SENSITRON
SEMICONDUCTOR

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(1):

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 °C, I_{AS} = 3.7 A L = 6.5 mH	44.5	mJ
Repetitive Avalanche Current	I_{AR}	I_{AS} decay linearly to 0 in 1 μs f limited by T_J max V_A=1.5V_R	3.7	A
Max. Junction Temperature	T_J	-	-55 to + 150	°C
Max. Storage Temperature	T_{stg}	-	-55 to + 150	°C

Electrical Characteristics(1):

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

(1) in SHD package

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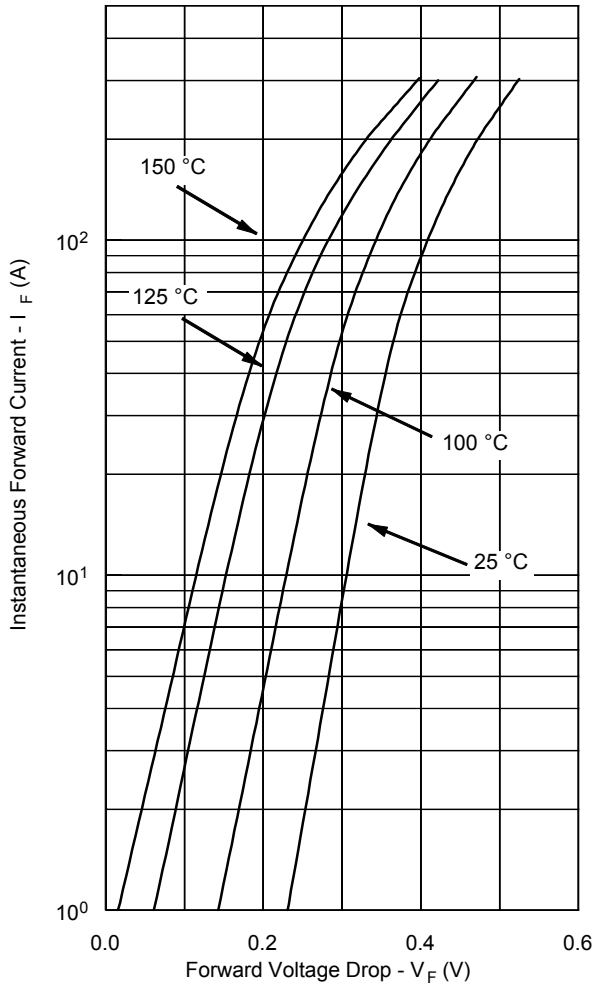
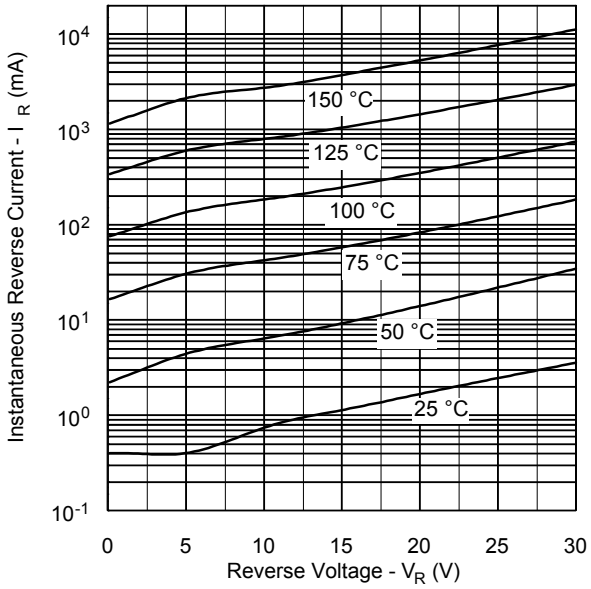
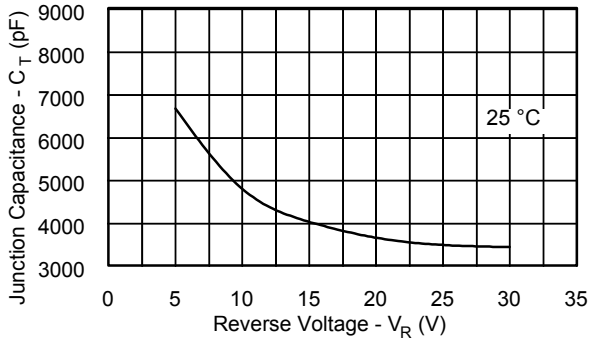
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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Mechanical Dimensions: In Inches / mm

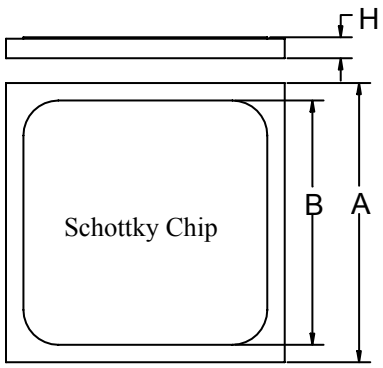

Figure 1

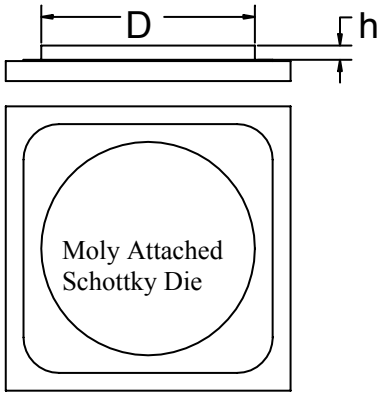

Figure 2

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