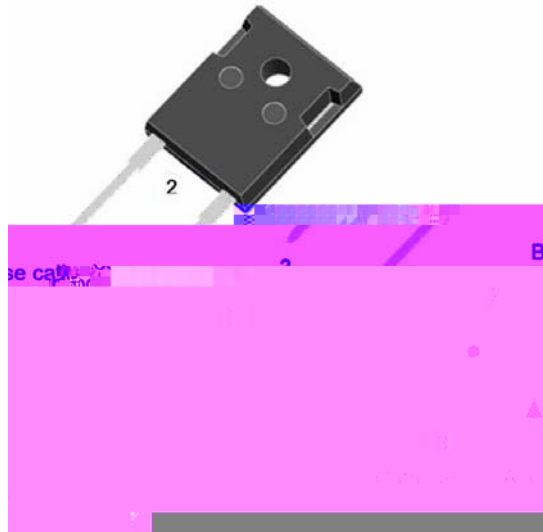


## Silicon Carbide Schottky Diode

$V_{RRM}$	650V
$I_F$ (135°C)	56A
$Q_C$	135nC



### 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
- 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			D106550NQG3
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	119
Continuous forward current @ $T_c=135^\circ\text{C}$			56
Continuous forward current @ $T_c=143^\circ\text{C}$			50
Non-repetitive peak forward surge current @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$ , Half Sine Wave	$I_{FSM}$	A	380
Power Dissipation @ $T_c=25^\circ\text{C}$	$P_{TOT}$	W	454
Power Dissipation @ $T_c=110^\circ\text{C}$			196
$i^2t$ Value @ $T_c=25^\circ\text{C}$ , $t_p=10\text{ms}$	$i^2t$	$\text{A}^2\text{S}$	722
Operating junction and Storage temperature range	$T_j, T_{stg}$	$^\circ\text{C}$	-55 to +175



# YJD106550NQG3

## Electrical Characteristics (Per Leg)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	$V_F$	V	$I_F=50A, T_J=25^\circ C$	1.45	1.6
			$I_F=50A, T_J=175^\circ C$	1.9	-
Reverse leakage current	$I_R$	$\mu A$	$V_R=650V, T_J=25^\circ C$	3	25
			$V_R=650V, T_J=175^\circ C$	20	-
Total capacitive charge	$Q_C$	nC	$V_R=400V, T_J=25^\circ C, Q_C = \int_0^{V_R} I_R(V) dV$	135.3	-
Total capacitance	C	pF	$V_R=0V, f=1MHz$	2453	-
			$V_R=200V, f=1MHz$	247	-
			$V_R=400V, f=1MHz$	243	-
Capacitance Stored Energy	$E_C$	$\mu J$	$V_R=400V$	16.5	-

## Thermal Characteristics ( $T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Thermal resistance	$R_{J-C}$	$^\circ C/W$	0.33

## Typical Characteristics

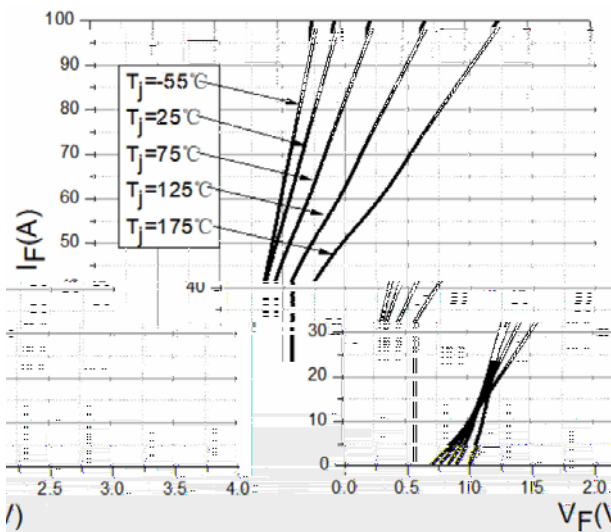


Figure 1. Forward Characteristics

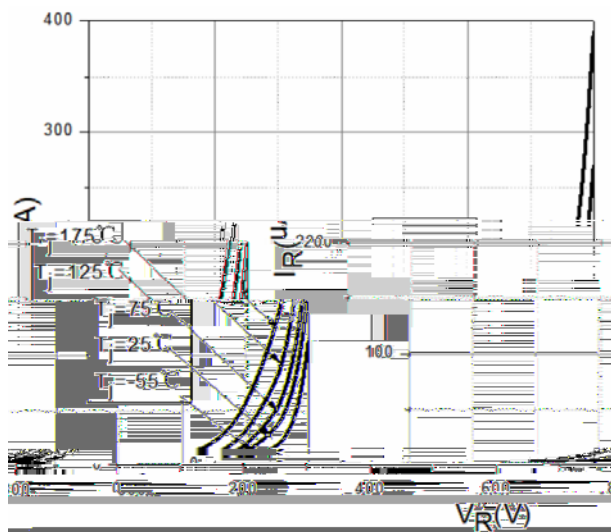


Figure 2. Reverse Characteristic

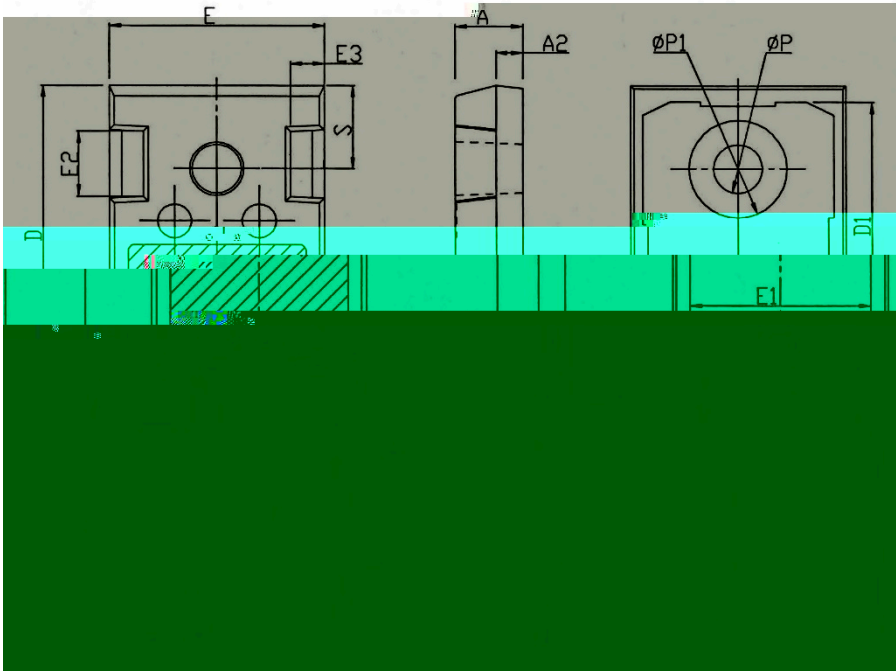




# YJD106550NQG3

## Outline 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
$\phi P$	3.40	3.80
$\phi P1$	-	7.30
S	6.15BSC	



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