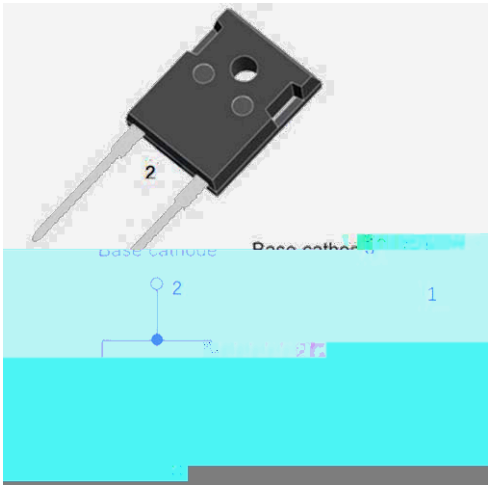
Silicon Carbide Schottky Diode

V_{RRM}	1700V
$I_{F(135°C)}$	20A
Q_C	175nC



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
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads
- **Polarity**: As marked

■Maximum Ratings (T_C=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D117010NYG5
Reverse voltage (Repetitive peak) @ T_j=25°C	V_{RRM}	V	1700
Reverse voltage (Surge peak) @ T_j=25°C	V_{RSM}	V	1700
Reverse voltage (DC) @ T_j=25°C	V_{DC}	V	1700
Continuous forward current @ T_C=25°C	I_F	A	43
Continuous forward current @ T_C=135°C			20
Continuous forward current @ T_C=162°C			10
Non-repetitive peak forward surge current @ T_C=25°C, tp=10ms, Half Sine Wave	I_{FSM}	A	160
Power Dissipation@ T_C=25°C	P_{TOT}	W	230
Power Dissipation@ T_C=110°C			100
i^2t Value@ T_C=25°C ,tp=10ms	i^2dt	A^2S	128
Operating junction and Storage temperature range	T_j ,T_{stg}	°C	-55 to +175

■Electrical Characteristics (T_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Min.	Typ.	Max.
Reverse voltage (DC)	V_{DC}	V	I_R=0.25mA, T_j=25°C	1700		
Forward voltage	V_F	V	I_F=10A, T_j=25°C		1.30	1.55
			I_F=10A, T_j=175°C		1.82	
Reverse current	I_R	μA	V_R=1700V, T_j=25°C		0.5	25
			V_R=1700V, T_j=175°C		20	
Total capacitive charge	Q_C	nC	V_R=1700V, T_j=25°C , $Q_C=\int_0^{VR} C(V)dV$		175	
Total capacitance	C	pF	V_R=0V, f=1MHZ		1565	
			V_R=800V, f=1MHZ		74	
			V_R=1700V, f=1MHZ		72	
Capacitance stored energy	E_C	μJ	V_R=1700V		112	

■Thermal Characteristics

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	$R_{\theta J-C}$	°C /W	0.65

■Typical Characteristics (Typical)

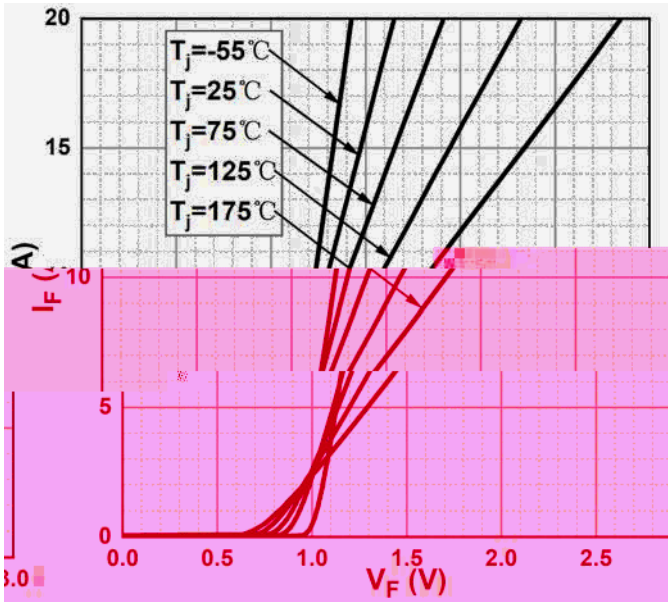


Figure 1. Forward Characteristics

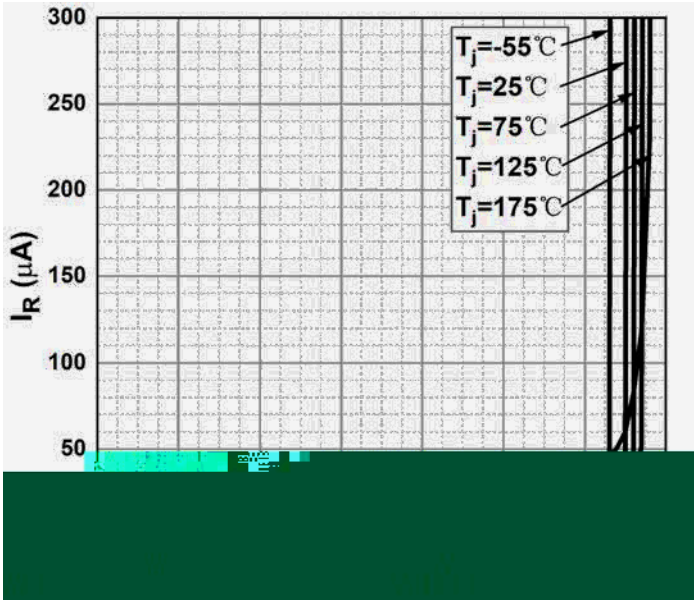


Figure 2. Reverse Characteristics

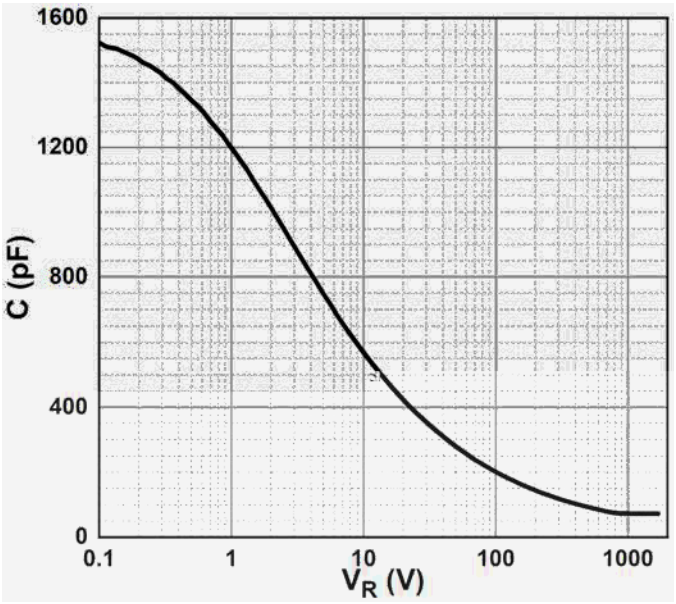


Figure 3. Capacitance vs. Reverse Voltage

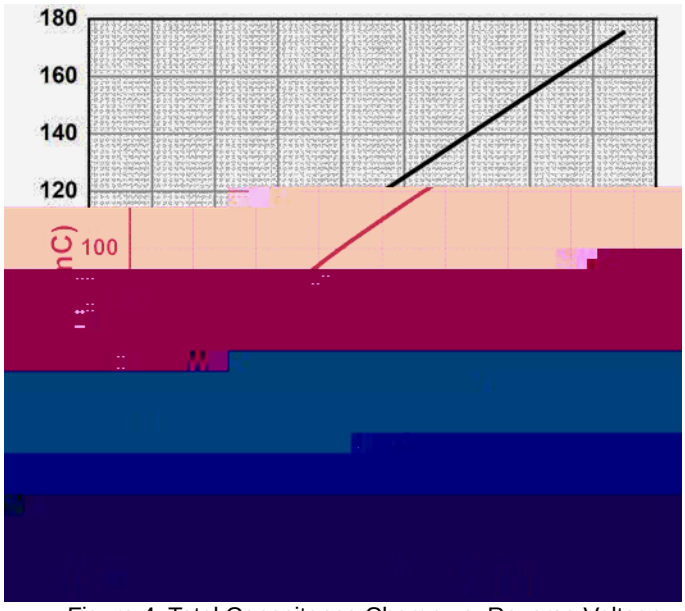


Figure 4. Total Capacitance Charge vs. Reverse Voltage

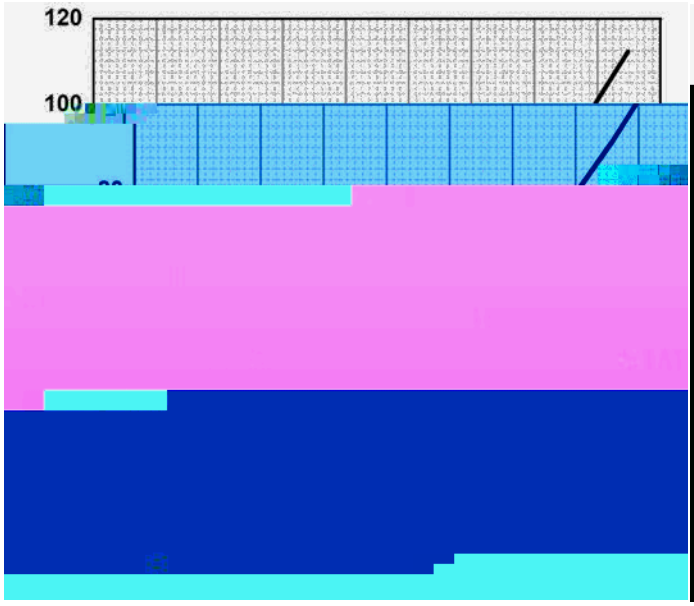


Figure 5. Capacitance Stored Energy

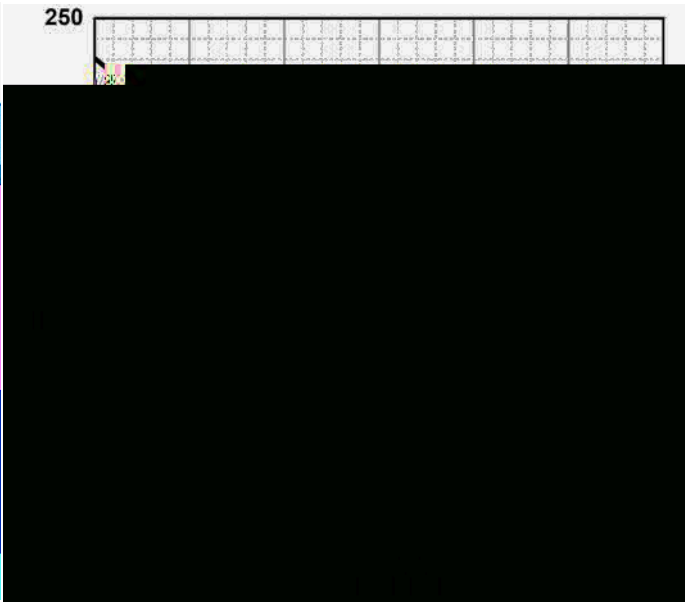


Figure 6. Power Derating

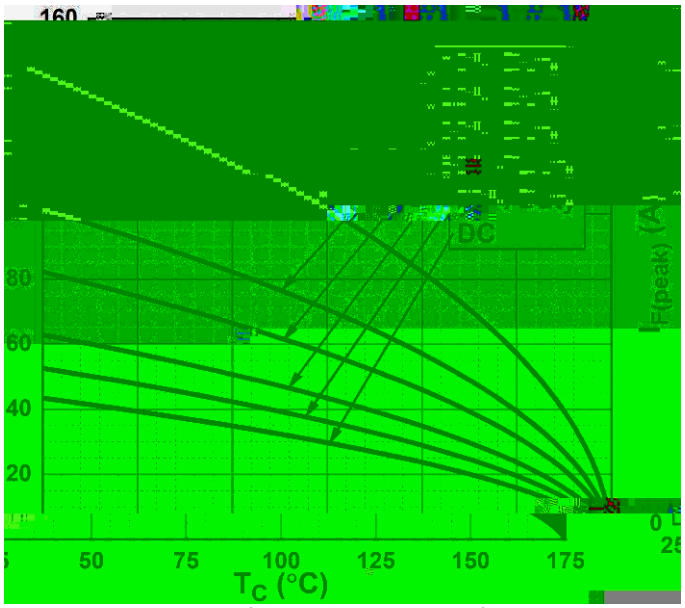


Figure 7. Current Derating

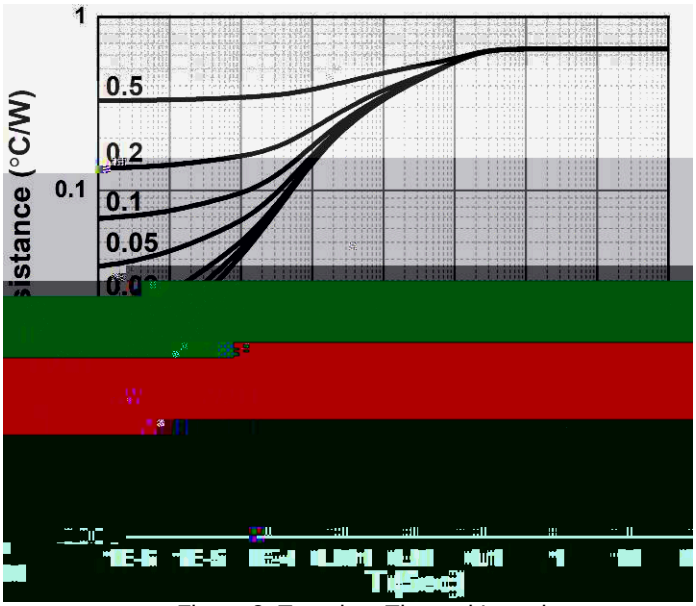


Figure 8. Transient Thermal Impedance

■Outline Dimensions

TO-247AC		
Dim	Min	Max

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website http:// www.21yangjie.com , or consult your nearest Yangjie's sales office for further assistance.