

TECHNICAL DATA  
DATASHEET 4938, Rev A

## SILICON SCHOTTKY RECTIFIER DIE Very Low Forward Voltage Drop

### Applications:

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

### Features:

- Soft Reverse Recovery at Low and High Temperature
- Very Low Forward Voltage Drop
- Low Reverse Leakage Current
- 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:

| Characteristics                                  | Symbol      | Condition  | Max.        | Units            |
|--|-------------|--|-------------|------------------|
| Peak Inverse Voltage                             | $V_{RWM}$   | -  | 200         | 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 ms, half Sine wave <sup>(1)</sup>  | 280         | A                |
| Non-Repetitive Avalanche Energy                  | $E_{AS}$    | $T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 0.6\text{ A}$ ,<br>$L = 40\text{ mH}$         | 7.2         | mJ               |
| Repetitive Avalanche Current                     | $I_{AR}$    | $I_{AS}$ decay linearly to 0 in 1 $\mu\text{s}$<br>$f$ limited by $T_J$ max $V_A = 1.5V_R$ | 0.6         | A                |
| Max. Junction Temperature                        | $T_J$       | -  | -65 to +200 | $^\circ\text{C}$ |
| Max. Storage Temperature                         | $T_{stg}$   | -  | -65 to +200 | $^\circ\text{C}$ |

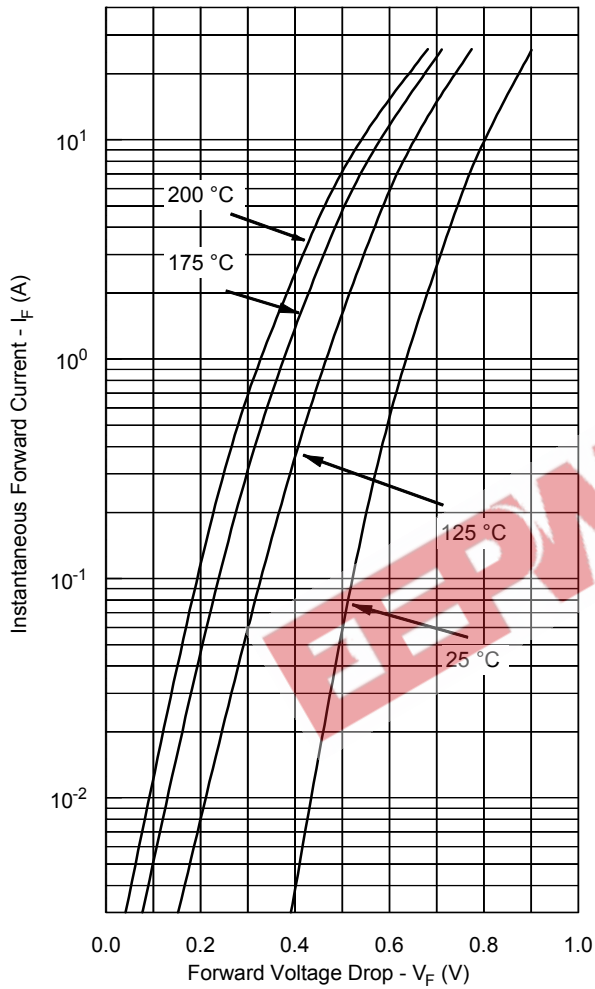
### Electrical Characteristics:

| Characteristics           | Symbol   | Condition   | Max. | Units         |
|---------------------------|----------|---|------|---------------|
| Max. Forward Voltage Drop | $V_{F1}$ | @ 15A, Pulse, $T_J = 25\text{ }^\circ\text{C}$  | 0.92 | V             |
|                           | $V_{F2}$ | @ 15A, Pulse, $T_J = 125\text{ }^\circ\text{C}$   | 0.76 | V             |
| Max. Reverse Current      | $I_{R1}$ | @ $V_R = 200\text{ V}$ , Pulse,<br>$T_J = 25\text{ }^\circ\text{C}$   | 350  | $\mu\text{A}$ |
|                           | $I_{R2}$ | @ $V_R = 200\text{ V}$ , Pulse,<br>$T_J = 125\text{ }^\circ\text{C}$  | 8    | 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>$V_{SIG} = 50\text{ mV (p-p)}$ | 300  | pF            |

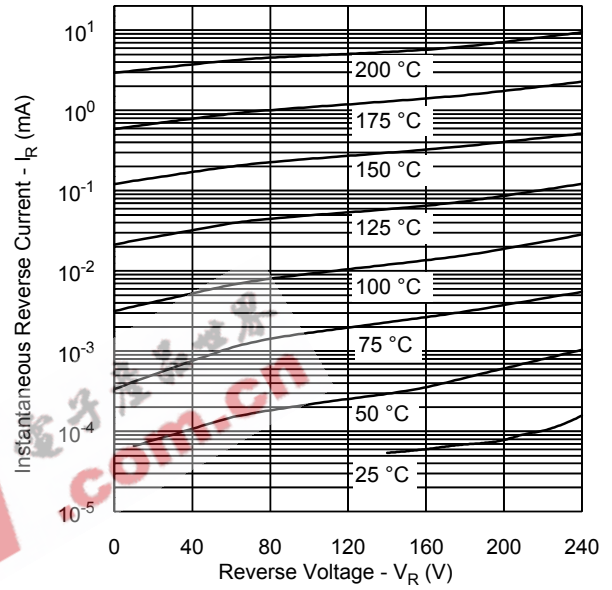
(1) in SHD package

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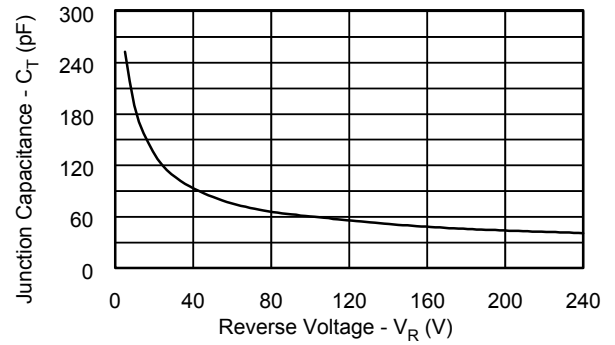
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



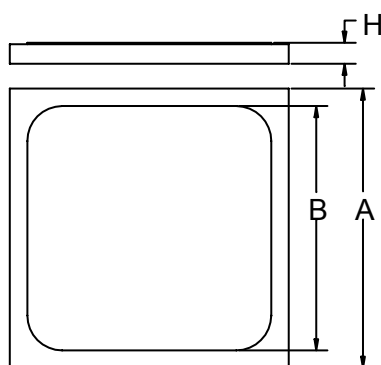
**Mechanical Dimensions: In Inches / mm**


Figure 1

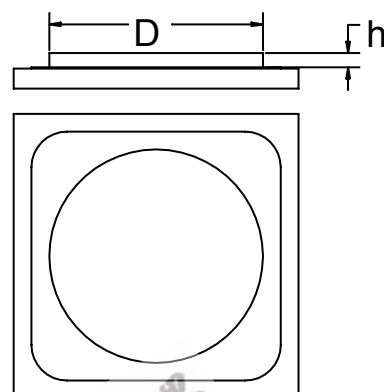


Figure 2

| 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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