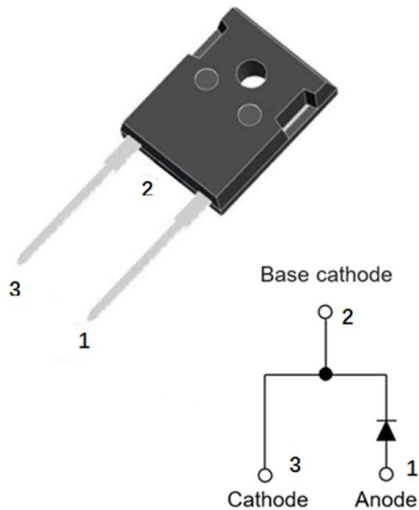


Silicon Carbide Schottky Diode

V_{RRM}	1200V
I_F 135°C	42A
Q_C	162nC



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)

PARAMETER	SYMBOL	UNIT	VALUE
Device marking code			D112030NQG2
Reverse voltage (repetitive peak) @ $T_j=25^\circ\text{C}$	V_{RRM}	V	1200
Reverse voltage (Surge Peak) @ $T_j=25^\circ\text{C}$	V_{RSM}	V	1200
Reverse voltage (DC) @ $T_j=25^\circ\text{C}$	V_{DC}	V	1200
Continuous forward current @ $T_c=25^\circ\text{C}$ $T_c=135^\circ\text{C}$ $T_c=152^\circ\text{C}$	I_F	A	94 43 30
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$, Half Sine Wave	I_{FSM}	A	225
Power Dissipation @ $T_c=25^\circ\text{C}$ $T_c=110^\circ\text{C}$	P_{TOT}	W	416 180
i^2t Value @ $T_c=25^\circ\text{C}$, $t_p=10\text{ms}$	i^2dt	A^2S	253
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	$I_F=30A, T_J=25^{\circ}C$	1.43	1.58
			$I_F=30A, T_J=175^{\circ}C$	1.97	
Reverse leakage current	I_R		$V_R=1200V, T_J=25^{\circ}C$	3.4	30
			$V_R=1200V, T_J=175^{\circ}C$	20.3	
Total capacitive charge	Q_C	nC	$V_R=800V, T_J=25^{\circ}C, \int_0^{V_R} C(V)dV$	162	
Total capacitance	C	pF	$V_R=0V, f=1MHZ$	2179	
			$V_R=400V, f=1MHZ$	152	
			$V_R=800V, f=1MHZ$	118	
Capacitance Stored Energy	E_C		$V_R=800V$	42	

Thermal Characteristics $T_a=25$ Unless otherwise specified

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	$R_{\theta c}$	$^{\circ}C/W$	0.36

Characteristics (Typical)

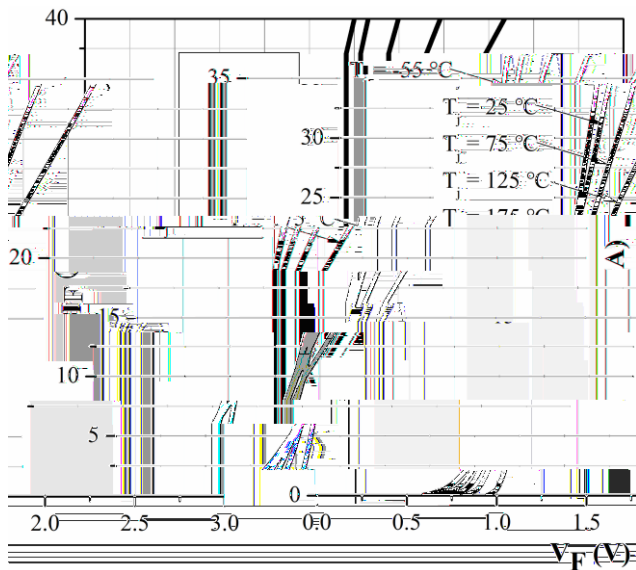


Figure 1. Forward Characteristics

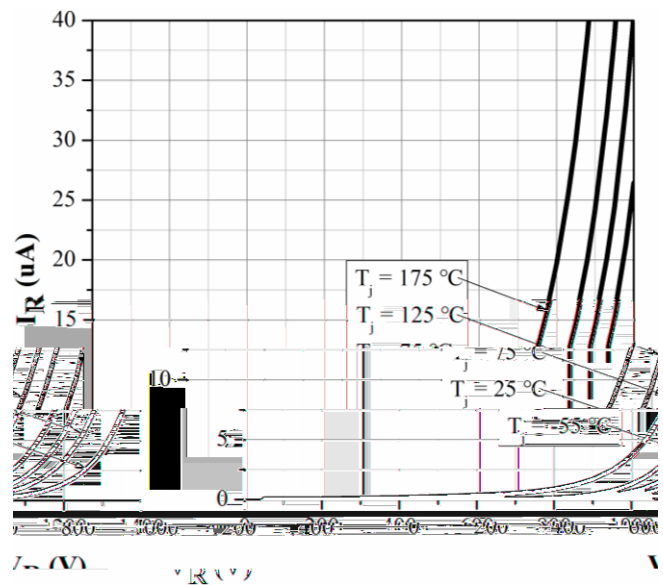
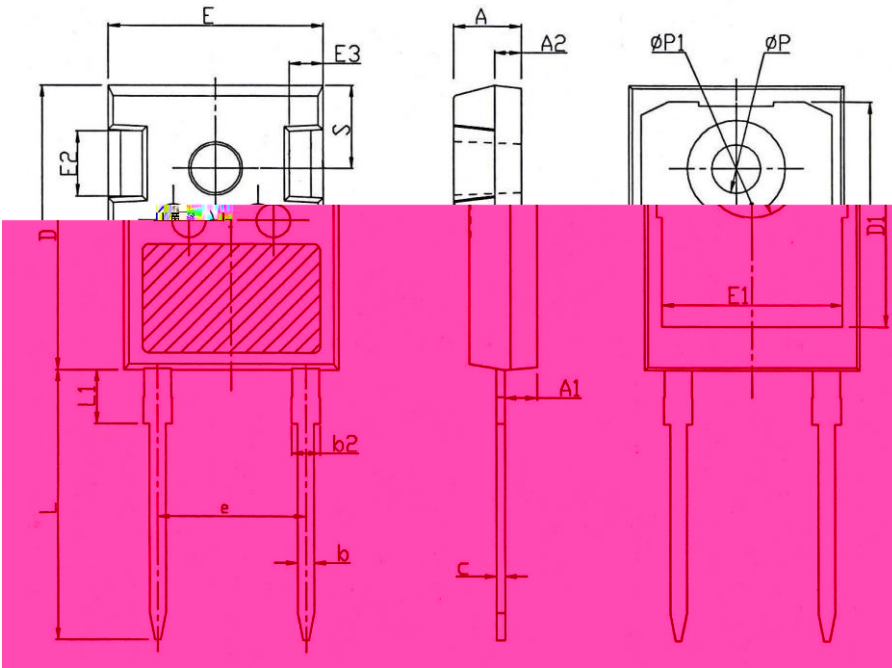


Figure 2. Reverse Characteristic

Outline Dimensions



TO247-AC		
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
	3.40	3.80
	-	7.30
S	6.15BSC	



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