鼎德丰
DING DE FENG

DDF3D08065E TO-252 SiC Schottky Diodes

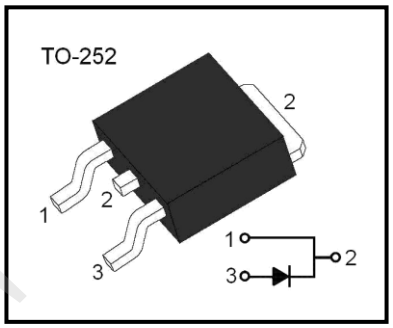
SiC Schottky Barrier Rectifier

Features

- Reverse withstand voltage 650V
- Zero reverse recovery current
- High working frequency
- Switch characteristics are not affected by temperature
- Fast switching speed
- Positive temperature coefficient of positive pressure drop

Application

- Switching mode power supply, AC/DC converter
- Power factor correction
- Motor drive
- PV inverter and wind turbine



Advantages

- Very low switching loss
- Higher efficiency
- Low dependence of the system on the heat sink
- No thermal collapse in parallel devices

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Test conditions	Value	Unit
Peak repetitive reverse voltage	V_{RRM}		650	V
Working peak reverse voltage	V_{RWM}		650	V
DC blocking voltage	V_{DC}		650	V
Average rectified output current	$I_{F(AV)}$	T_C =25℃ T_C =110℃ T_C =150℃	30 14 8	A
Forward repetitive peak current	I_{FRM}	T_C=25℃, tp=10ms,Half Sine Wave T_C=110℃,tp=10ms,Half Sine Wave	45 21.5	A
Forward surge current	I_{FSM}	T_C=25℃, tp=10ms,Half Sine Wave T_C=110℃,tp=10ms,Half Sine Wave	72 55	A
Power dissipation	P_{tot}	T_C =25℃ T_C =110℃	88 38	W
Junction temperature	T_j		-55 ~ +175	℃
Storage temperature	T_{stg}		-55 ~ +175	℃

Thermal characteristics

Parameter	Symbol	Vaule	Unit
Thermal resistance -junction to case	$R_{\theta JC}$	2.55	°C/ W

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward voltage	V_F	I_F = 8 A, T_j=25℃ I_F = 8 A, T_j=175℃		1.4 1.57	1.8 2.4	V
Reverse current	I_R	V_R = 650V, T_j=25℃ V_R = 650V, T_j=175℃		1 15	20 200	μA
Total capacitive charge	Q_C	V_R = 400V, I_F = 8 A di/dt=500A/μs, ,T_j=25℃		11		nC
Total capacitance	C	V_R = 0V, T_j=25℃, f=1MHz V_R = 200V, T_j=25℃, f=1MHz V_R = 400V, T_j=25℃, f=1MHz		580 58 42		pF

Typical Characteristics

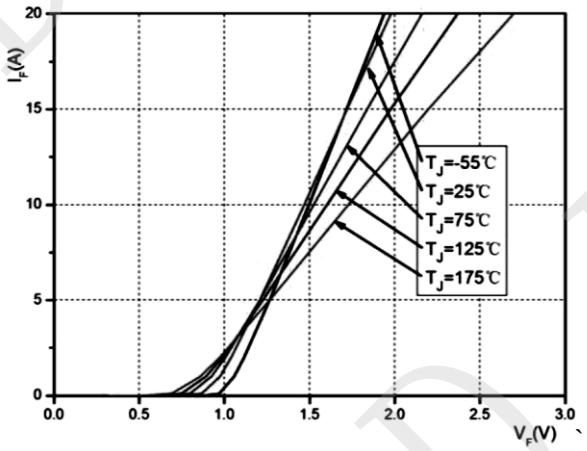


Figure 1. Forward Characteristics

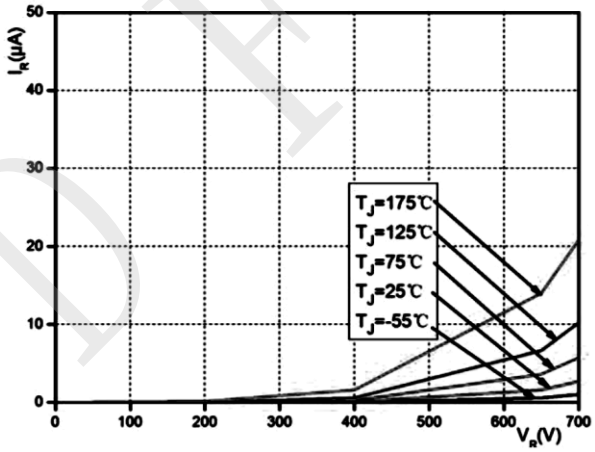


Figure 2. Reverse Characteristics

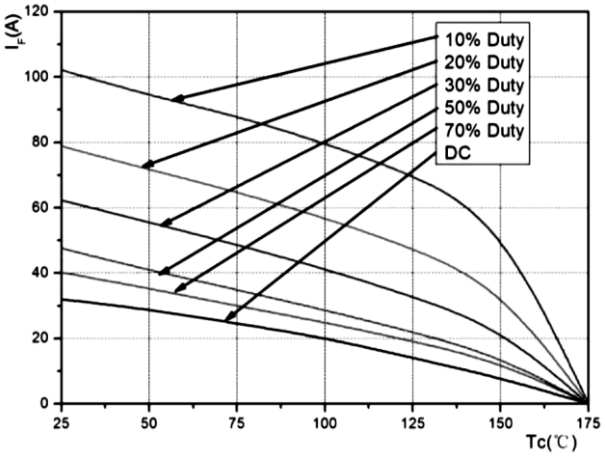


Figure 3. Load current

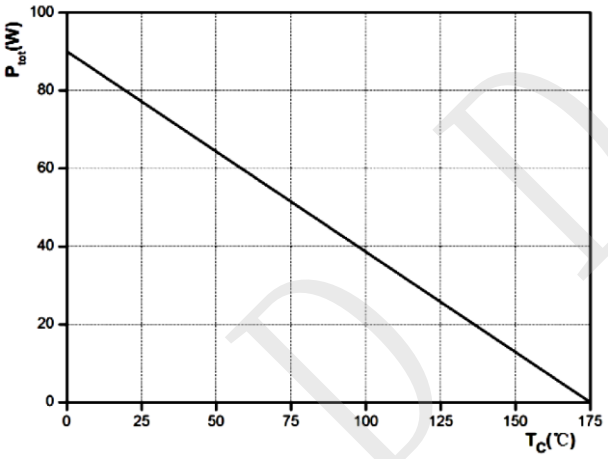


Figure 4. Dissipated power curve

鼎德丰 DING DE FENG

DDF3D08065E TO-252 SiC Schottky Diodes

Typical Characteristics

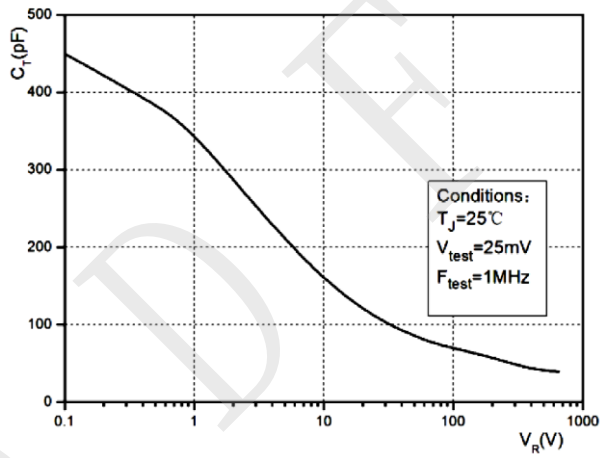


Figure 5. Capacitance vs reverse voltage

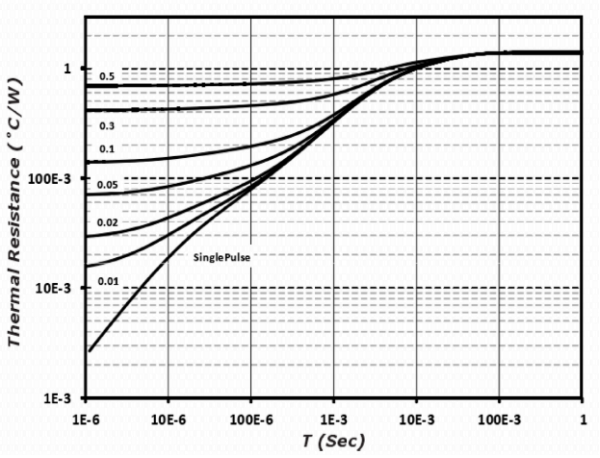
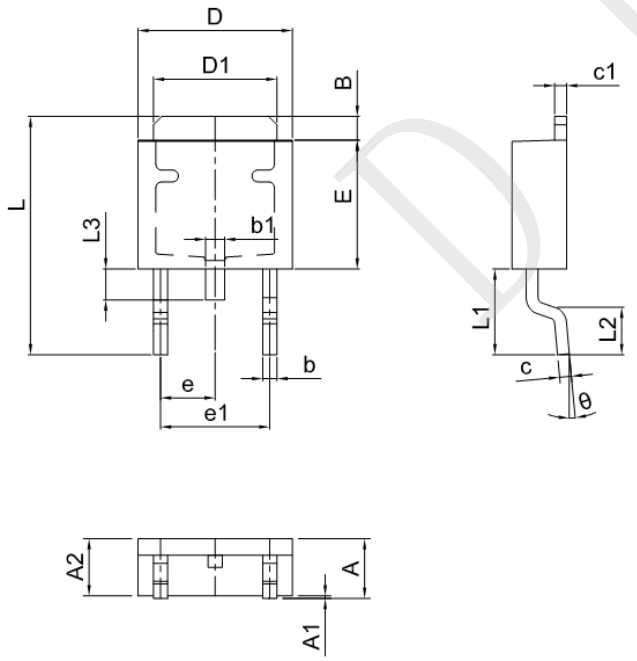


Figure 6. Thermal ImpedanceJunction-to-Case

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.60	10.20	0.378	0.402
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059