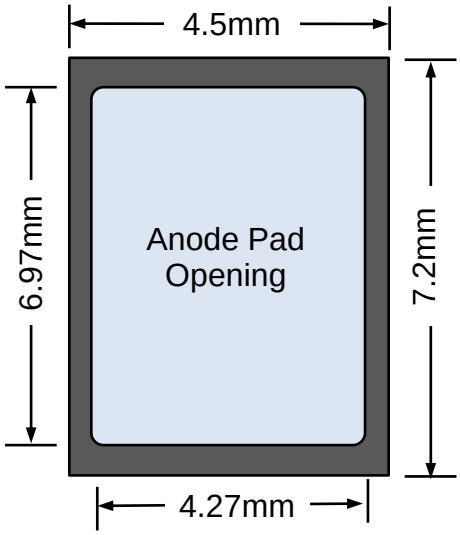
Features

- Positive temperature coefficient for safe operation and ease of paralleling
- 175°C maximum operating junction temperature
- Extremely fast switching not dependent on temperature
- Essentially no reverse or forward recovery



Typical Applications

- Power converters
- Industrial motor drives
- Switching-mode power supplies
- Power factor correction modules

Part Number	Anode Metal	Cathode Metal	Packaging
UJ3D065200Z	Al (5μm)	Ti/Ni/Ag (0.1/0.2/1μm)	Die on tape (6")

Descriptions

United Silicon Carbide, Inc offers the **xR series** of high-performance SiC Schottky diodes. With zero reverse recovery charge and 175°C maximum junction temperature, USCI's diodes are ideally suited for high-frequency and high-efficiency power systems with minimum cooling requirements.

Maximum Ratings

Parameter	Symbol	Test Conditions	Value	Units
DC Blocking Voltage	V_R		650	V
Repetitive Peak Reverse Voltage, T_j=25°C	V_{RRM}		650	V
Maximum DC Forward Current (1)	I_F	T_C = 107°C	200	A
Non-Repetitive Forward Surge Current (1)	I_{FSM}	T_C = 25°C, 8.3ms Half Sine Pulse	TBD	A
Non-Repetitive Avalanche Energy (1)	E_{AS}	T_j = 25°C, L = 10mH, Ipk=TBD, V_{DD}=100V	TBD	mJ
Maximum Junction Temperature	$T_{J,max}$		175	°C
Operating and Storage Temperature	T_J, T_{STG}		-55 to 175	°C

(1) Assumes a maximum junction-to-case thermal resistance of 0.15°C/W.

Electrical Characteristics

T_J = +25°C unless otherwise specified

Parameter	Symbol	Test Conditions	Value			Units
			Min	Typ	Max	
Forward Voltage	V_F	I_F = 200A, T_J = 25°C	-	1.5	1.7	V
		I_F = 200A, T_J =175°C	-	1.95	2.25	
Reverse Current	I_R	V_R=400V, T_j=25°C	-	10		μA
		V_R=650V, T_j=25°C	-	350	1200	
		V_R=650V, T_J=175°C	-	TBD		
Total Capacitive Charge (2)	Q_C	V_R=400V		386		nC
Total Capacitance	C	V_R=1V, f=1MHz		5,000		pF
		V_R=300V, f=1MHz		640		
		V_R=600V, f=1MHz		580		

(2) Q_C is obtained by integrating the C-V curve.

Typical Performance

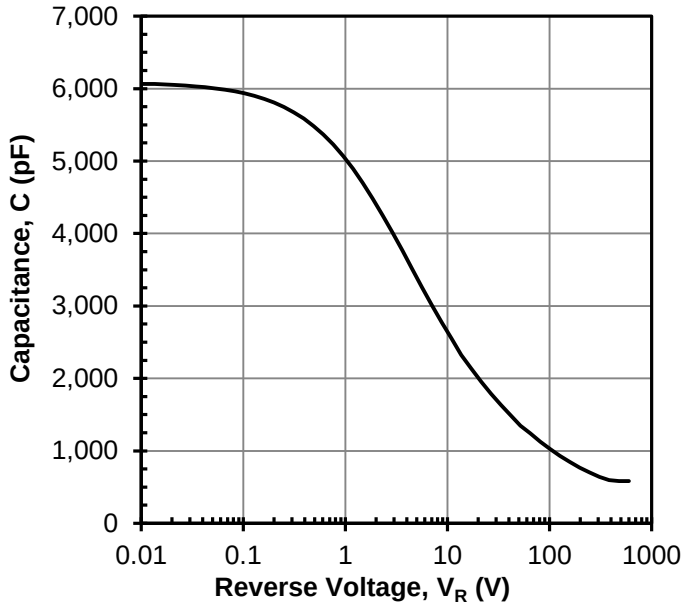


Figure 1 Capacitance vs. reverse voltage

Mechanical Characteristics

Parameter	Typical Value	Units
Die Dimensions (L x W)	4.5 x 7.2	mm
Top Anode Pad Opening (L x W)	4.27 x 6.97	mm
Wafer Size	150	mm
Anode Metallization (Al)	5	μm
Cathode Metallization (Ti/Ni/Ag)	0.1/0.2/1	μm
Die Thickness	150	μm

Disclaimer

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