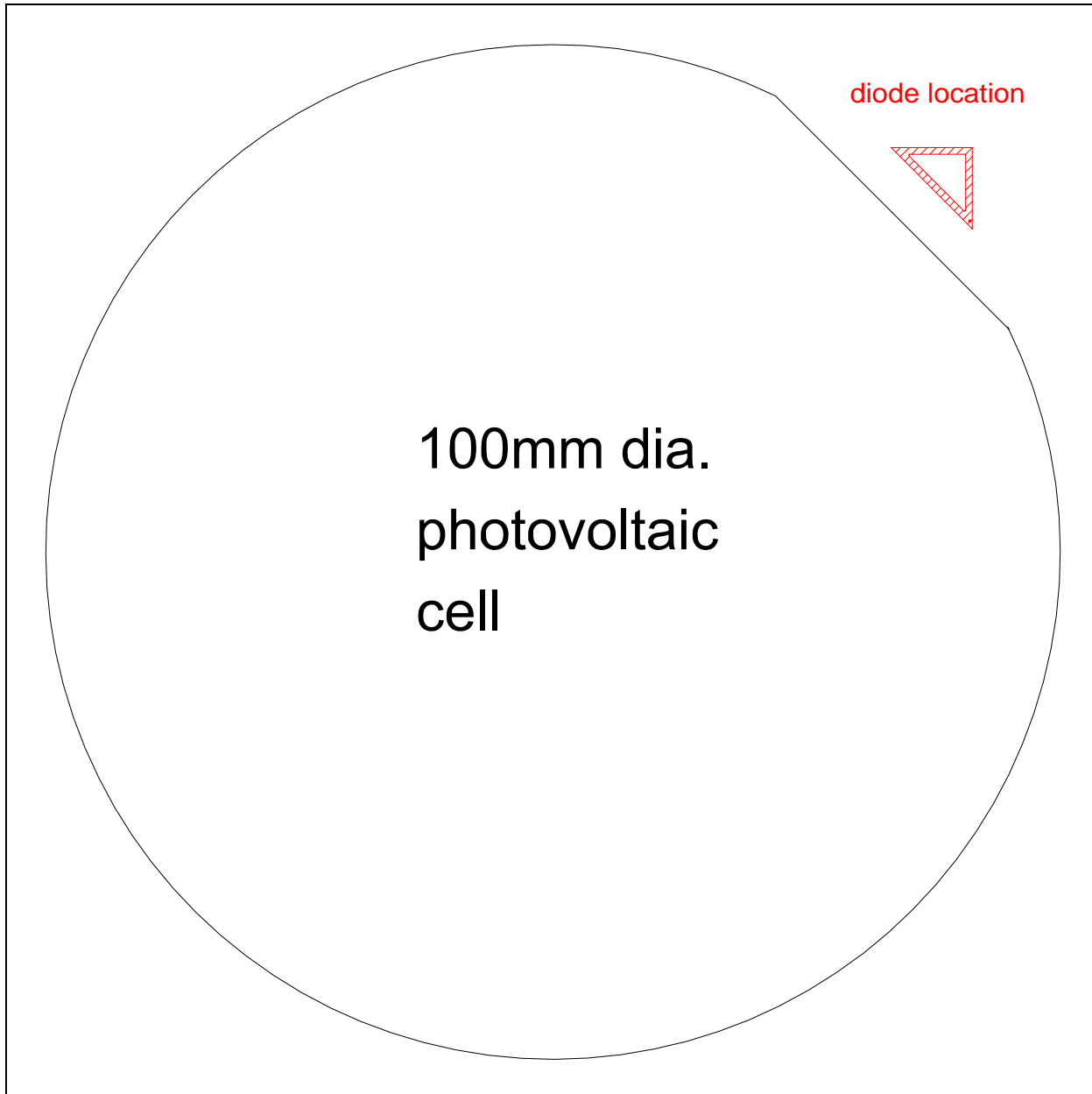
all dimensions in mils

Standard die thickness is 5.0 +/- 0.5 mils

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Typical location with 100mm diameter photovoltaic cell





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**NOTES**

**www.Microsemi.com**

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