

TECHNICAL DATA  
DATA SHEET 4510, REV. A

## POWER SCHOTTKY RECTIFIER

### Low Reverse Leakage

**Applications:**

- Switching Power Supply • Converters • Free-Wheeling Diodes • Polarity Protection Diode

**Features:**

- Ultra Low Reverse Leakage Current
- Soft Reverse Recovery at Low and High Temperature
- Very Low Forward Voltage Drop
- Low Power Loss, High Efficiency
- High Surge Capacity
- Guard Ring for Enhanced Durability and Long Term Reliability
- Guaranteed Reverse Avalanche Characteristics

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	45	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle, rectangular wave form	30	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine wave (per leg)	570	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 1.3\text{ A}$ , $L = 40\text{mH}$ (per leg)	27	mJ
Repetitive Avalanche Current	$I_{AR}$	$I_{AS}$ decay linearly to 0 in $1\text{ }\mu\text{s}$ $f$ limited by $T_J$ max $V_A=1.5V_R$	1.3	A
Thermal Resistance	$R_{thJC}$	Per Package	0.50	$^\circ\text{C/W}$
Max. Junction Temperature	$T_J$	-	-65 to +175	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-65 to +175	$^\circ\text{C}$

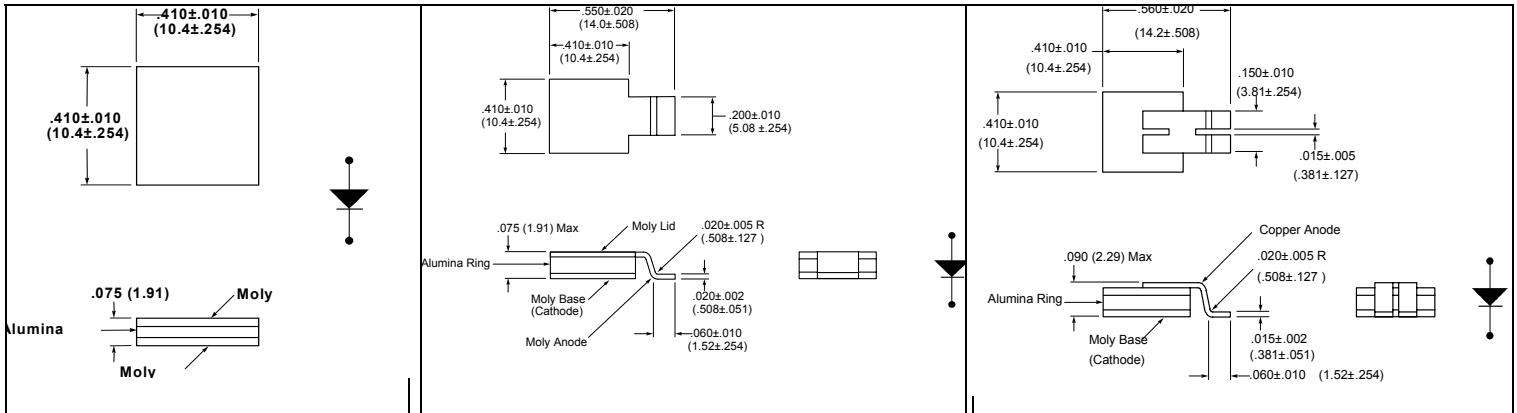
**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop	$V_{F1}$	@ 120A, Pulse, $T_J = 25\text{ }^\circ\text{C}$ (per leg) measured at the leads	0.64	V
	$V_{F2}$	@ 120A, Pulse, $T_J = 125\text{ }^\circ\text{C}$ (per leg) measured at the leads	0.57	V
Max. Reverse Current	$I_{R1}$	@ $V_R = 45\text{V}$ , Pulse, $T_J = 25\text{ }^\circ\text{C}$ (per leg)	0.8	mA
	$I_{R2}$	@ $V_R = 45\text{V}$ , Pulse, $T_J = 125\text{ }^\circ\text{C}$ (per leg)	30	mA
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) (per leg)	1600	pF

**SENSITRON**

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**Mechanical Dimensions: in inches / mm**



**SHD-3**

**SHD-3A**

**SHD-3B**

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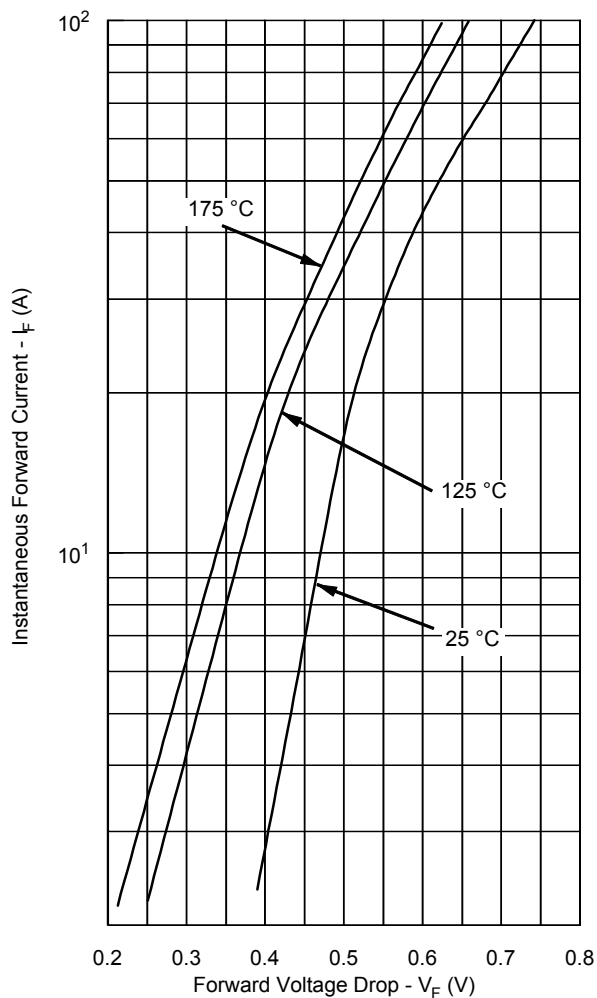
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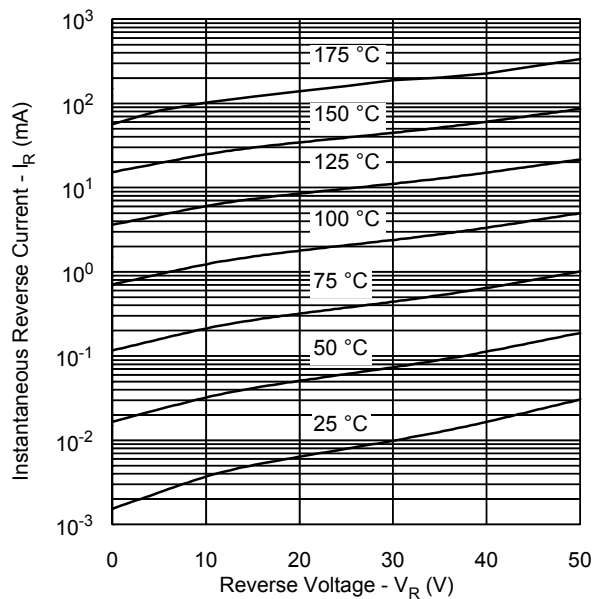
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Vf Curves shown are for die only.

**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**

