

Silicon Carbide Schottky Diode

HCS090X330

Features

- 3300V Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching

V _{rrm} =	3300 V
Q _c =	859 nC @ 1650 V

Benefits

- Replace bipolar with unipolar rectifiers
- Essentially no switching losses
- Higher efficiency
- Reduction of heat sink requirements
- Parallel devices without thermal runaway

Package



Applications

- Switch mode power supplies (SMPS)
- Power factor correction
- Motor drives

Part Number	Package	Marking
HCS090X330	Die Only	H

Electrical Characteristics (T_j=25°C)

Symbol	Parameter	Value			Unit	Test Conditions	Note
		Min.	Typ.	Max.			
V _f	Forward Voltage		2.2		V	I _f =90A, T _j =25°C	Fig.1
						I _f =90A, T _j =175°C	
I _r	Reverse Current		30		μA	V _r =3300V, T _j =25°C	Fig.2
						V _r =3300V, T _j =175°C	
Q _c	Total Capacitive Charge		859		nC	V _r =1650V, T _j =25°C	Fig.3
C	Total Capacitance		7380		pF	V _r =1V, T _j =25°C, f=1MHz	Fig.4
			320			V _r =1100V, T _j =25°C, f=1MHz	
			310			V _r =2000V, T _j =25°C, f=1MHz	
E _c	Capacitance Stored Energy		460		μJ	V _r =1650V	Fig.5

Typical Performance

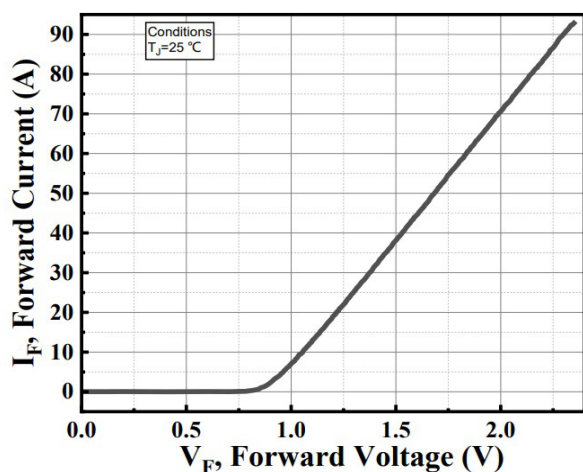


Figure 1. Forward Characteristics

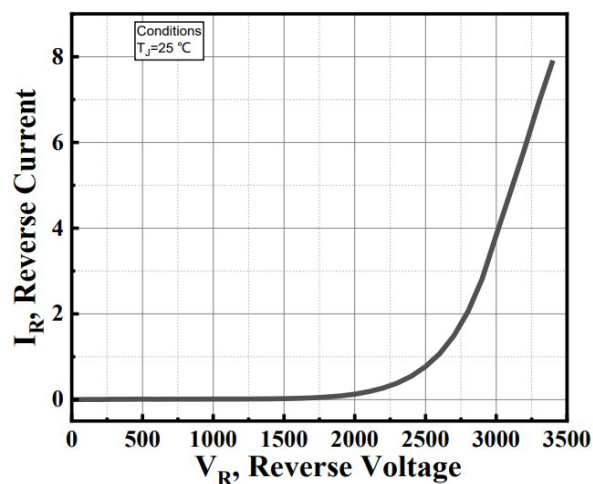


Figure 2. Reverse Characteristics

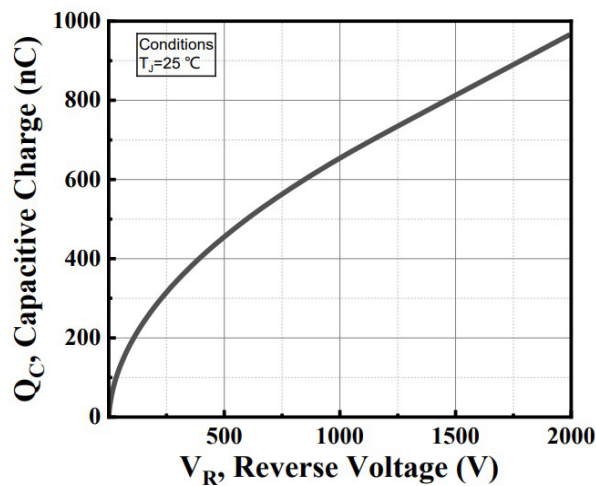


Figure 3. Capacitance Charge Vs. Reverse Voltage

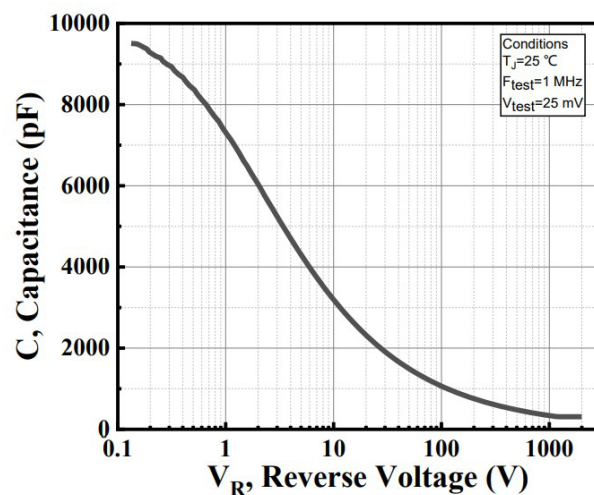


Figure 4. Capacitance Vs. Reverse Voltage

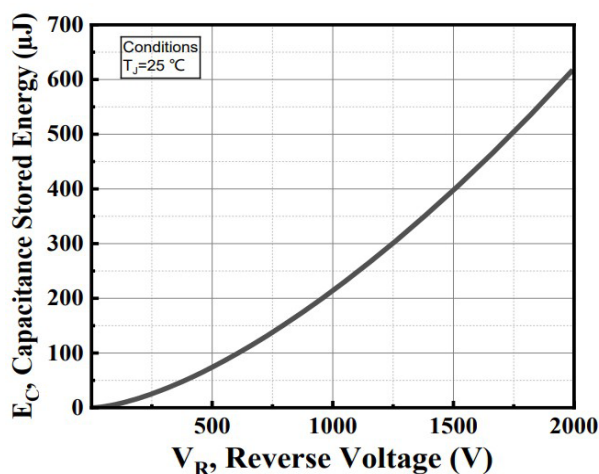
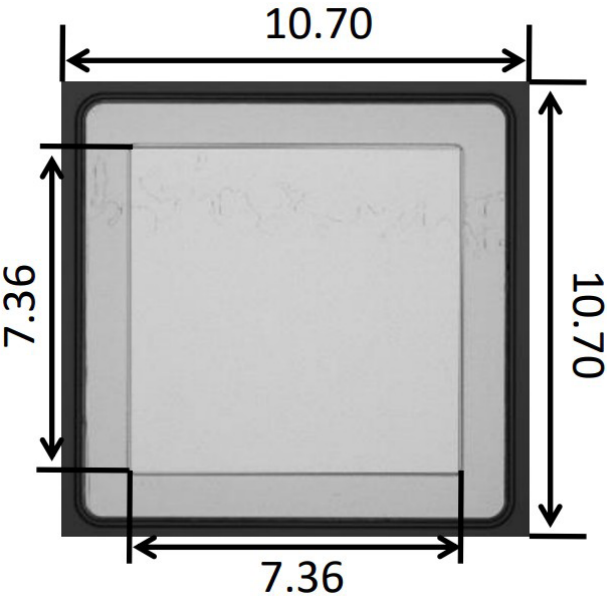


Figure 5. Capacitance Stored Energy

Package Dimensions



Product Dimensions

Parameter	Typical	Units
Die Size (LxW)	10.70x10.7	mm
Anode Pad Opening	7.36x7.36	mm
Die Thickness ¹	370±10%	μm
Topside Anode Metalization (Al)	4	μm
Backside Cathode Metalization (Ti/Ni/Ag)	2	μm
Frontside Passivation (polymide)	SiO ₂ Polyimide	

Attention

- Specifications of any and all products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
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