

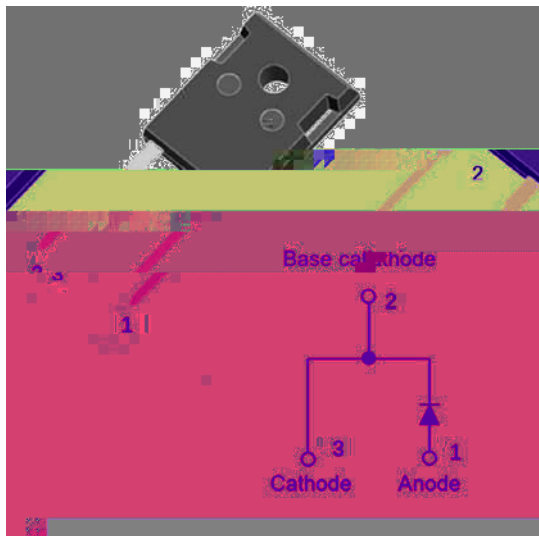
Silicon Carbide Schottky Diode

V_{RRM}	650V
I_F 135°C	26A
Q_C	62nC

Features

- Positive temperature coefficient
- Temperature-independent switching
- Maximum working temperature at 175°C

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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			D106520NQG2
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	56
Continuous forward current @ $T_c=135^\circ\text{C}$			26
Continuous forward current @ $T_c=148^\circ\text{C}$			20
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	A	160
Power Dissipation@ $T_c=25^\circ\text{C}$	P_{TOT}	W	187
Power Dissipation@ $T_c=110^\circ\text{C}$			81
i^2t Value@ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$	$\int i^2 dt$	A^2S	128
Operating junction and Storage temperature range	T_j, T_{stg}	$^\circ\text{C}$	-55 to +175



■Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F=20A, T_J=25^{\circ}C$	1.35	1.55
			$I_F=20A, T_J=175^{\circ}C$	1.75	-
Reverse leakage current	I_R	μA	$V_R=650V, T_J=25^{\circ}C$	1	25
			$V_R=650V, T_J=175^{\circ}C$	5	-
Total capacitive charge	Q_C	nC	$V_R=400V, T_J=25^{\circ}C, Q_C=\int_0^{V_R} I_C(V) dV$	62	-
Total capacitance	C	pF	$V_R=0V, f=1MHz$	1157	-
			$V_R=200V, f=1MHz$	115.6	-
			$V_R=400V, f=1MHz$	107	-
Capacitance Stored Energy	E_C	μJ	$V_R=400V$	7.8	-

■Thermal Characteristics ($T_a=25$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{\theta J-C}$	$^{\circ}C/W$	0.8

■Typical Characteristics

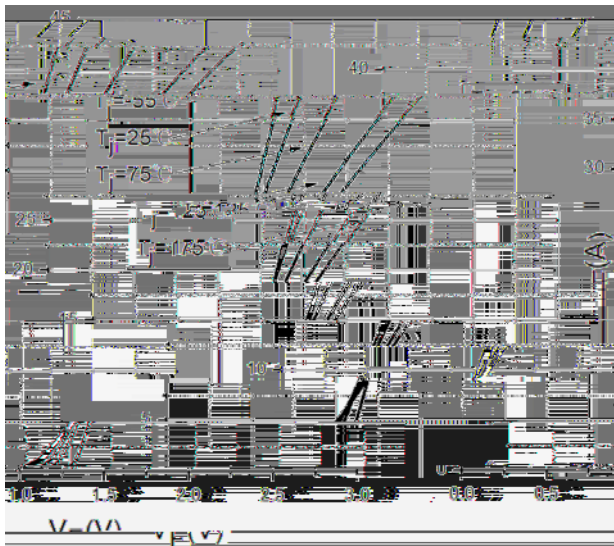


Figure 1. Forward Characteristics

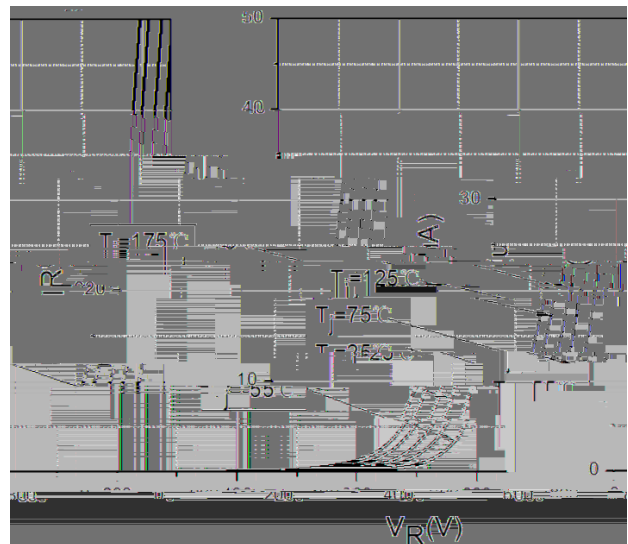


Figure2. Reverse Characteristic



Figure 3. Capacitance vs. Reverse Voltage

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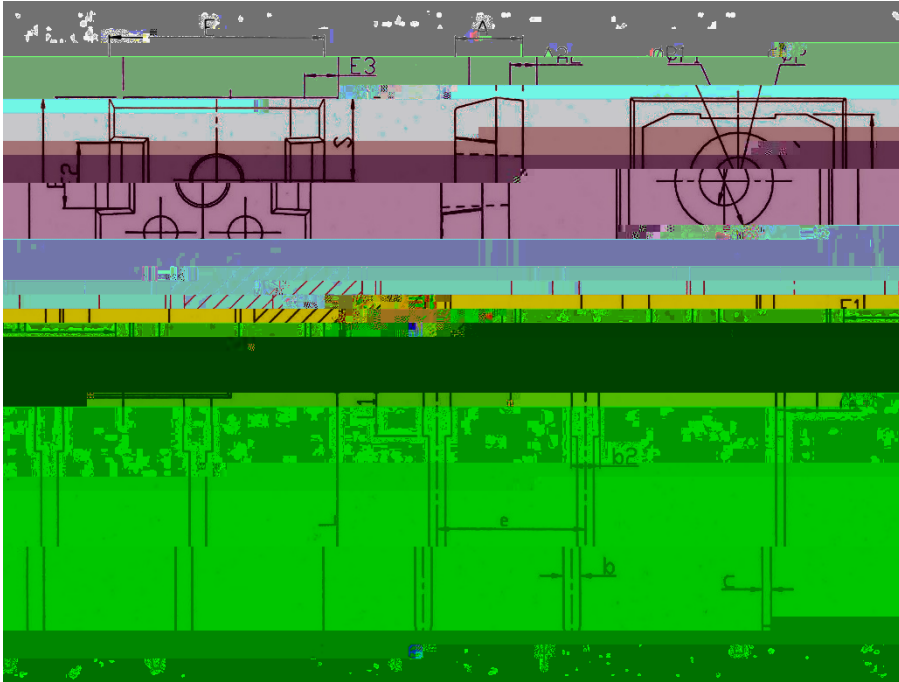
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Dimensions

TO-
247AC



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	

