

TECHNICAL DATA  
DATA SHEET 639, REV. A**SILICON SCHOTTKY RECTIFIER DIE**  
**Extremely Low Forward Voltage Drop****Applications:**

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

**Features:**

- Soft Reverse Recovery at Low and High Temperature
- Extremely 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
- Electrically / Mechanically Stable during and after Packaging

**Maximum Ratings<sup>(1)</sup>:**

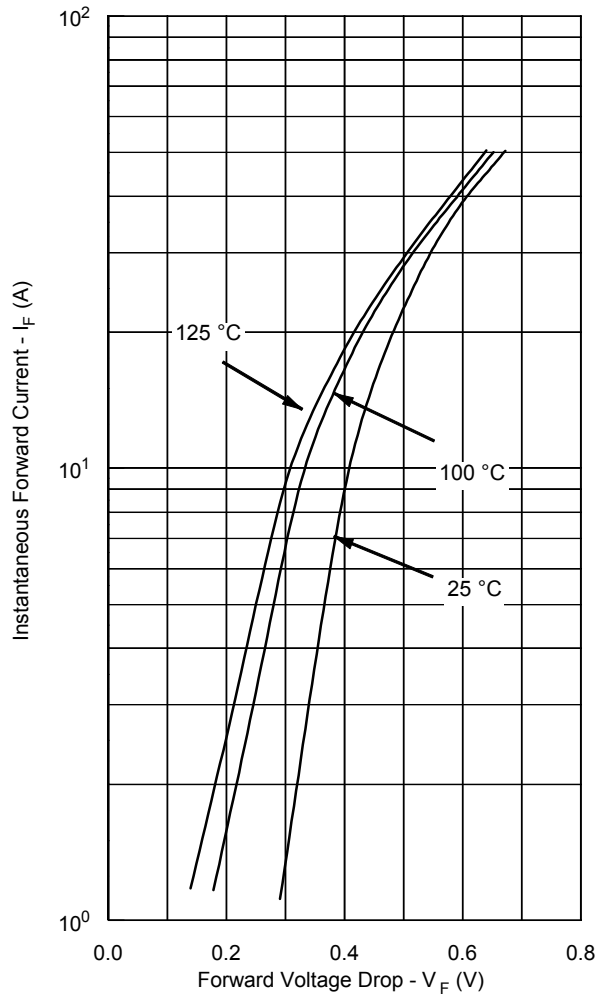
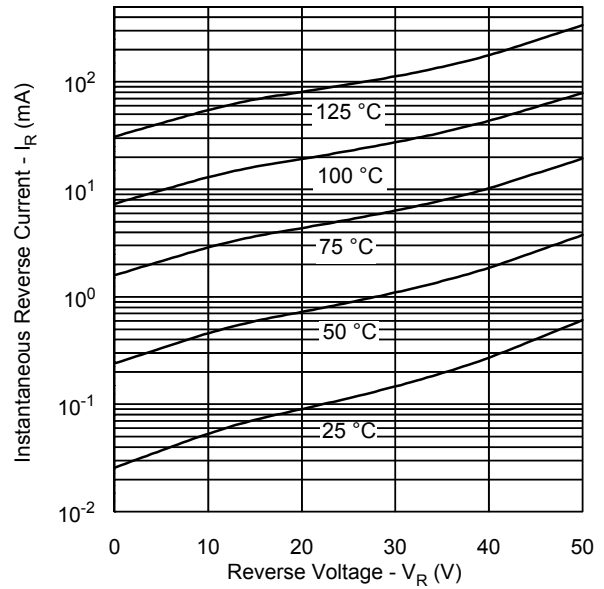
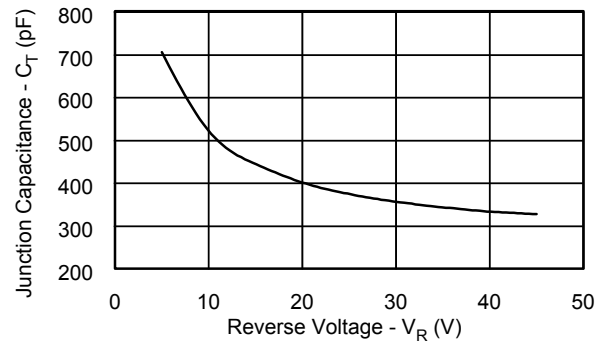
| Characteristics                                  | Symbol      | Condition                                                                                  | Max.        | Units              |
|--------------------------------------------------|-------------|--------------------------------------------------------------------------------------------|-------------|--------------------|
| Peak Inverse Voltage                             | $V_{RWM}$   | -                                                                                          | 45          | V                  |
| Max. Average Forward Current                     | $I_{F(AV)}$ | 50% duty cycle, rectangular wave form                                                      | 15          | A                  |
| Max. Peak One Cycle Non-Repetitive Surge Current | $I_{FSM}$   | 8.3 msec, sine pulse                                                                       | 280         | A                  |
| Non-Repetitive Avalanche Energy                  | $E_{AS}$    | $T_J = 25\text{ }^{\circ}\text{C}$ , $I_{AS} = 2.4\text{ A}$<br>$L = 6.5\text{ mH}$        | 18.7        | mJ                 |
| Repetitive Avalanche Current                     | $I_{AR}$    | $I_{AS}$ decay linearly to 0 in 1 $\mu\text{s}$<br>$f$ limited by $T_J$ max $V_A = 1.5V_R$ | 2.4         | A                  |
| Max. Junction Temperature                        | $T_J$       | -                                                                                          | -55 to +125 | $^{\circ}\text{C}$ |
| Max. Storage Temperature                         | $T_{stg}$   | -                                                                                          | -55 to +125 | $^{\circ}\text{C}$ |

**Electrical Characteristics<sup>(1)</sup>:**

| Characteristics           | Symbol   | Condition                                                                                                                 | Max. | Units |
|---------------------------|----------|---------------------------------------------------------------------------------------------------------------------------|------|-------|
| Max. Forward Voltage Drop | $V_{F1}$ | @ 15 A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$                                                                         | 0.51 | V     |
|                           | $V_{F2}$ | @ 15 A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$                                                                        | 0.47 | V     |
| Max. Reverse Current      | $I_{R1}$ | @ $V_R = 45\text{ V}$ , Pulse, $T_J = 25\text{ }^{\circ}\text{C}$                                                         | 1.5  | mA    |
|                           | $I_{R2}$ | @ $V_R = 45\text{ V}$ , Pulse, $T_J = 125\text{ }^{\circ}\text{C}$                                                        | 250  | mA    |
| Max. Junction Capacitance | $C_T$    | @ $V_R = 5\text{ V}$ , $T_C = 25\text{ }^{\circ}\text{C}$<br>$f_{SIG} = 1\text{ MHz}$ ,<br>$V_{SIG} = 50\text{ mV (p-p)}$ | 870  | pF    |

(1) in SHD package

## SENSITRON

**TECHNICAL DATA**  
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**Typical Forward Characteristics**

**Typical Reverse Characteristics**

**Typical Junction Capacitance**


## SENSITRON

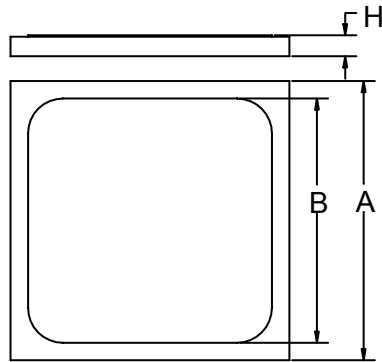
**TECHNICAL DATA**  
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**Mechanical Dimensions: In Inches / mm**


Figure 1

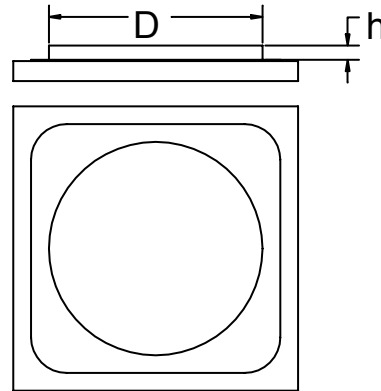


Figure 2

| A           | B           | D           | H            | h           |
|-------------|-------------|-------------|--------------|-------------|
| 0.125±0.003 | 0.116±0.003 | 0.070±0.005 | 0.0155±0.001 | 0.010±0.002 |

Top side (Anode) metallization:

A = Al - 25 kÅ minimum, Figure 1

B = Ag - 30 kÅ minimum, Figure 1

C = Au - 12 kÅ min, Figure 2

Bottom side (Cathode) metallization:

A, B, C = Ti/Ni/Ag - 30 kÅ minimum.

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