

DESCRIPTION

SiC Schottky Diode has no switching loss, provides improved system efficiency against Si diodes by utilizing new semiconductor material-Silicon Carbide, enables higher operating frequency, and helps increasing power density and reduction of system size /cost. Its high reliability ensures robust operation during surge or over_voltage conditions.

FEATURES

- Max Junction Temperature 175°C
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery/No Forward Recovery

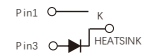
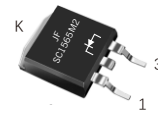
MECHANICAL DATA

- Case: JEDEC TO-252(DPAK) molded plastic body
- Terminals: Solderable per MIL-STD-202, method 208
- Polarity: As marked
- Mounting Position: Any

TYPICAL APPLICATIONS

- General Purpose
- SMPS, Solar inverter, UPS
- Power Switching Circuits

TO-252 DPAK



Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V	$T_c=25^{\circ}\text{C}$	
V_{RSM}	Surge Peak Reverse Voltage	650	V	$T_c=25^{\circ}\text{C}$	
V_R	DC Blocking Voltage	650	V	$T_c=25^{\circ}\text{C}$	
I_F	Forward Current	54 15	A	$T_c=25^{\circ}\text{C}$ $T_c=140^{\circ}\text{C}$	
I_{FSM}	Non-Repetitive Forward Surge Current	100	A	$T_c=25^{\circ}\text{C}$, $t_p=8.3\text{ms}$, Half Sine Wave	
P_{tot}	Power Dissipation	125	W	$T_c=25^{\circ}\text{C}$	Fig. 3
T_J, T_{STG}	Operating Junction and Storage Temperature	-55 to 175	$^{\circ}\text{C}$		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.4 1.7	1.65 2.3	V	$I_F=15A, T_J=25^{\circ}C$ $I_F=15A, T_J=175^{\circ}C$	Fig. 1
I_R	Reverse Current	2 10	20 200	μA	$V_R=650V, T_J=25^{\circ}C$ $V_R=650V, T_J=175^{\circ}C$	Fig. 2
C	Total Capacitance	865 88 72	/	pF	$V_R=0V, T_J=25^{\circ}C, f=1MHz$ $V_R=200V, T_J=25^{\circ}C, f=1MHz$ $V_R=400V, T_J=25^{\circ}C, f=1MHz$	Fig. 5
Qc	Total Capacitive Charge	36	/	nC	$V_R=650V, I_F=15A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	Fig. 4

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.2	$^{\circ}C/W$	Fig. 6
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	80	$^{\circ}C/W$	
T_{sold}	Soldering Temperature	260	$^{\circ}C$	

Typical Performance

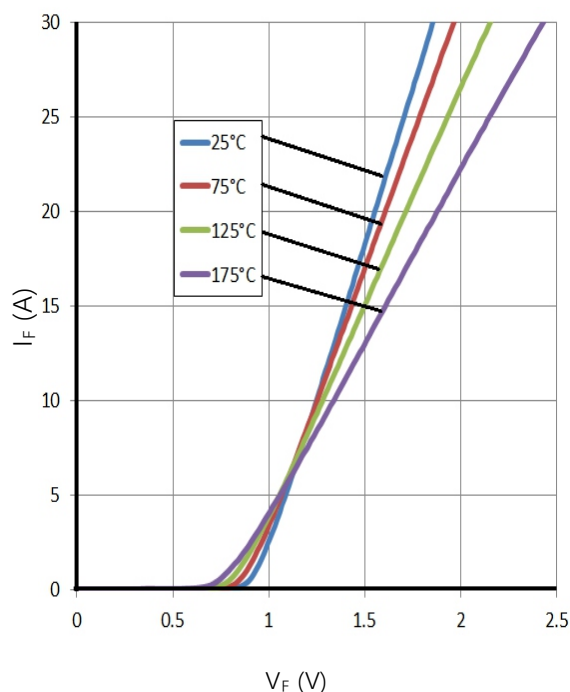


Figure 1. Forward Characteristics

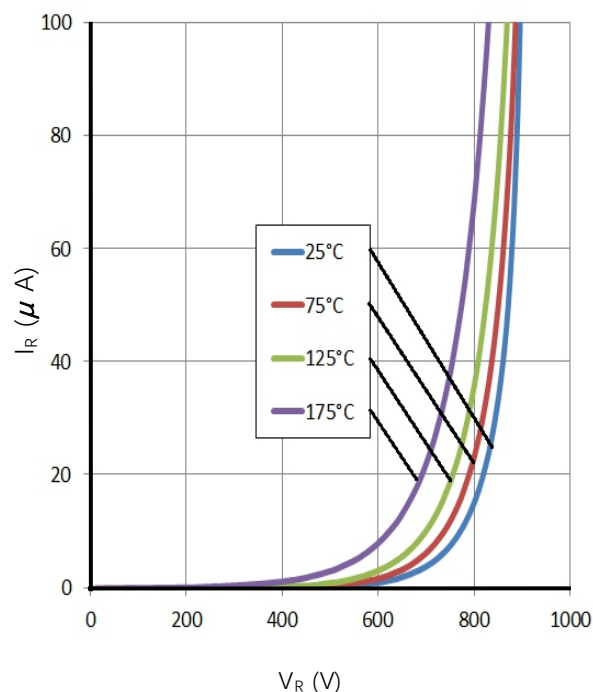


Figure 2. Reverse Characteristics

Typical Performance

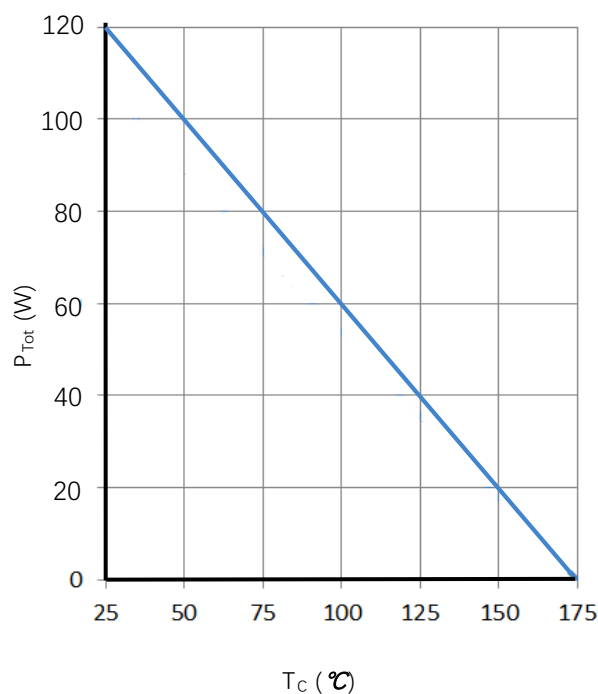


Figure 3. Power Derating

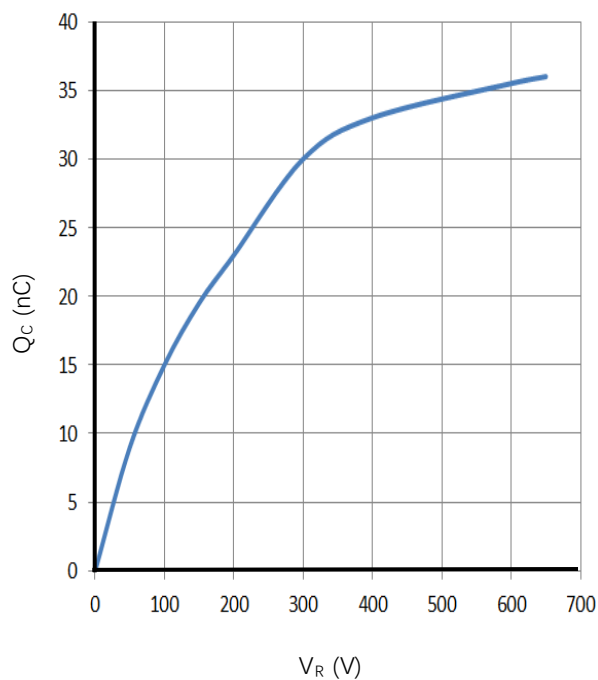


Figure 4. Total Capacitive Charge vs. Reverse Voltage

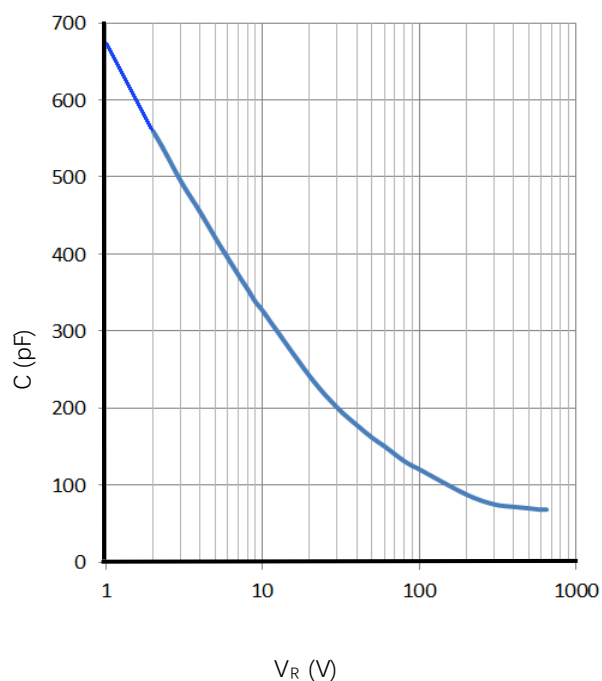


Figure 5. Total Capacitance vs. Reverse Voltage

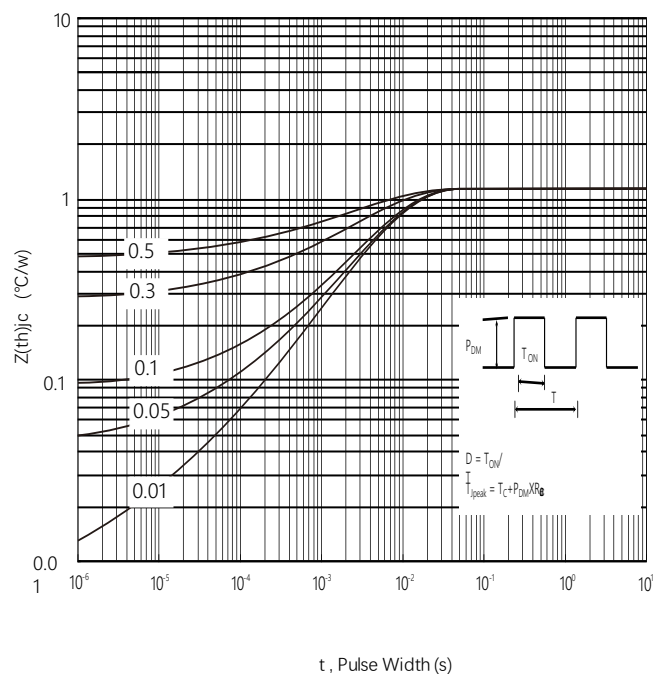
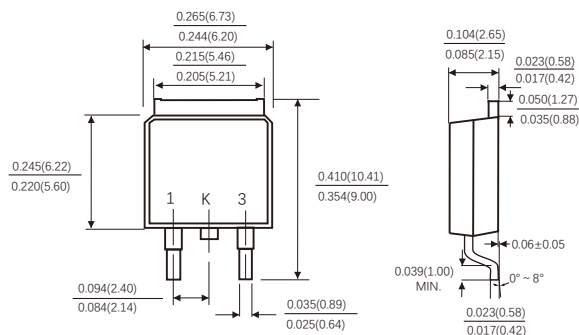


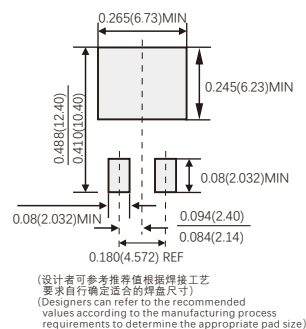
Figure 6. Transient Thermal Impedance

TO-252



Suggested Pad Layout

(TO-252)



Dimensions in inches and (millimeters)

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