



Silicon Carbide Schottky Diode

V_{RRM}	650V
I_F 135°C	13A
Q_C	60nC



Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175 °C
- Unipolar devices and zero reverse recovery current
- Zero forward recovery voltage
- Essentially no switching losses
- Reduction of heat sink requirements
- AEC-Q101 qualified
- 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 ($T_c=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D106510NQG2
Reverse voltage (repetitive peak) @ $T_j=25^\circ\text{C}$	V_{RRM}	V	650
Reverse voltage (Surge Peak) @ $T_j=25^\circ\text{C}$	V_{RSM}	V	650
Reverse voltage (DC) @ $T_j=25^\circ\text{C}$	V_{DC}	V	650
Continuous forward current @ $T_c=25^\circ\text{C}$	I_F	A	27
Continuous forward current @ $T_c=135^\circ\text{C}$			13
Continuous forward current @ $T_c=153^\circ\text{C}$			10
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	A	70
Power Dissipation@ $T_c=25^\circ\text{C}$	P_{TOT}	W	126
Power Dissipation@ $T_c=110^\circ\text{C}$			54
i^2t Value@ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$	$\int i^2 dt$	A^2S	24
Operating junction and Storage temperature range	T_j, T_{stg}	$^\circ\text{C}$	-55 to +175

YJD106510NQG2Q

RoHS
COMPLIANT

Characteristics				
PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	
	V _F	V	I _F =10A, T _J =25°C	1.55
			I _F =10A, T _J =175°C	-

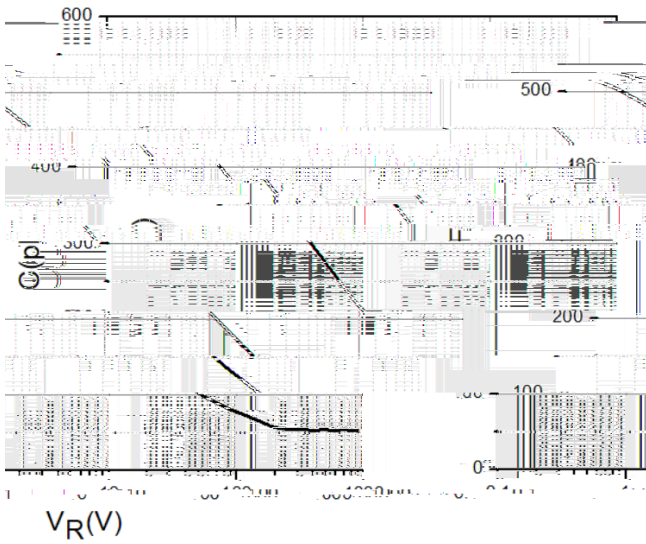


Figure 3. Capacitance vs. Reverse Voltage

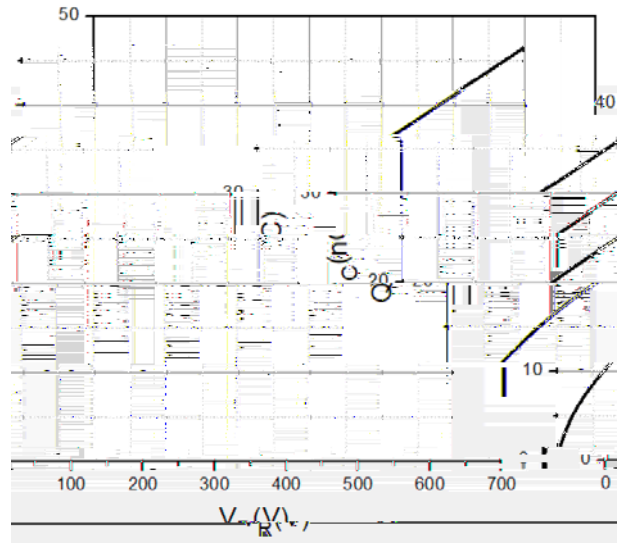


Figure 4. Total Capacitance Charge vs. Reverse Voltage

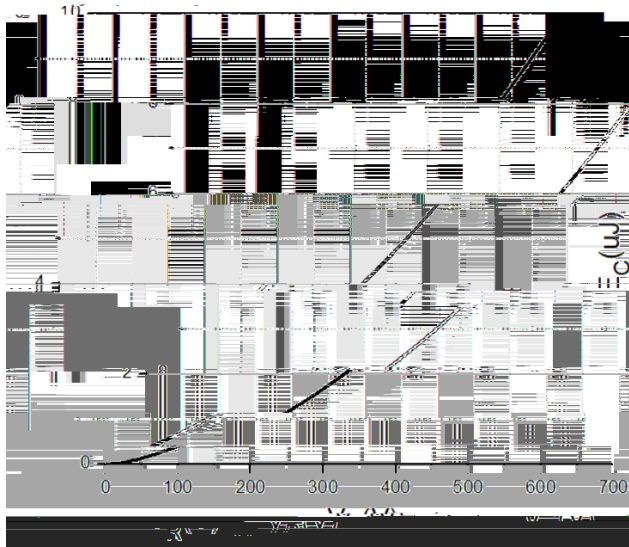


Figure 5. Capacitance Stored Energy



Figure 6. Power Derating

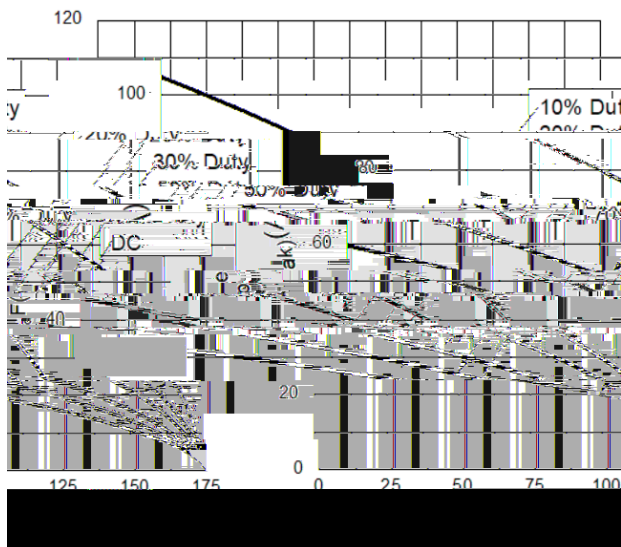


Figure 7. Current Derating

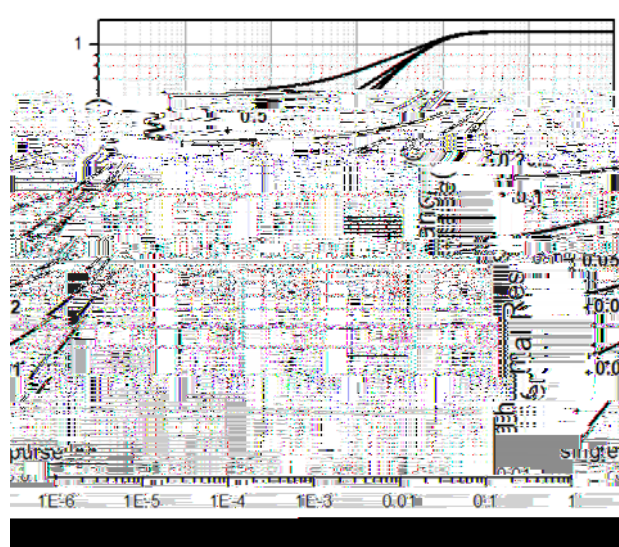
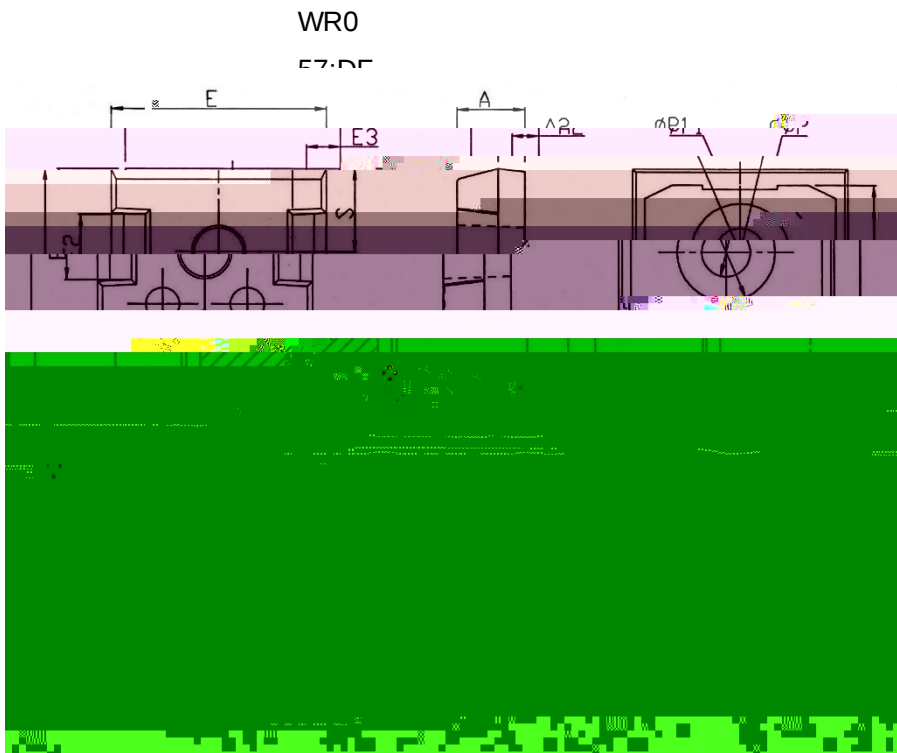


Figure 8. Transient Thermal Impedance



■Outline Dimensions



TO-247AC		
Dim	Min	Max
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.11	1.36
b2	1.91	2.21
c	0.51	0.75
D	20.70	21.30
D1	16.25	16.85
E	15.50	16.10
E1	13.00	13.60
E2	4.80	5.20
E3	2.30	2.70
e	10.88BSC	
L	19.62	20.22
L1	-	4.30
φ P	3.40	3.80
φ P1	-	7.30
S	6.15BSC	

