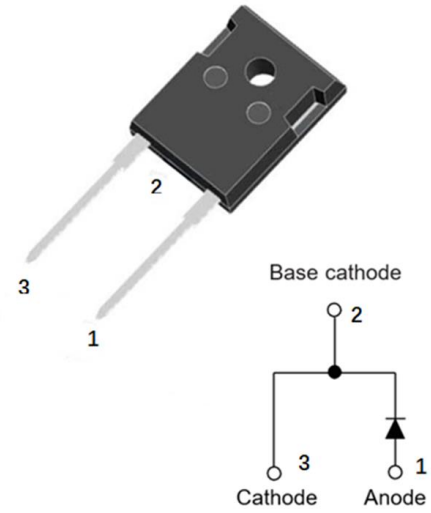
Silicon Carbide Schottky Diode

V_{RRM}	1200V
$I_{F\ 135°C}$	20A
Q_C	53nC



Features

Positive temperature coefficient
Temperature-independent switching
Maximum working temperature at 175 °C
Unipolar devices and zero reverse recovery current
Zero forward recovery current
Essentially no switching losses
Reduction of heat sink requirements
High-frequency operation
Reduction of EMI

Typical Applications

Typical applications are in power factor correction(PFC), solar inverter, uninterruptible power supply, motor drives, photovoltaic inverter, electric car and charger.

Mechanical Data

Package: TO-247AC
Terminals: Tin plated leads
Polarity: As marked

Maximum Ratings (T_C=25 Unless otherwise specified

PARAMTETER	SYMBOL	UNIT	VALUE
Device marking code			D112010NQG2
Reverse voltage (repetitive peak) @ T_j=25°C	V_{RRM}	V	1200
Reverse voltage (Surge Peak) @ T_j=25°C	V_{RSM}	V	1200
Reverse voltage (DC) @ T_j=25°C	V_{DC}	V	1200
Continuous forward current @ T_c=25°C T_c=135°C T_c=163°C	I_F	A	40 20 10
Non-repetitive peak forward surge current @ T_c=25°C, tp=10ms, Half Sine Wave	I_{FSM}	A	85
Power Dissipation@ T_c=25°C T_c=110°C	P_{TOT}	W	266 115
i^2t Value@ Tc=25°C ,tp=10ms	i^2dt	A^2S	36
Operating junction and Storage temperature range	T_j , T_{stg}	°C	-55 to +175

Electrical Characteristics

PARAMTETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	I_F=10A, T_j=25°C	1.42	1.54
			I_F=10A, T_j=175°C	2.1	
Reverse leakage current	I_R		V_R=1200V, T_j=25°C	1.3	13
			V_R=1200V, T_j=175°C	6	
Total capacitive charge	Q_C	nC	V_R=800V, T_j=25°C , $\int_0^{VR} C(V)dV$	53	
Total capacitance	C	pF	V_R=0V, f=1MHZ	700	
			V_R=400V, f=1MHZ	49	
			V_R=800V, f=1MHZ	39	
Capacitance Stored Energy	E_C		V_R=800V	14	

Thermal Characteristics T_a=25 Unless otherwise specified

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	$R_{\theta JC}$	°C /W	0.56

Characteristics (Typical)

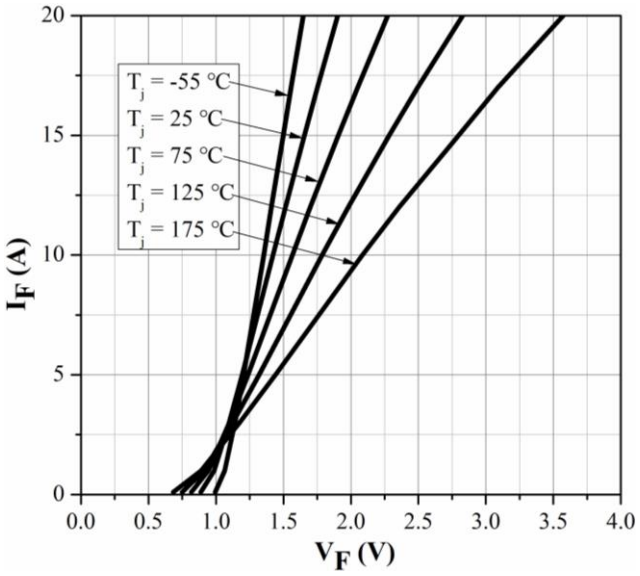


Figure 1. Forward Characteristics

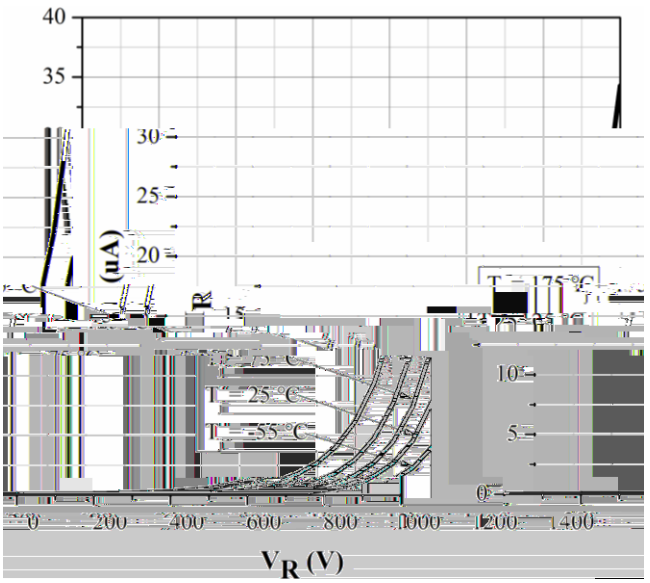


Figure2. Reverse Characteristic

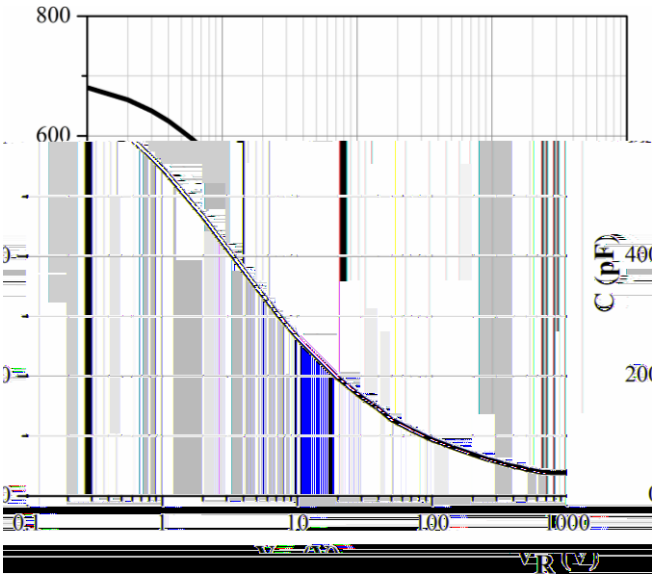


Figure 3. Capacitance vs. Reverse Voltage

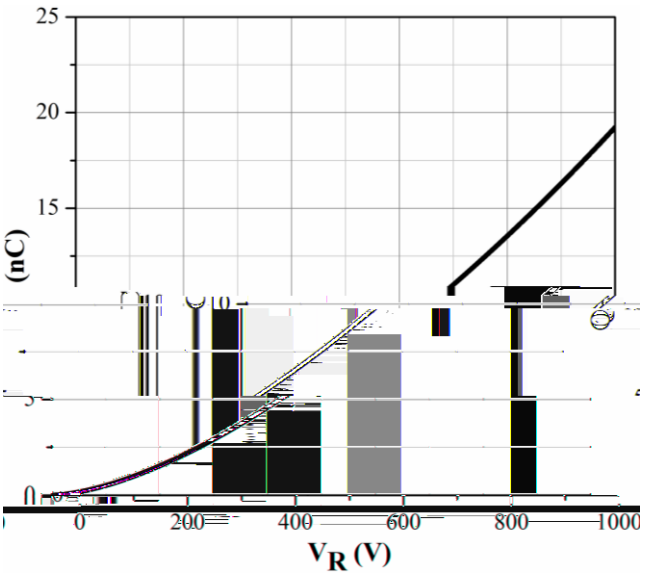


Figure 4. Total Capacitance Charge vs. Reverse Voltage

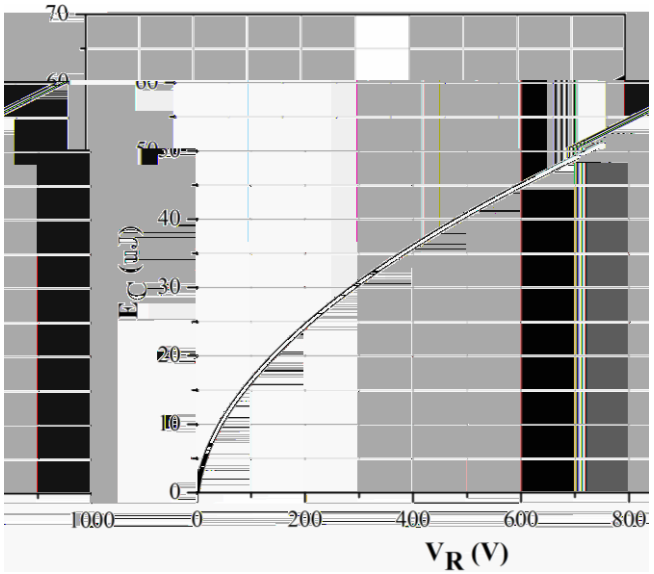


Figure 5. Capacitance Stored Energy

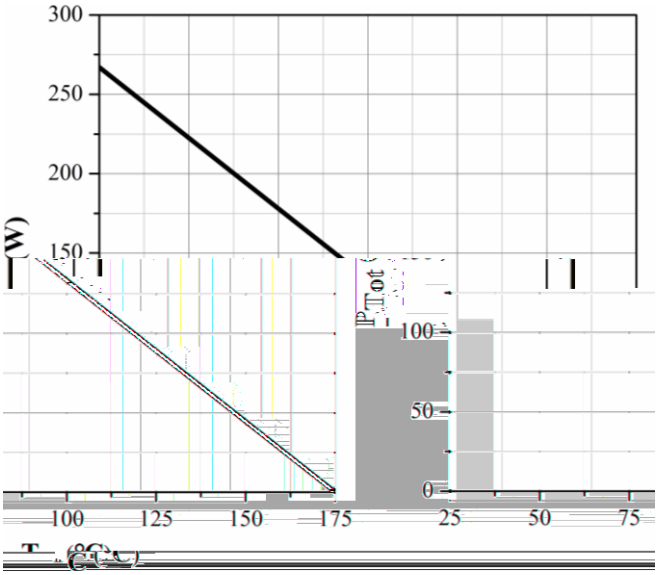


Figure 6. Power Derating

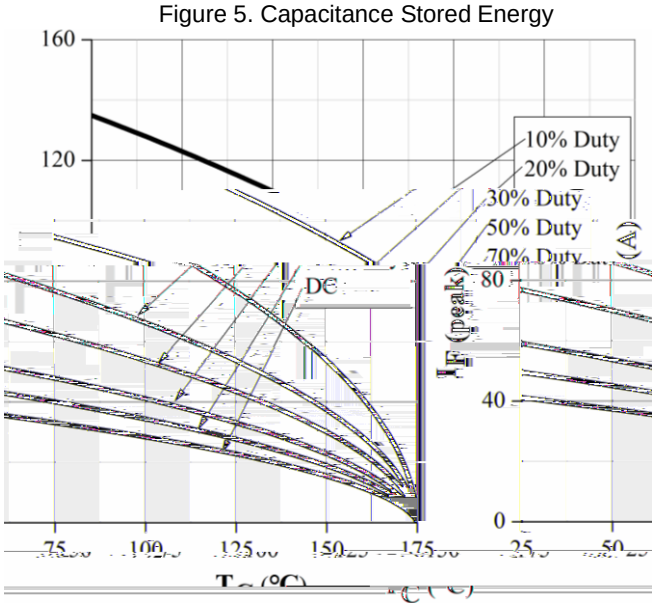


Figure 7. Current Derating

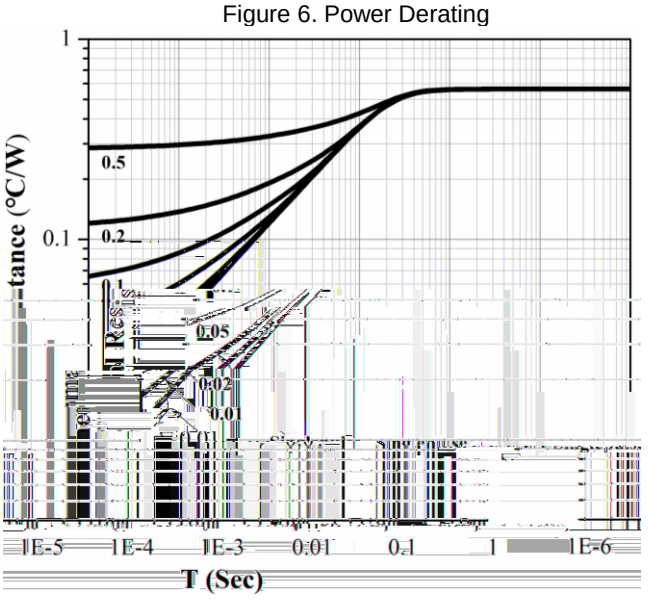


Figure 8. Transient Thermal Impedance

Outline Dimensions

TO247-AC		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61

Disclaimer

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