V_{RRM}	=	650	V
$I_{F\ (AVG)}$	=	15	A
Q_C	=	34	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

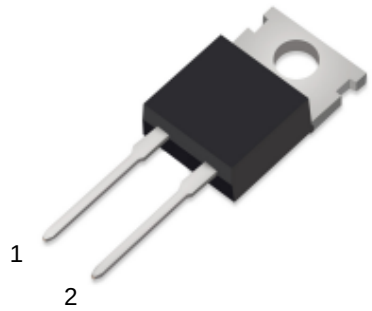
Benefits

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

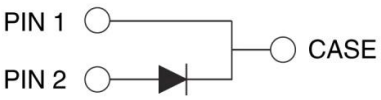
Applications

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

Package



TO-220C-2L



Part Number	Package	Marking
THS15C65SC2	TO-220C-2L	THS15C65SC2

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˚C	
I_F	ContinuousForwardCurrent	40 23 15	A	T_j = 25˚C T_j = 125˚C T_j = 154˚C	
I_{FSM}	Non-repetitive Peak Forward Current	76	A	T_j =25°C, t_p=10ms, Half Sine Wave (After test：V_F≥0.5V@I_F=1mA；V_R≥500V@I_R=1mA；I_R≤5mA@V_R=650V)	
		72	A	T_j =125°C, t_p=10ms, Half Sine Wave (After test：V_F≥0.5V@I_F=1mA；V_R≥500V@I_R=1mA；I_R≤5mA@V_R=650V)	
P_{tot}	Power Dissipation	120	W	T_j = 25˚C	
T_J, T_{STG}	Operating Junction and Storage Temperature	-55 to 175	˚C		

Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V_F	Forward Voltage	1.43 1.96	1.6 -	V	I_F = 15A, T_J = 25˚C I_F = 15A, T_J = 175˚C	Fig.1
I_R	Reverse Current	0.05 1.45	5 -	μA	V_R = 650V, T_J = 25˚C V_R = 650V, T_J = 175˚C	Fig.2
C	Total Capacitance	622 66 63	/	pF	V_R = 0V, T_J = 25˚C, f = 1MHz V_R = 200V, T_J = 25˚C, f = 1MHz V_R = 400V, T_J = 25˚C, f = 1MHz	Fig.3
Q_C	Total Capacitive Charge	34	/	nC	V_R = 400V, T_J = 25˚C	Fig.4

Thermal Characteristics

Symbol	Parameter	Typ.	Unit	Note
$R_{\theta JC}$	Thermal Resistance from Junction to Case	0.47	˚C/W	

Electrical Characteristic Curves

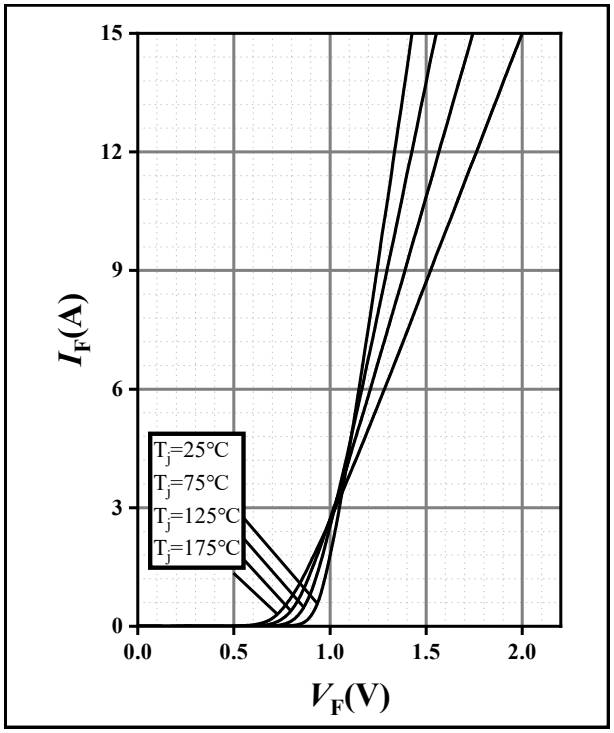


Fig.1 Forward Characteristics

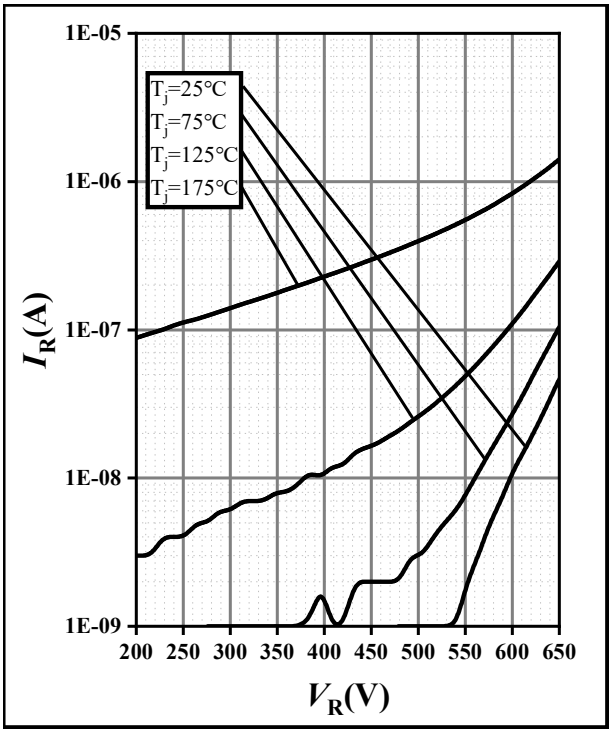


Fig.2 Reverse Characteristics

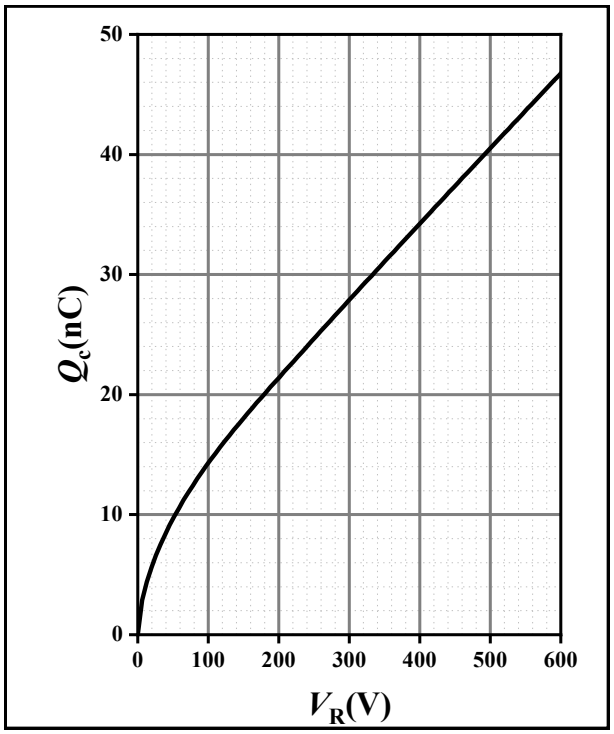


Fig.3 Capacitance Charge vs. Reverse Voltage

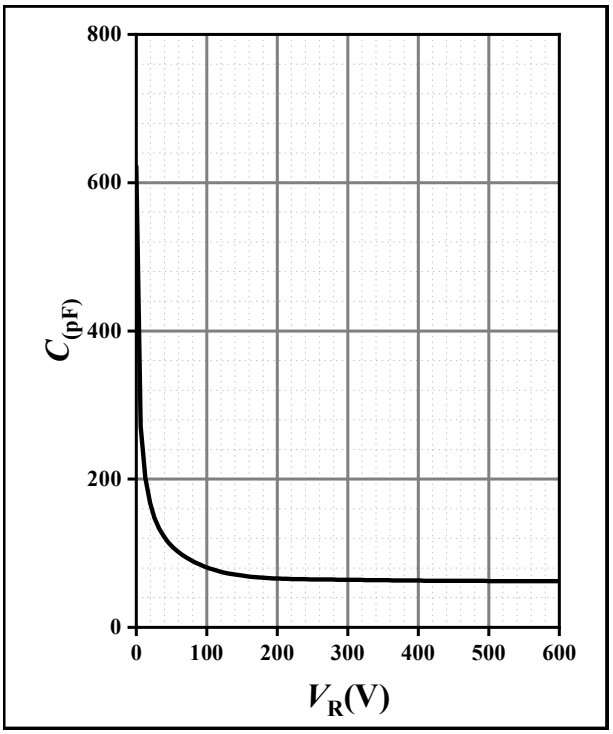
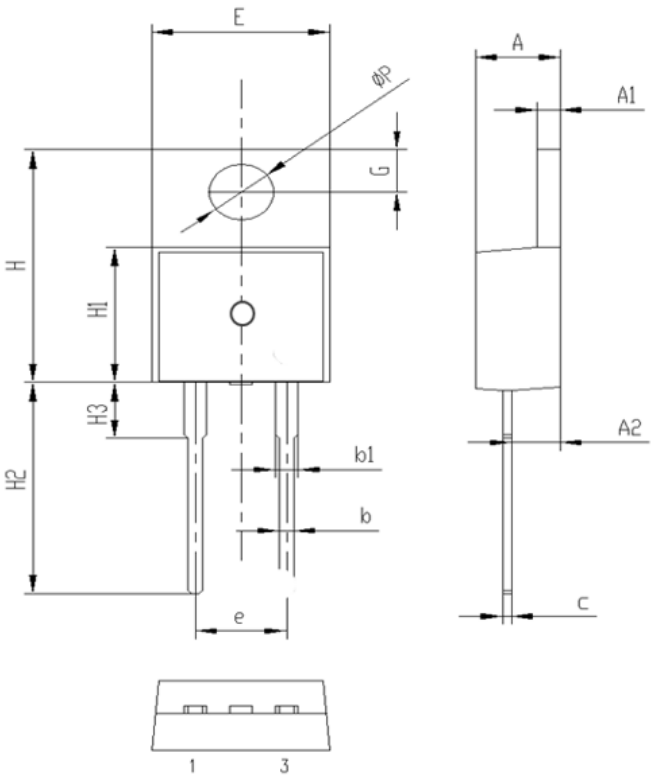


Fig.4 Capacitance vs. Reverse Voltage

Package Information

TO-220C-2L PACKAGE



基本尺寸

Symbol	单位 mm		
	Min	Nom	Max
A	4.30	4.50	4.70
A1	1.2	1.3	1.4
A2	2.30	2.40	2.50
b	0.60	0.8	1.00
b1	1.15	1.35	1.55
c	0.40	0.50	0.60
e	4.88	5.08	5.28
E	9.8	10.0	10.2
H	15.5	15.7	15.9
H1	9.00	9.20	9.40
H2	12.5	13.0	13.5
H3	2.80	3.0	3.20
G	2.60	2.8	3.00
ΦP	3.40	3.6	3.80

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