



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.

Features

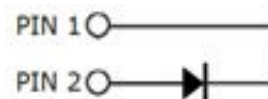
- Electrically isolated package
- Low conduction loss due to low V_F
- Extremely low switching loss by tiny Q_C
- Highly rugged due to better surge current
- Industrial standard quality and reliability

Applications

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



TO-220F-2L



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

Maximum Ratings ($T_C=25^{\circ}\text{C}$ 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	$T_C=25^{\circ}\text{C}$ $T_C=110^{\circ}\text{C}$ $T_C=130^{\circ}\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	45 27	A	$T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse $T_C=110^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse
I_{FSM}	Non-Repetitive Forward Surge Current	8 70	A	$T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse $T_C=110^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Pulse
P_{tot}	Power Dissipation	27 12	W	$T_C=25^{\circ}\text{C}$ $T=110^{\circ}\text{C}$
$\int i^2 dt$	$i^2 t$ value	31.5 24.3	A^2s	$T_C=25^{\circ}\text{C}$, $t_p=10$ ms $T_C=110^{\circ}\text{C}$, $t_p=10$ ms
T_J	Operating Junction Range	-55 to +175	$^{\circ}\text{C}$	
T_{stg}	Storage Temperature Range	-55 to +150	$^{\circ}\text{C}$	



Electrical Characteristics

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

Thermal Characteristics

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

Characteristics Curve

Fig 1: Forward Characteristics

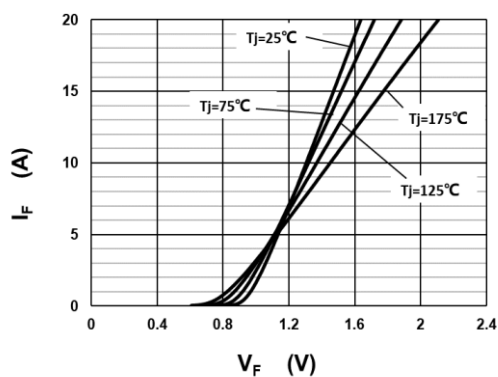


Fig 2: Reverse Characteristics

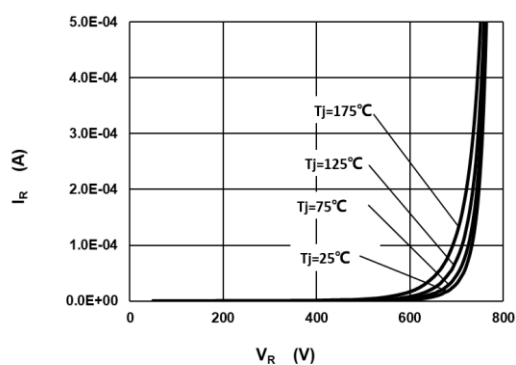




Fig 3: Current Derating

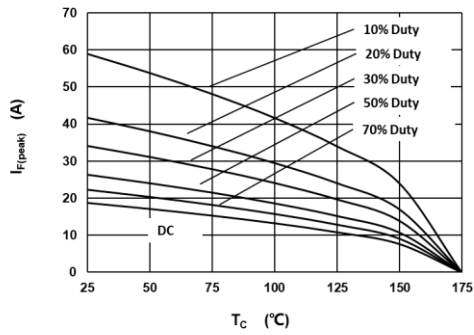


Fig 4: Power Derating

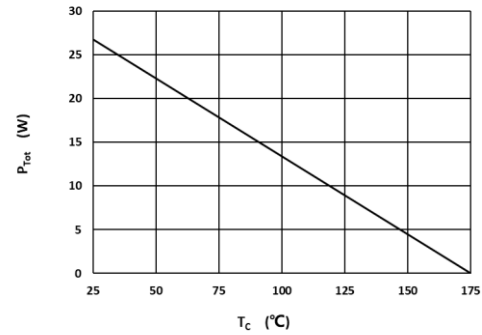


Fig 5: Capacitance vs. Reverse Voltage

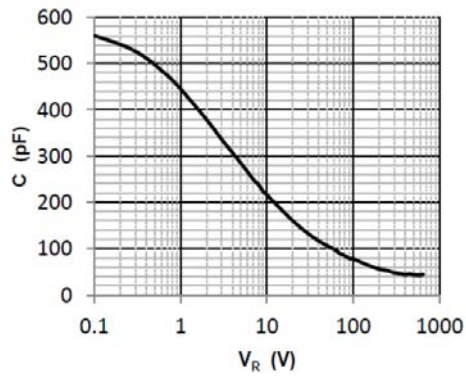


Fig 6: Reverse Charge vs. Reverse Voltage

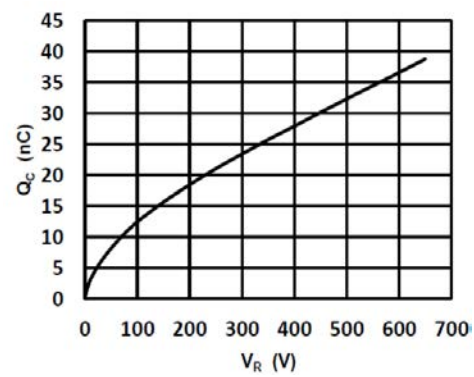


Fig 7: Typical Capacitance Stored Energy

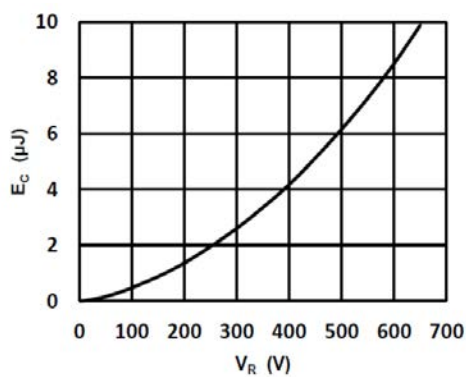
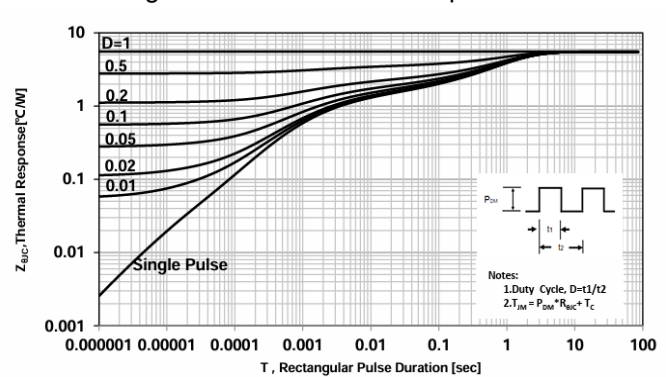
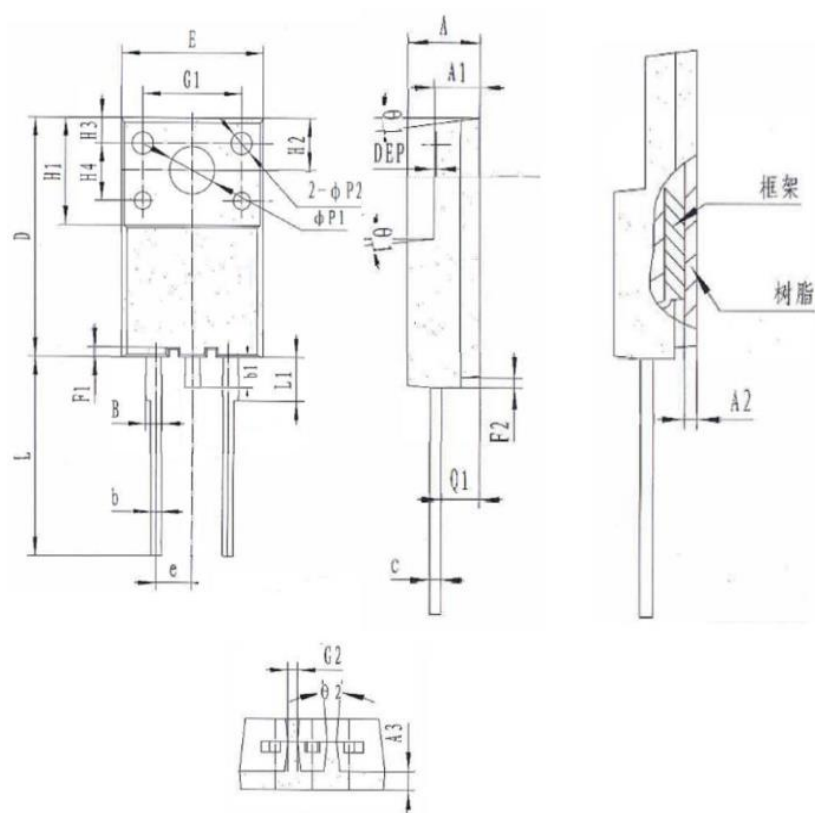


Fig 8: Transient Thermal Impedance





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
θ 1	4°	10°
θ 2	7°	13°
φ P 1	3.06	3.26
φ P 2	1.40	1.60
DEP	0.05	0.20



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