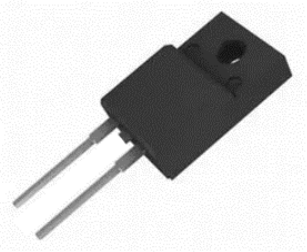
SICF1060P

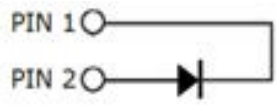
Silicon Carbide Schottky Diode

General Description

This product family offers state of the art performance. It is designed for high frequency applications where high efficiency and high reliability are required.



TO-220F-2L



Features

- Electrically isolated package
- ZLow conduction loss due to low V_F
- Extremely low switching loss by tiny Q_C
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

- UPS
- Power Inverter
- High performance SMPS
- Power factor correction

Part Number	Package	Marking
SICF1060P	TO-220F-2L	S1060BZ

Maximum Ratings (T_C=25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
V_{RRM}	Repetitive Peak Reverse Voltage	650	V	
V_{RSM}	Surge Peak Reverse Voltage	650	V	
V_R	DC Peak Reverse Voltage	650	V	
I_F	Continuous Forward Current	18 12 10	A	T_C=25˚C T_C=110˚C T_C=130˚C
I_{FRM}	Repetitive Peak Forward Surge Current	45 27	A	T_C=25˚C, t_P=10 ms, Half Sine Pulse T_C=110˚C, t_P=10 ms, Half Sine Pulse
I_{FSM}	Non-Repetitive Forward Surge Current	θ 70	A	T_C=25˚C, t_P=10 ms, Half Sine Pulse T_C=110˚C, t_P=10 ms, Half Sine Pulse
P_{tot}	Power Dissipation	27 12	W	T_C=25˚C T =110˚C
∫i²dt	i²t value	31.5 24.3	A²s	T_C=25˚C, t_P=10 ms T_C=110˚C, t_P=10 ms
T_J	Operating Junction Range	-55 to +175	˚C	
T_{stg}	Storage Temperature Range	-55 to +150	˚C	

Electrical Characteristics

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Forward Voltage	V_F	-	1.3	1.5	V	I_F=10A, T_j=25°C
		-	1.5			T_j=175°C
Reverse Current	I_R	-	-	50	μA	V_R=650V, T_j=25°C
		-	-	200		T_j=175°C
Total Capacitive Charge	Q_C	-	27	-	nC	V_R=400V，T_j=25℃ $Q_C = \int_0^{V_R} C(V)dV$
Total Capacitance	C	-	561	-	pF	T_j=25℃, f=1MHz, V_R=0V
		-	55	-		V_R=200V
		-	43	-		V_R=400V

Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	5.6	°C/W

Characteristics Curve

Fig 1: Forward Characteristics

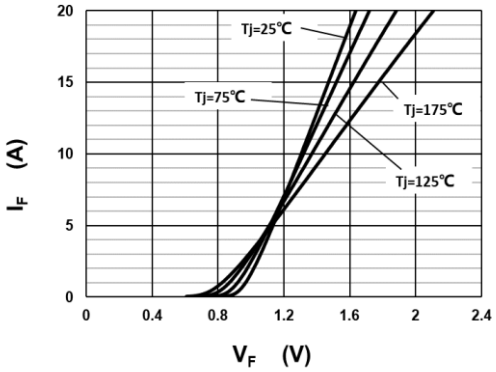


Fig 2: Reverse Characteristics

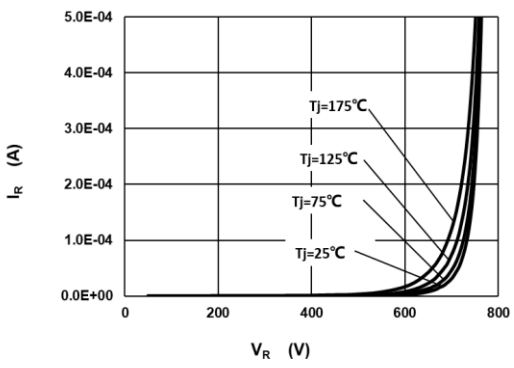


Fig 3: Current Derating

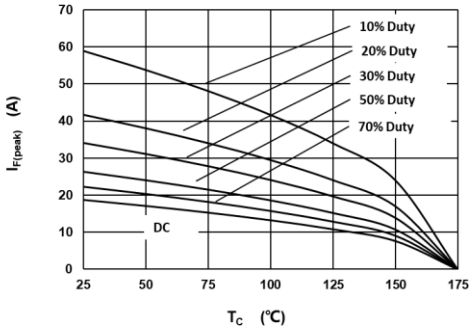


Fig 4: Power Derating

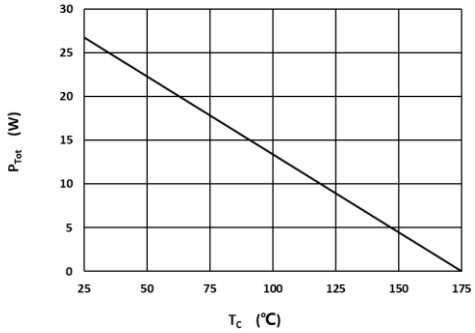


Fig 5: Capacitance vs. Reverse Voltage

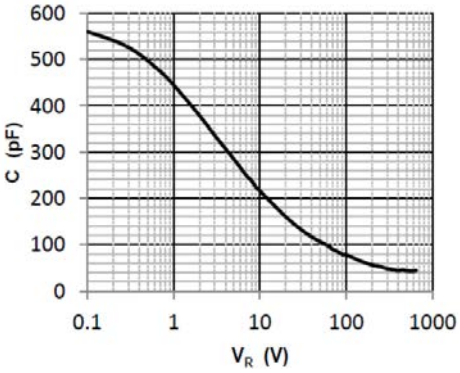


Fig 6: Reverse Charge vs. Reverse Voltage

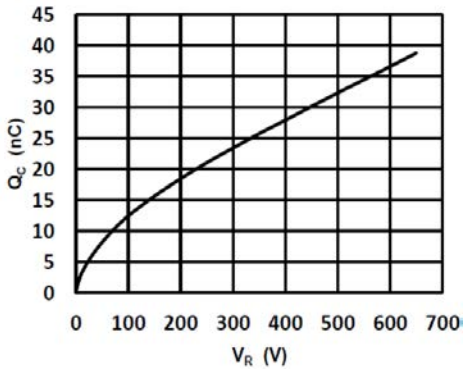


Fig 7: Typical Capacitance Stored Energy

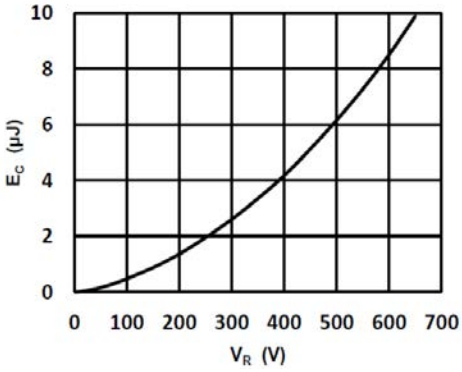
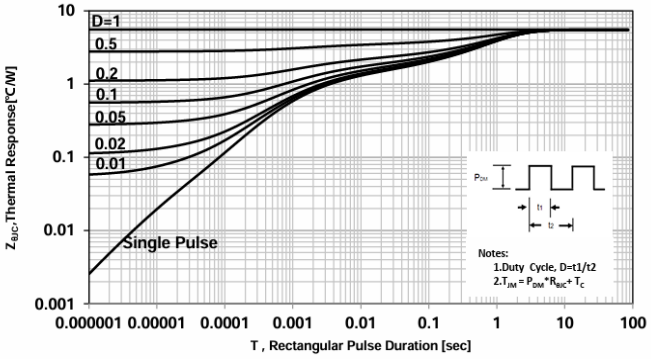
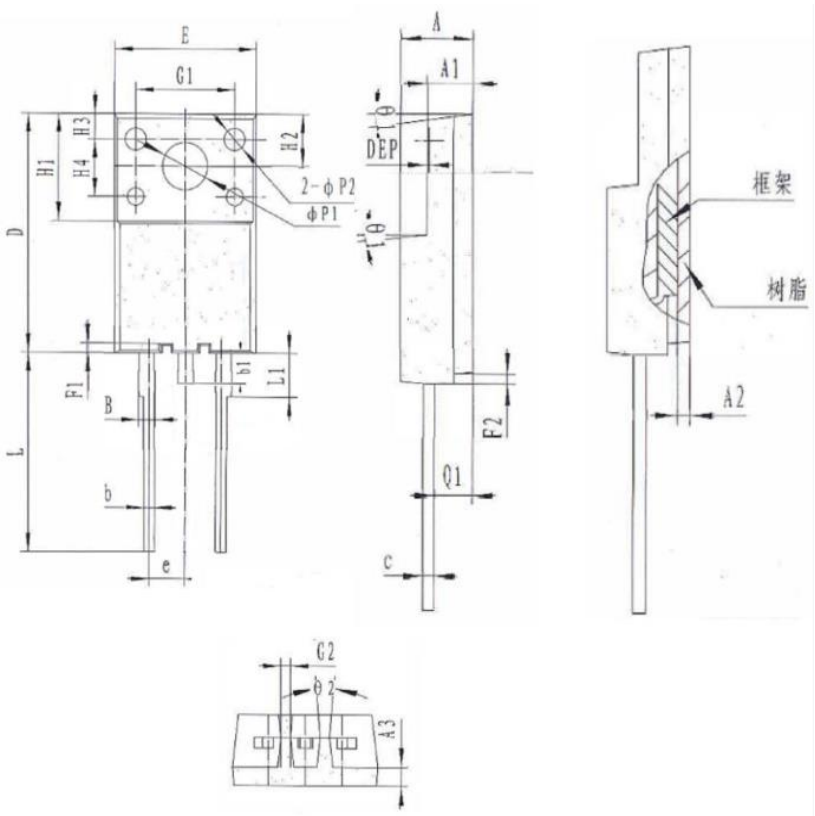


Fig 8: Transient Thermal Impandance



Package Information
TO-220F-2L



项目	规范(mm)	
	MIN	MAX
A	4.30	4.70
A1	2.68	2.88
A2	0.55	0.65
A3	0.86	1.06
b	0.77	0.87
b1	0.60	0.80
B	1.07	1.25
c	0.45	0.55
D	15.70	16.10
E	9.90	10.22
F1	0.40	0.60
F2	0.50	0.70
G1	6.90	7.10
G2	0.60	0.70
H1	6.80	7.20
H2	3.25	3.45
H3	1.50	1.90
H4	3.65	4.05
e	2.49	2.59
L	13.00	13.60
L1	3.20	3.40
Q1	2.20	2.40
θ1	4°	10°
θ2	7°	13°
ϕP1	3.06	3.26
ϕP2	1.40	1.60
DEP	0.05	0.20

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