

Technical Data  
Data Sheet 643, Rev.-

## 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
- 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	7.5	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine wave <sup>(1)</sup>	140	A
Non-Repetitive Avalanche Energy	$E_{AS}$	$T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 2.0\text{ A}$ , $L = 6.5\text{ mH}$	13.6	mJ
Repetitive Avalanche Current	$I_{AR}$	$I_{AS}$ decay linearly to 0 in 1 $\mu\text{s}$ $f$ limited by $T_J$ max $V_A=1.5V_R$	2.0	A
Max. Junction Temperature	$T_J$	-	-65 to +150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-65 to +150	$^\circ\text{C}$

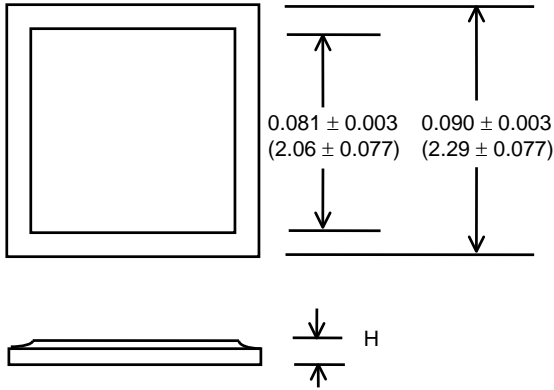
**Electrical Characteristics<sup>(1)</sup>:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop	$V_{F1}$	@ 7.5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.56	V
	$V_{F2}$	@ 7.5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.51	V
Max. Reverse Current	$I_{R1}$	@ $V_R = 45\text{V}$ , Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.75	mA
	$I_{R2}$	@ $V_R = 45\text{V}$ , Pulse, $T_J = 125\text{ }^\circ\text{C}$	35	mA
Max. Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ , $V_{SIG} = 50\text{mV (p-p)}$	400	pF

(1) in SHD package

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**Mechanical Dimensions: In Inches / mm**



Bottom side metalization Ag - 30 kÅ minimum.

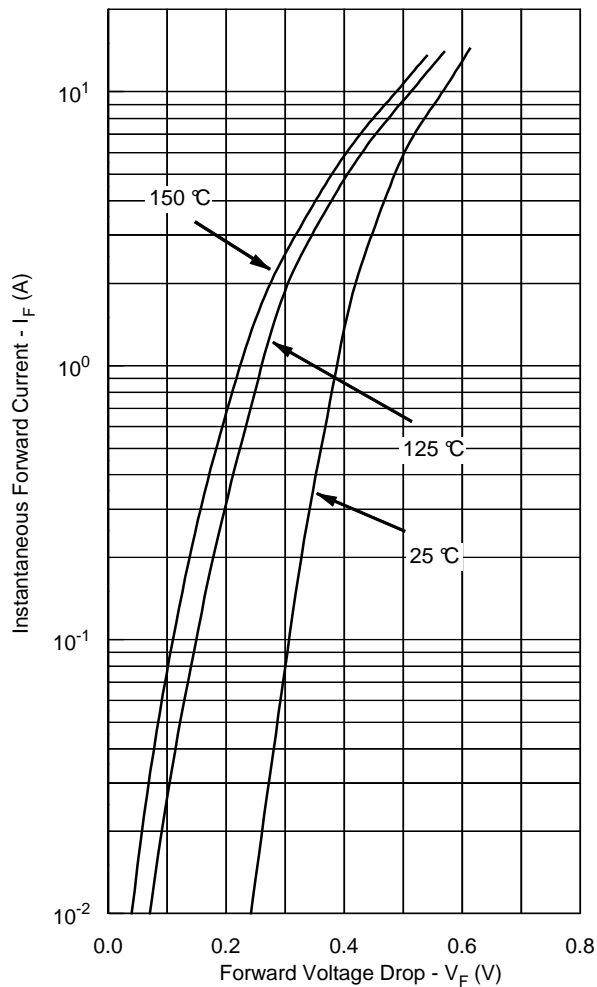
Top side metalization Al - 25 kÅ minimum  
or Ag - 30 kÅ minimum.

Bottom side is cathode, top side is anode.

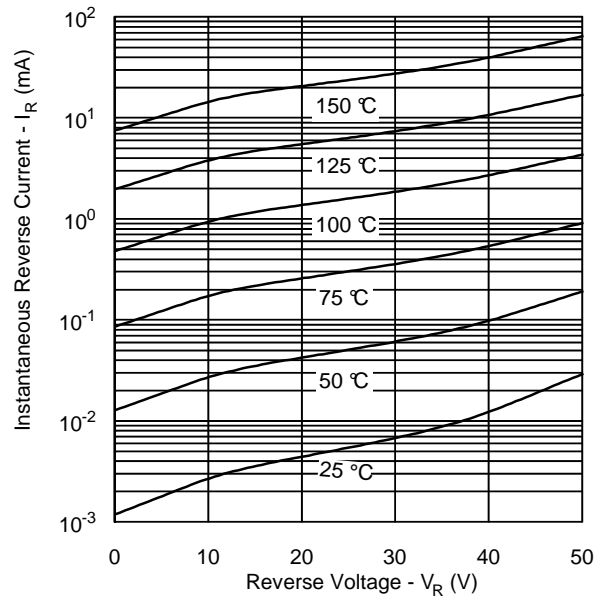
Dimension H = 0.0105 ± 0.001 (0.27 ± 0.026) for Al top;

Dimension H = 0.0155 ± 0.001 (0.39 ± 0.026) for Ag top.

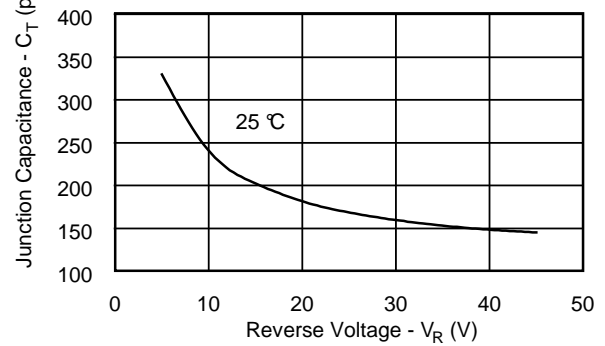
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**TECHNICAL DATA**

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