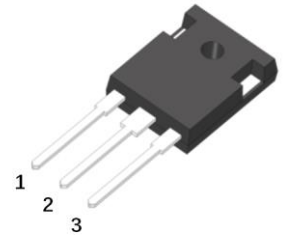


## Silicon Carbide Schottky Diode

### Features

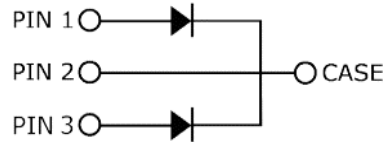
- 1200V Schottky Rectifier
- Zero Reverse Recovery Current
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching

### Package



### Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway



**TO-247-3L**

### Applications

- Switch Mode Power Supplies (SMPS)
- Power Factor Correction
- Motor Drives

### Maximum Rated Values ( $T_C=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
$V_{RRM}$	Repetitive Peak Reverse Voltage	1200	V		
$V_R$	DC Peak Reverse Voltage	1200	V		
$I_{FRM}$	Repetitive Peak Forward Surge Current	340	A	$T_C=25^{\circ}\text{C}$ , $t_P=10$ ms, Half Sine Pulse	
		267		$T_C=110^{\circ}\text{C}$ , $t_P=10$ ms, Half Sine Pulse	
$I_{FSM}$	Non-Repetitive Forward Surge Current	432	A	$T_C=25^{\circ}\text{C}$ , $t_P=10$ ms, Half Sine Pulse	
		333		$T_C=110^{\circ}\text{C}$ , $t_P=10$ ms, Half Sine Pulse	
$T_J$	Operating Temperature	-55 to +175	$^{\circ}\text{C}$		
$T_{stg}$	Storage Temperature	-55 to +175	$^{\circ}\text{C}$		
	TO-247 Mounting Torque	1 8.8	Nm lbf-in	M3 Screw 6-32 Screw	

**Electrical Characteristics (T<sub>J</sub>=25°C)**

Symbol	Parameter	Value			Unit	Test Conditions	Note
		Min.	Typ.	Max.			
V <sub>F</sub>	Forward Voltage		1.42		V	I <sub>F</sub> =50A, T <sub>J</sub> =25°C	Fig. 1
			2.51			I <sub>F</sub> =50A, T <sub>J</sub> =175°C	
I <sub>R</sub>	Reverse Current		15		μA	V <sub>R</sub> =1200V, T <sub>J</sub> =25°C	Fig. 2
			200			V <sub>R</sub> =1200V, T <sub>J</sub> =175°C	
Q <sub>C</sub>	Total Capacitive Charge		423		nC	V <sub>R</sub> =800V, T <sub>J</sub> =25°C	Fig. 3
C	Total Capacitance		6621		pF	V <sub>R</sub> =0V, T <sub>J</sub> =25°C, f=1MHz	Fig. 4
			381			V <sub>R</sub> =400V, T <sub>J</sub> =25°C, f=1MHz	
			375			V <sub>R</sub> =800V, T <sub>J</sub> =25°C, f=1MHz	
E <sub>C</sub>	Capacitance Stored Energy		105		μJ	V <sub>R</sub> =800 V	Fig. 5

**Thermal Characteristics**

Symbol	Parameter	Value	Unit	Note
R <sub>θJC</sub>	Thermal Resistance(Junction to Case)	0.17	°C/W	

Typical Performance

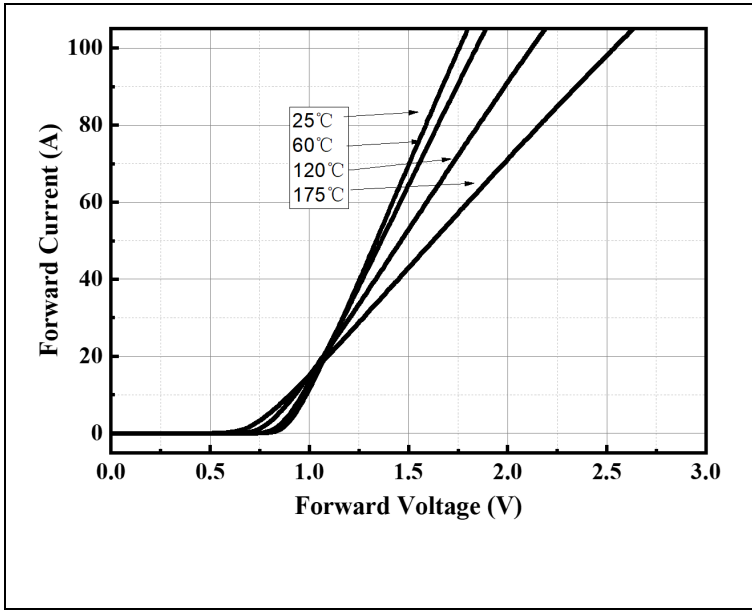


Figure 1. Forward Characteristics

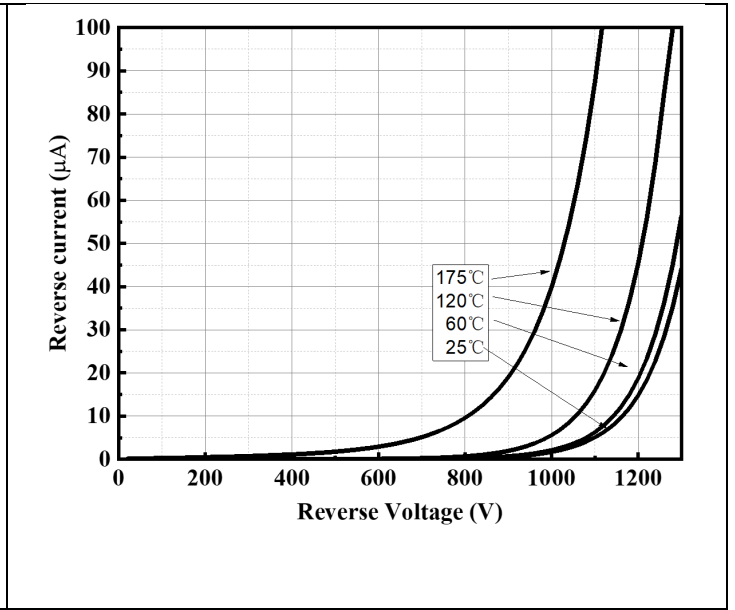


Figure 2. Reverse Characteristics

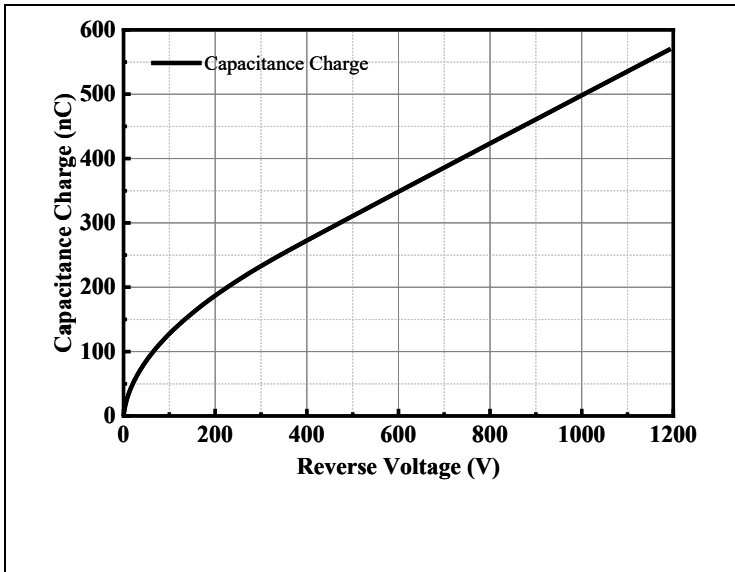


Figure 3. Capacitive Charge Vs. Reverse Voltage

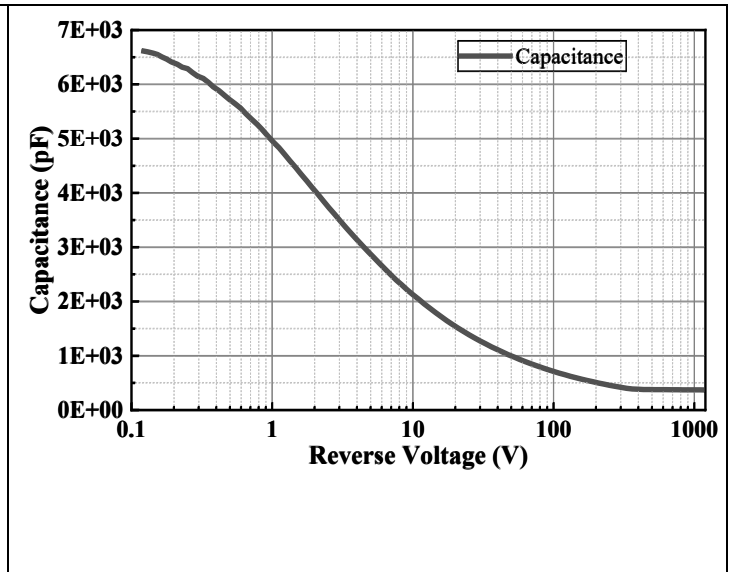


Figure 4. Capacitance Vs. Reverse Voltage

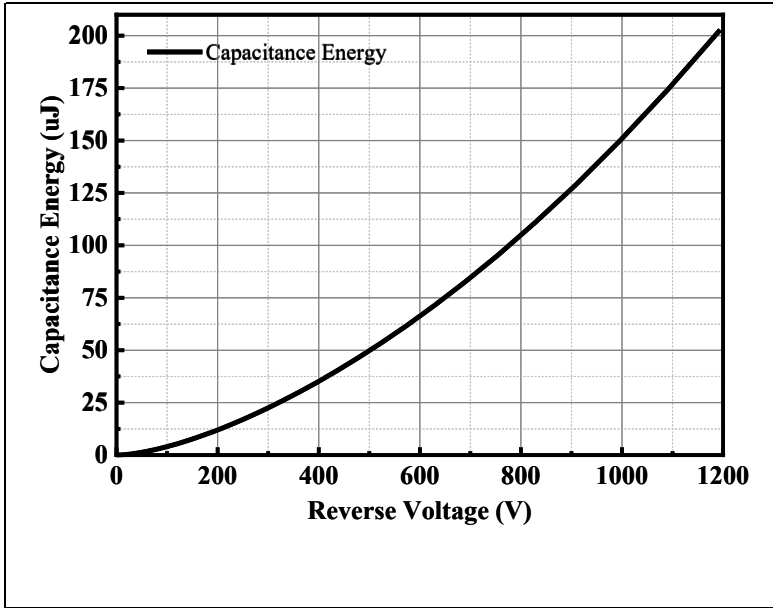
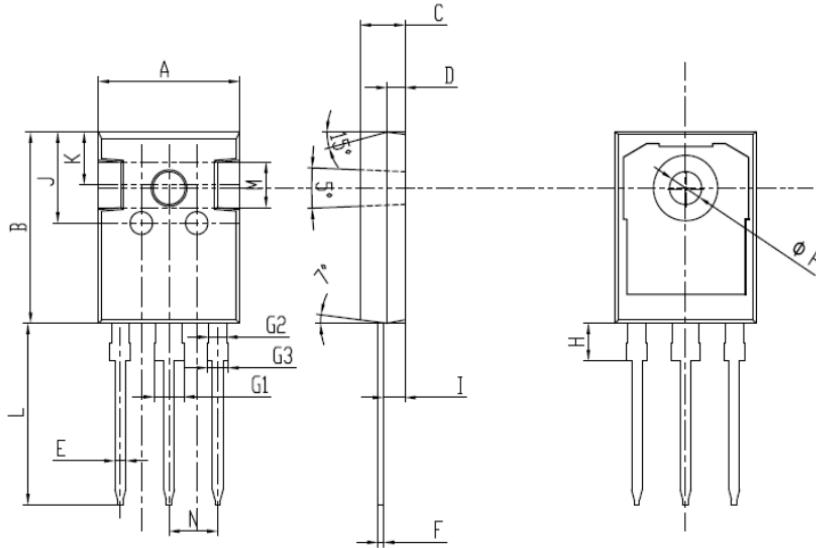


Figure 5. Capacitance Stored Energy

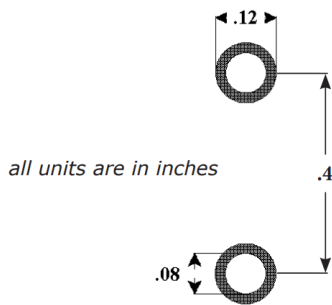
Package Dimensions

Package TO-247-3L



项目	规范(mm)	
	MIN	MAX
A	15.70	15.90
B	20.90	21.10
C	4.90	5.10
D	1.90	2.10
E	1.10	1.30
F	0.45	0.75
G1	3.00	3.20
G2	1.85	2.15
G3	2.00	2.20
H	4.00	4.30
I	2.30	2.50
J	9.90	10.10
K	5.70	5.90
L	19.80	20.20
M	4.85	5.15
N	5.286	5.586
φ P	3.40	3.60

Recommended Solder Pad Layout



TO-247-2L

Part Number	Package	Marking
	TO-247-3L	