

**TECHNICAL DATA**  
**DATA SHEET 4142, Rev A**

## SILICON SCHOTTKY RECTIFIER DIE

### Ultra Low Forward Voltage Drop

### Typical Voltage Drop 0.30V

**Applications:**

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

**Features:**

- Ultra Low Forward Voltage Drop
- Soft Reverse Recovery at Low and High Temperature
- Low Power Loss, High Efficiency
- Very 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>:**

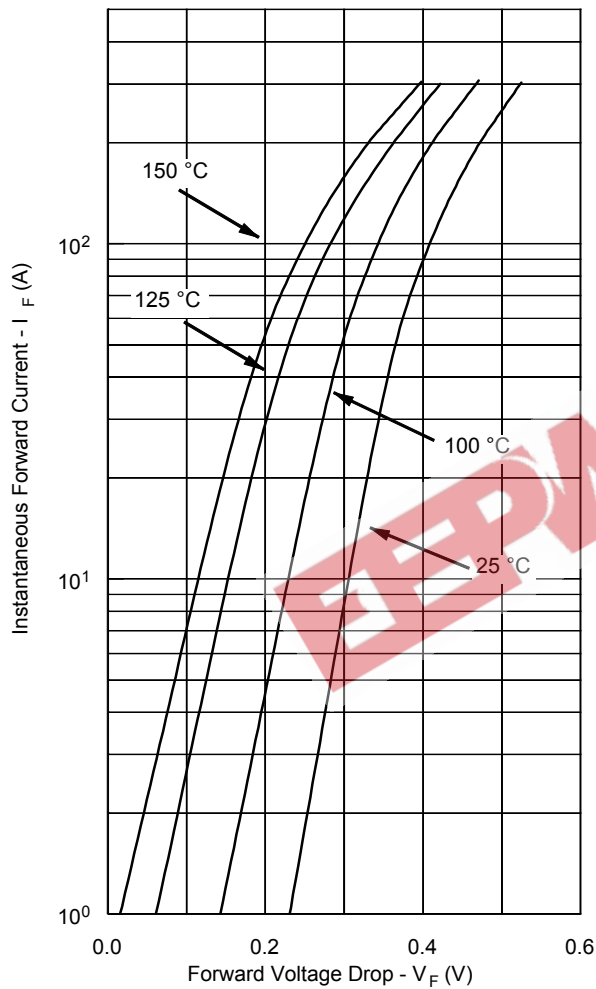
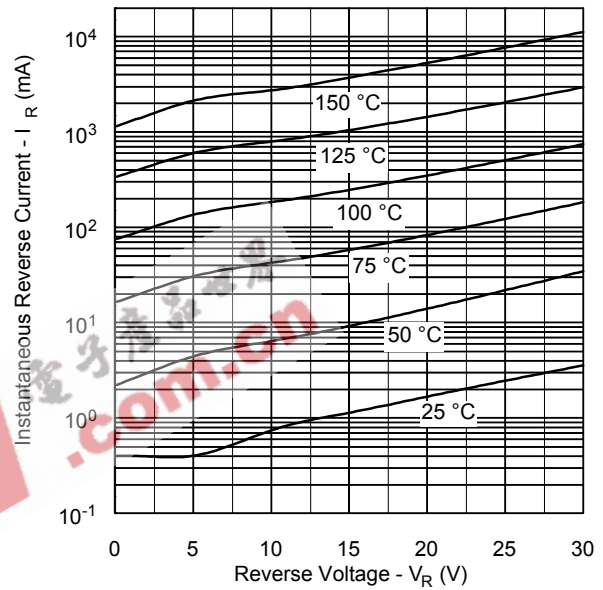
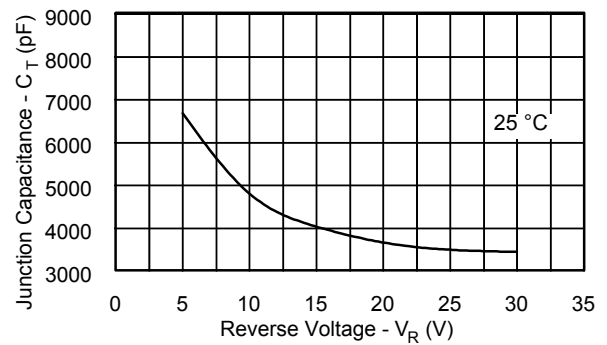
Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	20	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle, rectangular wave form	120	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 msec, sine pulse	1650	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 3.7\text{ A}$ $L = 6.5\text{ mH}$	44.5	mJ
Repetitive Avalanche Current	$I_{AR}$	$I_{AS}$ decay linearly to 0 in $1\text{ }\mu\text{s}$ $f$ limited by $T_J$ max $V_A = 1.5V_R$	3.7	A
Max. Junction Temperature	$T_J$	-	-55 to + 150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-55 to + 150	$^\circ\text{C}$

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

Characteristics	Symbol	Condition	Typ.	Max.	Units
Max. Forward Voltage Drop	$V_{F1}$	@ 120A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.42	0.48	V
	$V_{F2}$	@ 120A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.30	0.35	V
	$V_{F3}$	@ 120A, Pulse, $T_J = 150\text{ }^\circ\text{C}$	0.27	0.32	V
Max. Reverse Current	$I_{R1}$	@ $V_R = 30\text{V}$ , Pulse, $T_J = 25\text{ }^\circ\text{C}$	2.7	20.0	mA
	$I_{R2}$	@ $V_R = 30\text{V}$ , Pulse, $T_J = 125\text{ }^\circ\text{C}$	2240	3000	mA
	$I_{R3}$	@ $V_R = 5\text{V}$ , Pulse, $T_J = 100\text{ }^\circ\text{C}$	100	180	mA
Max. Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ , $I_{SIG} = 50\text{mV (p-p)}$	6684	8100	pF

(1) in SHD package

SENSITRON

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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

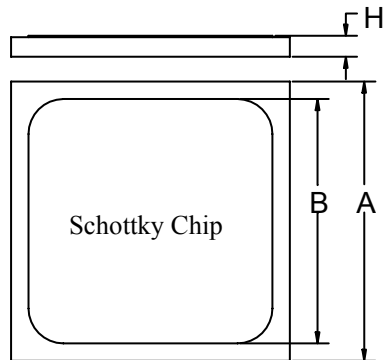


Figure 1

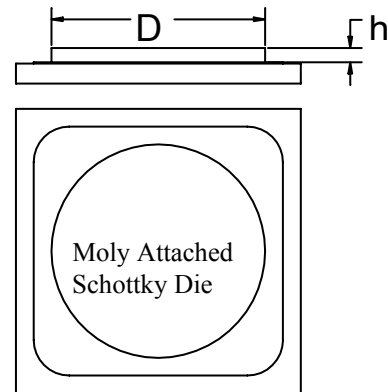


Figure 2

## 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.

A	B	D	H	h
0.275±0.003	0.267±0.003	0.220±0.005	0.0155±0.001	0.011±0.002

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