



# SiC Schottky Barrier Diode

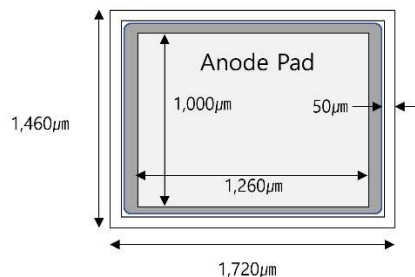
SN0610G4

$V_{RRM} = 650\text{ V}$     $I_F(T_C=150^\circ\text{C}) = 10\text{ A}$     $Q_C = 24\text{ nC}$

## Features

Silicon Carbide Schottky Barrier Diode  
Small Die Size  
Low  $I_R$   
High-Recovery Speed

## Die Structure & Pattern Diagram



## Applications

Switch Mode Power Supplies  
Power Factor Correction  
Secondary Side Rectification  
PV Power Conditioners

## Chip Information

Wafer size	6 inch
Chip size	1,460 * 1,720μm
Chip thickness	350μm
Scribe line width	100μm
Pad diameter	1,000 * 1,260μm
Top metallization	AlCu(Cu 0.5%) for Wire
Back metallization	Ti-Ni-Ag (for Solder)
Chip quantity	5,844 pcs/wafer

## Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Limit	Unit
Repetitive peak reverse voltage	$V_{RM}$		650	V
Reverse voltage (DC)	$V_R$		650	V
Forward voltage (DC)	$I_F$		10	A
Peak surge forward current	$I_{FSM}$	10 ms Sinusoidal	70	A
Junction temperature	$T_j$		175	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to +175	$^\circ\text{C}$

## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
DC blocking voltage	$V_{DC}$	$I_R = 30\text{ }\mu\text{A}$	650	-	-	V
Forward voltage	$V_F$	$I_F = 8\text{ A}$ , $T_a = 25^\circ\text{C}$	-	1.36	1.70	V
		$I_F = 8\text{ A}$ , $T_a = 150^\circ\text{C}$	-	1.64	-	V
		$I_F = 8\text{ A}$ , $T_a = 175^\circ\text{C}$	-	1.73	-	V
Reverse current	$I_R$	$V_R = 650\text{ V}$ , $T_a = 25^\circ\text{C}$	-	0.7	50	$\mu\text{A}$
		$V_R = 650\text{ V}$ , $T_a = 150^\circ\text{C}$	-	7	-	$\mu\text{A}$
		$V_R = 650\text{ V}$ , $T_a = 175^\circ\text{C}$	-	12	-	$\mu\text{A}$
Total capacitance	$C$	$V_R = 1\text{ V}$ , $f = 1\text{ MHz}$	-	329	-	pF
Total capacitive charge	$Q_C$	$V_R = 400\text{ V}$ , $di/dt = 350\text{ A}/\mu\text{s}$	-	24	-	nC
Switching time	$T_C$	$V_R = 400\text{ V}$ , $di/dt = 350\text{ A}/\mu\text{s}$	-	15	-	ns

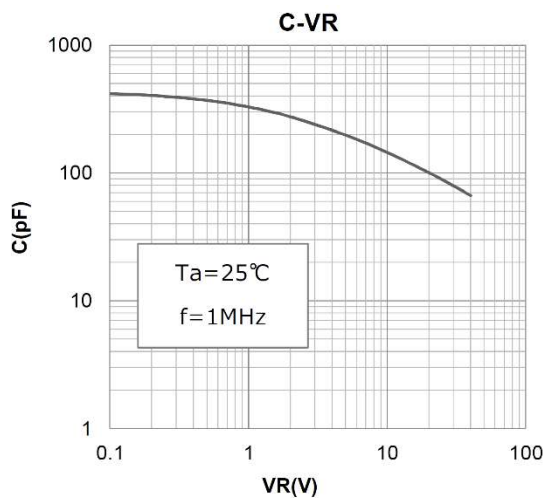
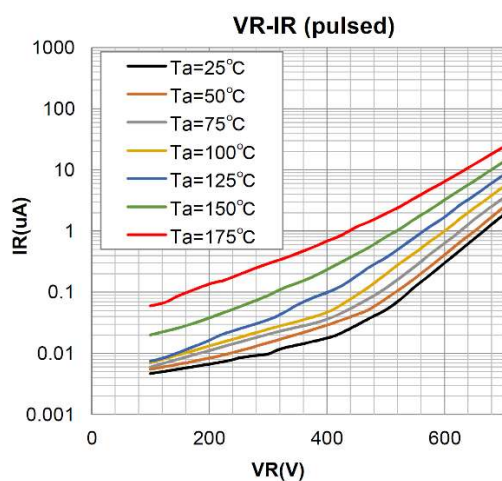
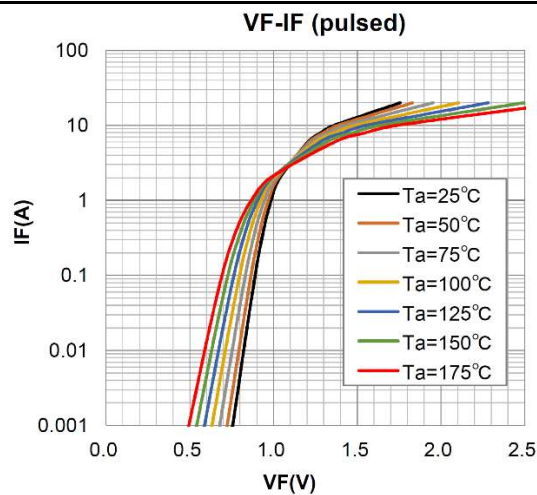
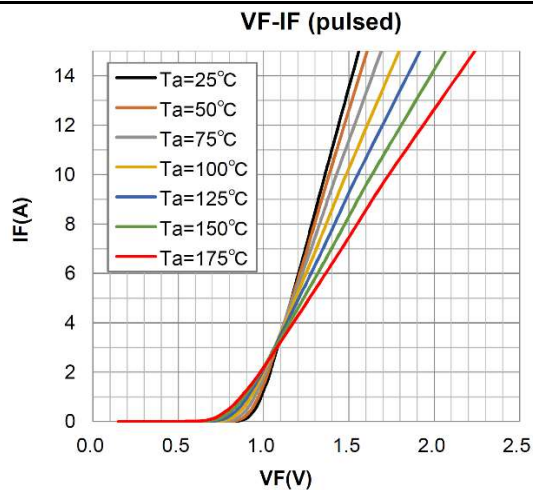


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## Electrical characteristic curves





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3. Since the products are in wafer form, the values in this document are for reference only.
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