



SiC Schottky Barrier Diode

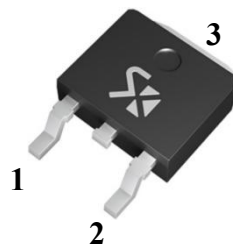
Features

- Negligible reverse recovery
- Benchmark switching behavior
- Positive temperature coefficient
- Temperature-Independent switching
- Pb-free / RoHS compliant

Applications

- Switch mode power supply
- Solar inverter
- Power factor correction
- Uninterruptible power supply

Key Performance Parameters		
Parameter	Value	Unit
V_{RRM}	650	V
$I_F(155^{\circ}\text{C})$	4	A
Q_C	16	nC



TO-252

Absolute Maximum Ratings ($T_C=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter		Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage		V_{RRM}	650	V
Surge Peak Reverse Voltage		V_{RSM}	650	V
Continuous Forward Current	$T_C=25^{\circ}\text{C}$	I_F	14	A
	$T_C=135^{\circ}\text{C}$		7	
	$T_C=155^{\circ}\text{C}$		4	
Repetitive Peak Forward Surge Current ⁽¹⁾		I_{FRM}	37	A
Non-Repetitive Peak Forward Surge Current ⁽¹⁾	$T_C=25^{\circ}\text{C}$	I_{FSM}	42	A
	$T_C=110^{\circ}\text{C}$		38	
Power Dissipation	$T_C=25^{\circ}\text{C}$	P_{tot}	48	W
	$T_C=110^{\circ}\text{C}$		21	
	$T_C=150^{\circ}\text{C}$		8	
Operating Junction and Storage Temperature		T_J, T_{STG}	-55~+175	$^{\circ}\text{C}$

Note:(1).Condition : $t_p = 10\text{ms}$, Half Sine Pulse

Thermal Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$			3.1	$^{\circ}\text{C}/\text{W}$



Electrical Characteristics($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test condition	Min	Typ	Max	Units
DC Blocking Voltage	V_{DC}	$T_C=25^{\circ}\text{C}$	650			V
Forward Voltage	V_F	$I_F=2\text{A}, T_C=25^{\circ}\text{C}$		1.12		V
		$I_F=4\text{A}, T_C=25^{\circ}\text{C}$		1.26	1.5	
		$I_F=4\text{A}, T_C=175^{\circ}\text{C}$		1.5		
Reverse Current	I_R	$V_R=650\text{V}, T_C=25^{\circ}\text{C}$		1	50	μA
		$V_R=650\text{V}, T_C=175^{\circ}\text{C}$		5		
Total Capacitive Charge	Q_C	$V_R=400\text{V}$		16		nC
Total Capacitance	C	$V_R=1\text{V}, f=1\text{MHz}$		233		pF
		$V_R=200\text{V}, f=1\text{MHz}$		28		
		$V_R=400\text{V}, f=1\text{MHz}$		23		
Capacitance Stored Energy	E_C	$V_R=400\text{V}$		2.4		μJ

Typical Characteristics

Figure 1. Forward Characteristics

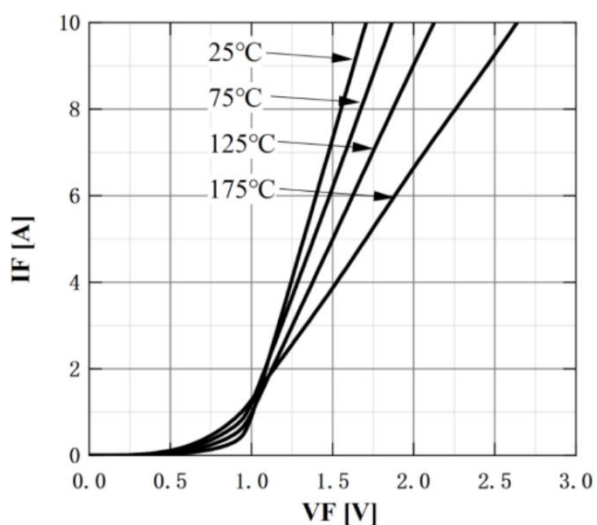


Figure 2. Reverse Characteristics

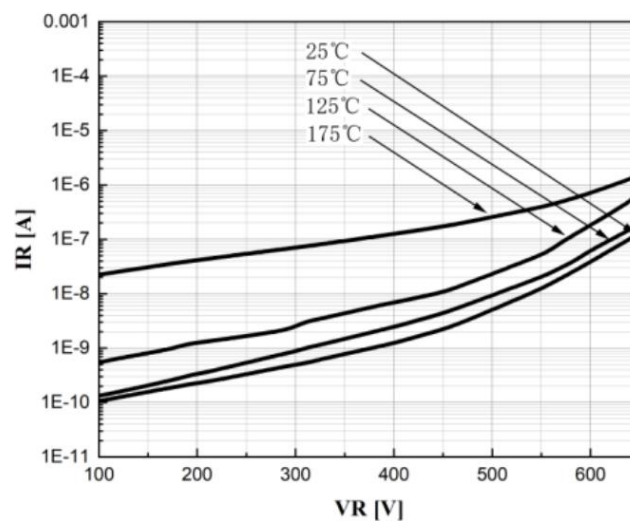




Figure 3.Capacitance vs Reverse Voltage

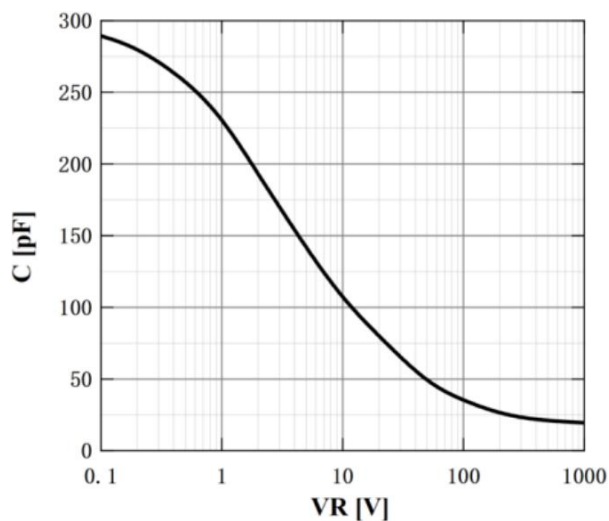


Figure 4.Total Capacitance Charge vs Reverse Voltage

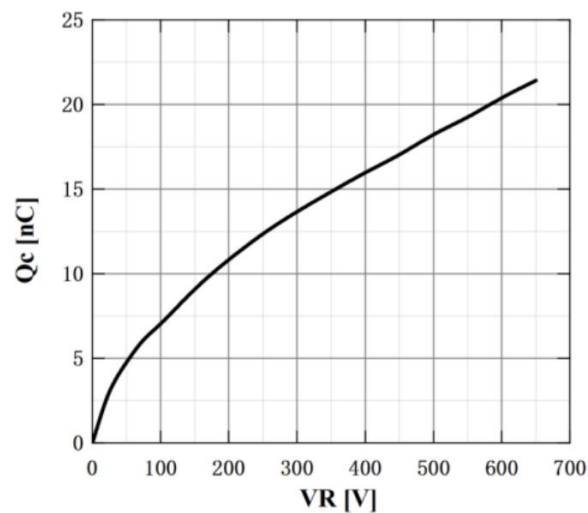


Figure 5.Capacitance Stored Energy

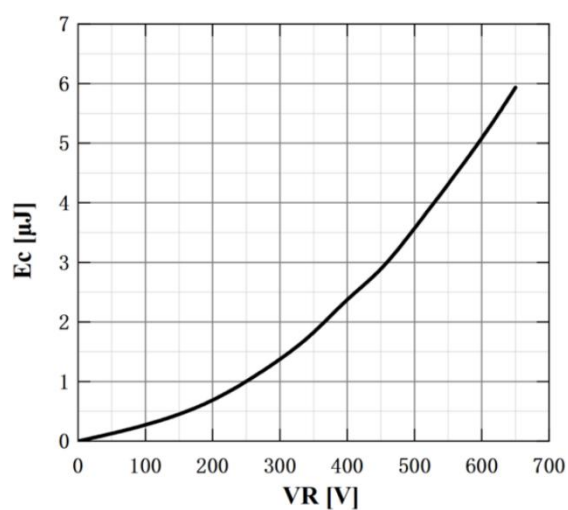


Figure 6.Power Derating

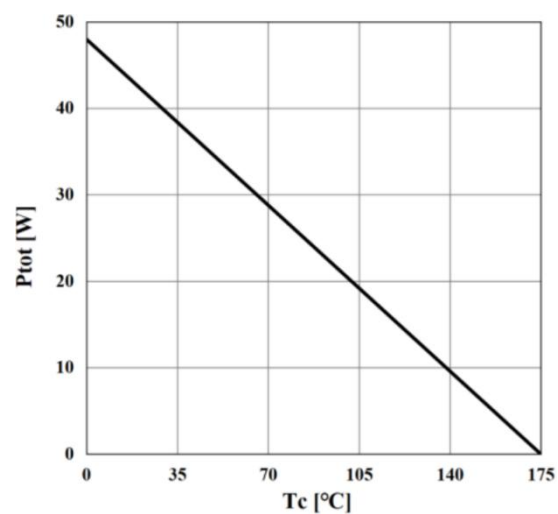
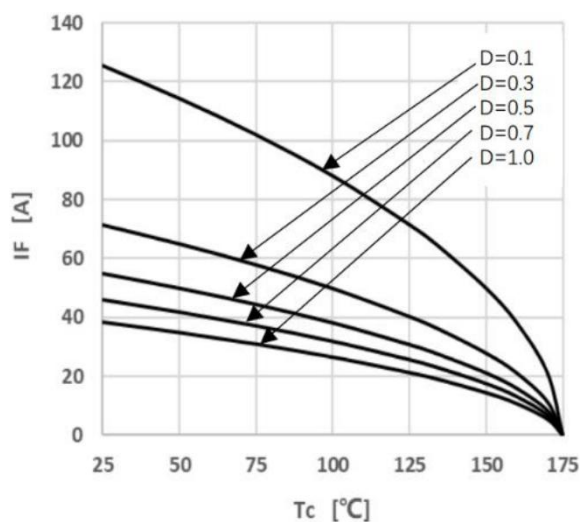


Figure 7.Current Derating

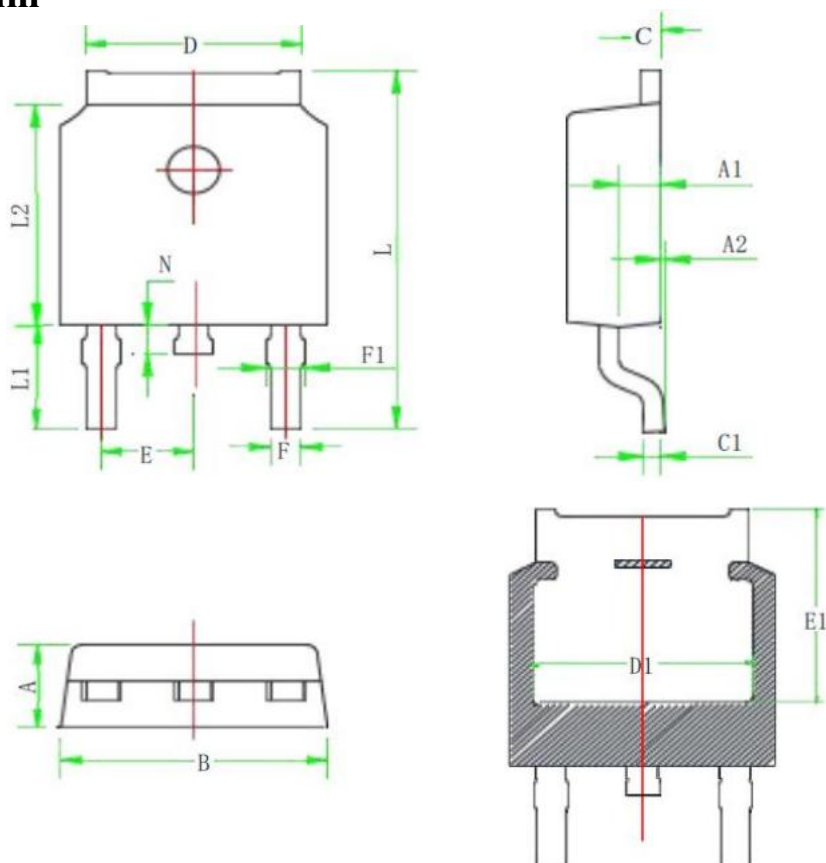




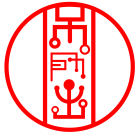
Package Information

TO-252

Dimensions in mm



Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	2.20	2.30	2.40	E	2.20	2.29	2.40
A1	0.91	1.01	1.11	E1	4.95	5.15	5.35
A2	-	-	0.25	F	0.66	0.76	0.86
B	6.50	6.60	6.70	F1	0.70	0.82	0.95
C	0.40	0.50	0.60	L	9.70	9.90	10.10
C1	0.40	0.50	0.60	L1	2.67	2.87	3.07
D	5.15	5.30	5.45	L2	6.00	6.10	6.20
D1	5.10	5.25	5.40	N	0.60	0.80	1.00



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