

PRELIMINARY TECHNICAL DATA
DATASHEET 5566, PRELIMINARY.1

SILICON BYPASS DIODE

APPLICATIONS:

This series of diodes are intended to be used as solar cell bypass diodes to provide protection for the string in the event of a failure of one of the cells in the string. The triangular shape and weld able surfaces allow for easy integration with the solar cells with rugged attachment. The devices are intended for use in terrestrial solar arrays as well as in space based solar arrays for telecommunications, scientific or defense satellites, space stations and scientific exploration missions.

FEATURES / BENEFITS:

- ✓ Triangular shape for integration with chamfered corners of solar cells
- ✓ Low forward voltage drop
- ✓ Low reverse leakage
- ✓ Silicon Die fabricated on a MIL-PRF-19500 JANS qualified manufacturing line
- ✓ Available with Class H or Class K element evaluation IAW MIL-PRF-19500

ELECTRICAL CHARACTERISTICS:

Maximum Ratings:

All ratings are @ $T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	Condition	Min.	Max.	Units
Peak Inverse Voltage	V_{RWM}	-		50	V
Breakdown Voltage	V_{BR1}	@ $I_{BR}=100\mu\text{A}$	60		V
Max. Average Forward Current	$I_{F(AV)}$	@ $55\text{ }^\circ\text{C}$ ⁽¹⁾		3.0	A
Max. Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3 ms, sine pulse ⁽¹⁾		50	A
Max. Storage and Junction Temperature	T_J	-	-55	+175	$^\circ\text{C}$
Maximum Weight		-		0.03	grams

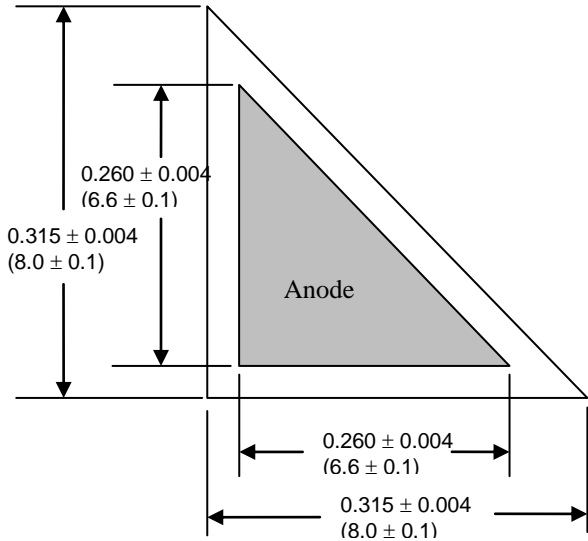
⁽¹⁾When mounted on suitable PCB

Electrical Characteristics:

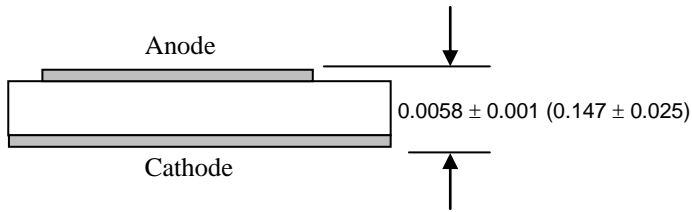
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop	V_{F1}	1.0A, pulse, $T_J = 25\text{ }^\circ\text{C}$	0.80	V
	V_{F2}	2.0A, pulse, $T_J = 25\text{ }^\circ\text{C}$	0.82	V
	V_{F3}	1A, pulse, $T_J = 125\text{ }^\circ\text{C}$	0.76	V
	V_{F4}	1A, pulse, $T_J = -55\text{ }^\circ\text{C}$	1.0	V
Max. Reverse Current	I_{R1}	$V_R = V_{RWM}$, pulse, $T_J = 25\text{ }^\circ\text{C}$	1.0	μA
	I_{R2}	$V_R = V_{RWM}$, pulse, $T_J = 125\text{ }^\circ\text{C}$	10	μA
Max. Junction Capacitance	C_T	$V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$, $V_{SIG} = 50\text{mV}$ (p-p)	250	pF

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PACKAGE DIMENSIONS (inches/mm):

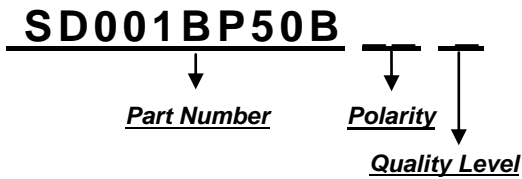


Standard bottom side metallization: Ti/Ni/Ag – 40 kÅ min
Standard top side Metallization: Ti/Ni/Ag – 40 kÅ min
Top side is anode, bottom side is anode
For -R version, top side is cathode and bottom side is anode.



PKG: BP-001

PART ORDERING INFORMATION:



Suffix	Part Number	Description
Blank	SD001BP50B	Cathode Bottom
-R	SD001BP50B-R	Anode Bottom
Blank	SD001BP50B	Commercial
H	SD001BP50BH	Class H Level Element Evaluation
K	SD001BP50BK	Class K Level Element Evaluation

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