

V_{RRM}	=	650	V
$I_F (AVG)$	=	30	A
Q_C	=	72	nC

Silicon Carbide Schottky Diode

Features

- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on V_F
- Temperature-independent Switching
- 175°C Operating Junction Temperature

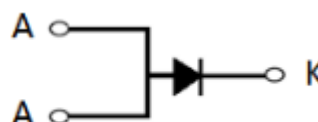
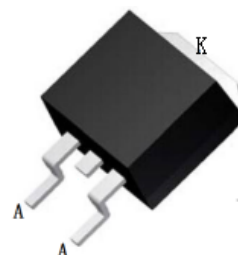
Benefits

- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

Package



Part Number	Package	Marking
THS30C65SN	TO-263	THS30C65SN

Maximum Ratings

Symbol	Parameter	Value	Unit	Conditions	Note
V_{RRM}	Repetitive Peak Reverse Voltage	650	V		
V_{DC}	DC Blocking Voltage	650	V	$I_R=1mA, T_j = 25^\circ C$	
I_F	Continuous Forward Current	50 30 29	A	$T_j = 25^\circ C$ $T_j = 120^\circ C$ $T_j = 125^\circ C$	
I_{FSM}	Non-repetitive Peak Forward Current	147	A	$T_j=25^\circ C, t_p=10ms$, Half Sine Wave (After test : $V_F \geq 0.5V @ I_F=1mA$; $V_R \geq 500V @ I_R=1mA$; $I_R \leq 5mA @ V_R=650V$)	
		138	A	$T_j=125^\circ C, t_p=10ms$, Half Sine Wave (After test : $V_F \geq 0.5V @ I_F=1mA$; $V_R \geq 500V @ I_R=1mA$; $I_R \leq 5mA @ V_R=650V$)	
P_{tot}	Power Dissipation	230	W	$T_j = 25^\circ C$	
T_j, T_{STG}	Operating Junction and Storage Temperature	-55 to 175	$^\circ C$		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.42 2.03	1.8 -	V	$I_F = 30A, T_J = 25^{\circ}C$ $I_F = 30A, T_J = 175^{\circ}C$	Fig.1
I_R	Reverse Current	0.01 2.16	10 -	μA	$V_R = 650V, T_J = 25^{\circ}C$ $V_R = 650V, T_J = 175^{\circ}C$	Fig.2
C	Total Capacitance	72 1364 129	/	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.3
Q_C	Total Capacitive Charge	72	/	nC	$V_R = 400V, I_F = 30A$ $di/dt = 200A/\mu s, T_J = 25^{\circ}C$	Fig.4

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.61	$^{\circ}C/W$	

Electrical Characteristic Curves

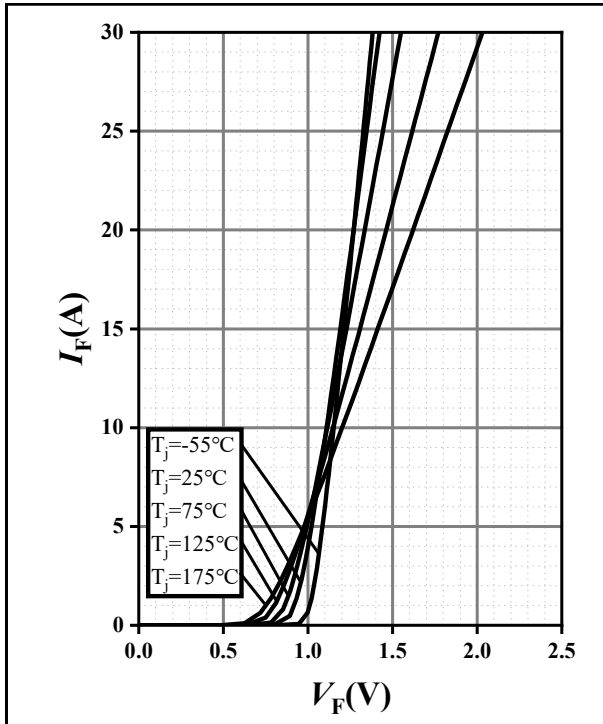


Fig.1 Forward Characteristics

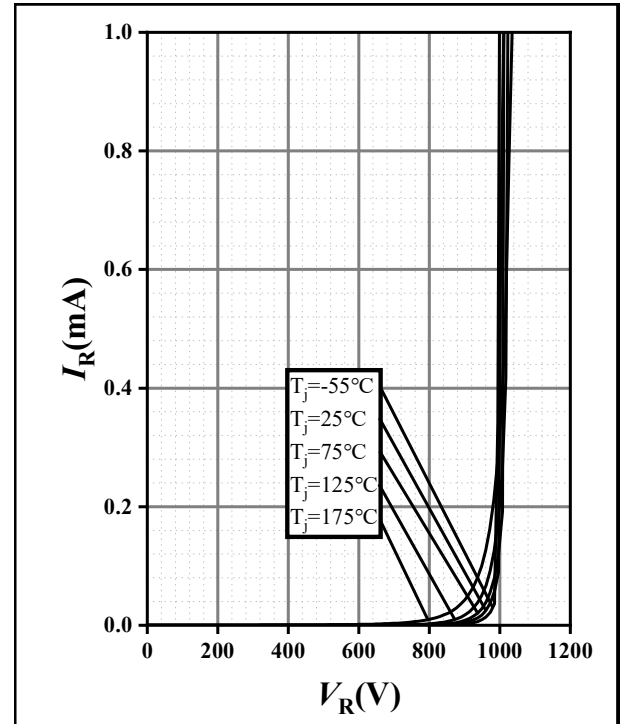


Fig.2 Reverse Characteristics

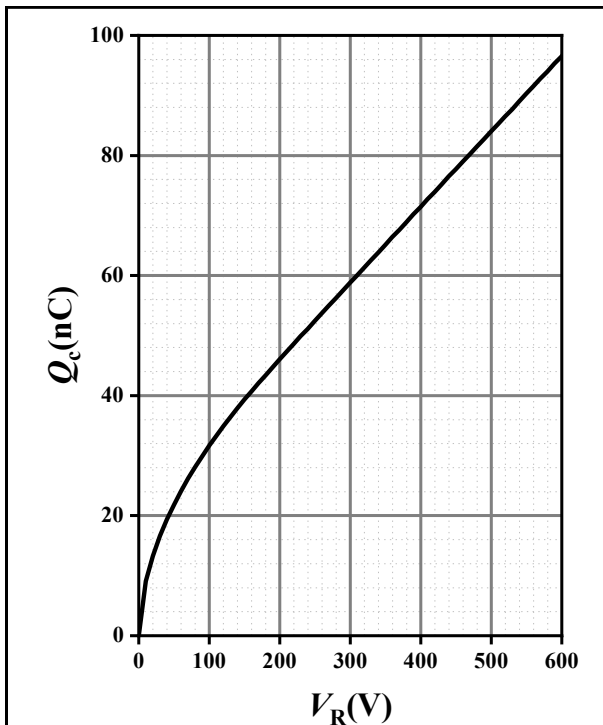


Fig.3 Capacitance Charge vs. Reverse Voltage

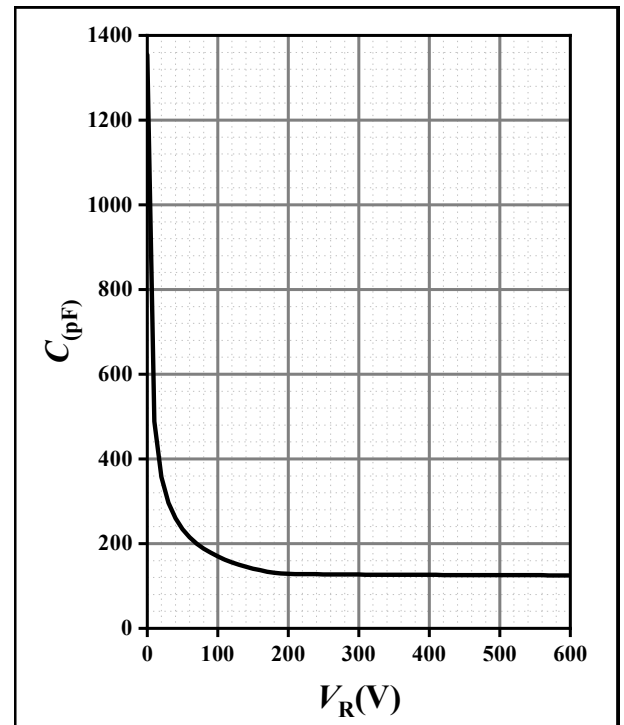
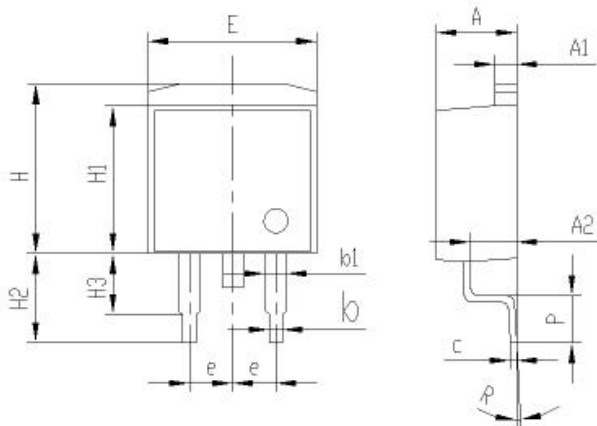


Fig.4 Capacitance vs. Reverse Voltage

Package Information

TO-263 PACKAGE



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.50	4.90
A1	1.17	1.37
A2	2.40	2.80
b	0.60	1.00
b1	0.95	1.35
c	0.26	0.50
e	2.34	2.74
E	9.70	10.1
H	9.80	10.2
H1	8.50	8.90
H2	5.05	5.45
H3	3.60	4.00
R	0°	6°
P	2.55	2.95

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