



3300V / 90A SiC Schottky Diode

HWDS90HCS330U

Features

- Temperature independent fast switching
- Low reverse leakage current
- Low Vf at high temperatures
- Easy paralleling (positive temperature coefficient of Vf)
- High repetitive surge current
- Zero reverse recovery current

Vrrm	= 3300 V
If (Tc=25 °C)	= 90 A
Qc	= 859 nC

Benefits

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



HUIWEI marking concept
Package availability pending confirmation

Applications

- Switch mode power supplies (SMPS)
- Power factor correction
- Motor drives
- Electric vehicles and battery chargers
- Solar inverters
- Free wheeling diode

Part Number	Package	Marking
HWDS90HCS330U	TO-247-2L	HUIWEI



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Maximum Rated Values (Tc=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
Vrrm	Repetitive Peak Reverse Voltage	3300	V		
Vr	DC Peak Reverse Voltage	3300	V		
If	Continuous Forward Current	90	A	Tc=25°C	Fig. 1
Ifsm	Non-Repetitive Peak Surge Current	900	A	Tc=25°C, tp=10ms, sine	
Ptot	Power Dissipation	N/A	W	Contact sales for Rθjc	
Tj	Operating Temperature	-55 to +175	°C		
Tstg	Storage Temperature	-55 to +175	°C		
	TO-247-2L Mounting Torque	1 / 8.8	Nm / lbf·in	M3 Screw	

Electrical Characteristics (Tj=25°C)

Symbo l	Parameter	Min	Typ	Max	Unit	Test Conditions	Note
Vf	Forward Voltage	—	2.2	—	V	If=90 A, Tj=25°C	Fig. 1
Ir	Reverse Current	—	30	—	μA	Vr=3300 V, Tj=25°C	Fig. 2
Qc	Total Capacitive Charge	—	859	—	nC	Vr=1650 V, Tj=25°C	Fig. 3
C	Total Capacitance	—	7,380	—	pF	Vr=1 V, Tj=25°C, f=1 MHz	Fig. 4
		—	320	—	pF	Vr=1100 V, Tj=25°C, f=1 MHz	
		—	233	—	pF	Vr=2000 V, Tj=25°C, f=1 MHz	
Ec	Capacitance Stored Energy	—	460	—	μJ	Vr=1650 V	Fig. 5



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Typical Performance

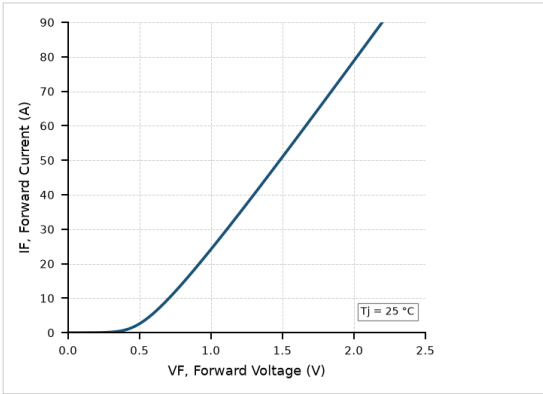


Figure 1. Forward Characteristics

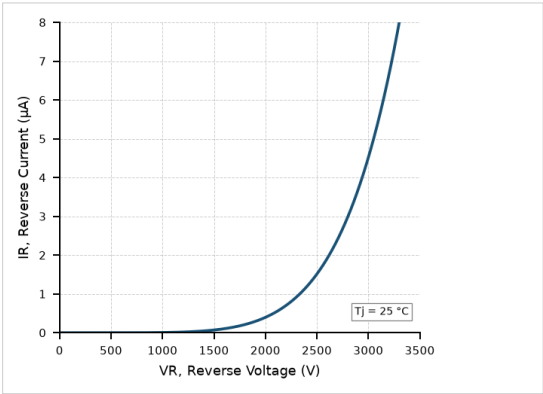


Figure 2. Reverse Characteristics

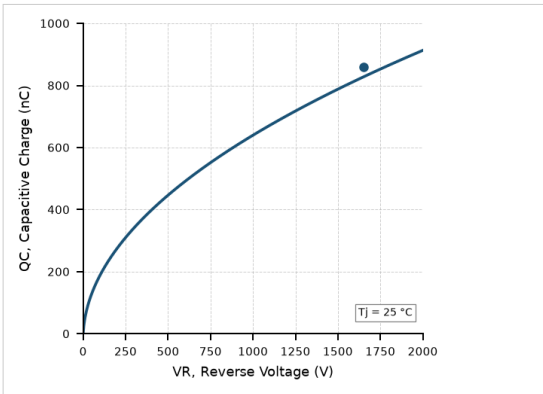


Figure 3. Capacitance Charge Vs. Reverse Voltage

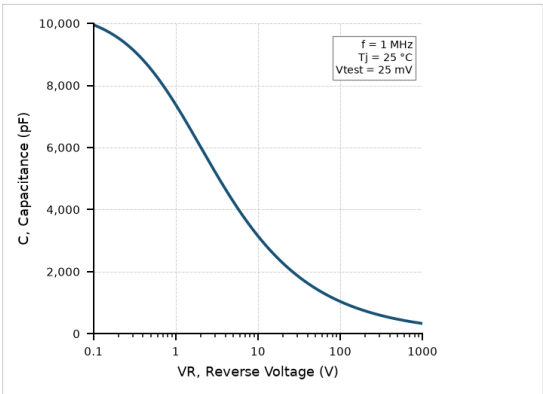


Figure 4. Capacitance Vs. Reverse Voltage

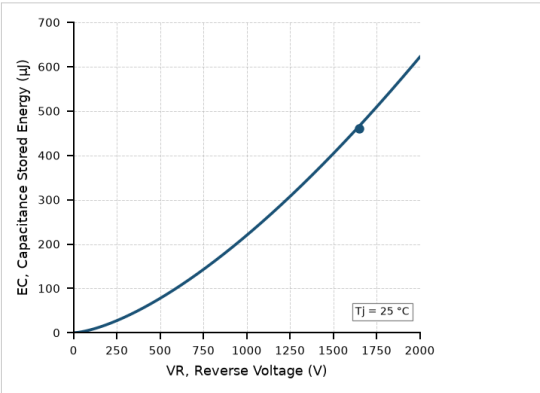


Figure 5. Capacitance Stored Energy