SF1608FCT

Ultrafast Recovery Diode

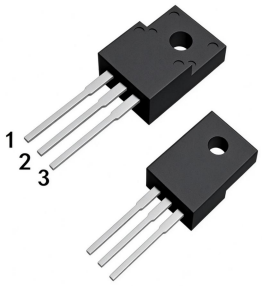
重庆平伟半导体股份有限公司
CHONGQING PINGWEI SEMICONDUCTOR CO., LTD.

16A,600V

Feature

- Ultrafast,soft recovery
- High frequency operation
- Very low I_R value
- Low forward voltage drop
- High junction temperature
- Epitaxial chip construction
- Low power loss, high efficiency
- RoHS 2.0 Compliant

TO-220F-3L

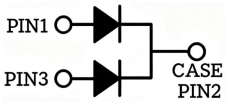


Mechanical Data

- Case: Molded with UL-94 Class V-0 recognized Flame Retardant Epoxy
- Mounting position: any

Key Performance Parameters

Parameter	Values	Unit
$I_{F(AV)}$	16	A
V_{RRM}	600	V
T_J	150	℃
V_F(max)	1.70	V
T_{RR}(max)	35	ns



Package Marking and Ordering Information

Part #	Marking	Package	Packing	Reel Size	Tape Width	Qty
SF1608FCT	SF1608FCT	TO-220F-3L	Tube	NA	NA	50pcs

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Absolute Maximum Ratings (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Maximum RMS Voltage	V_{RMS}	420	V
Maximum DC blocking Voltage	V_{DC}	600	V
Maximum Average Forward Rectified Current *Per Leg* T_C = 100℃ *Total device*	$I_{F(AV)}$	8 16	A
Non-Repetitive Peak Forward Surge Current T_J=25℃,t_p=8.3 ms, Half Sine Pulse *Per Leg*	I_{FSM}	100	A
Operating junction and storage temperature	T_J,T_{stg}	-55 to +150	℃

Thermal Resistance

Parameter	Symbol	Condition	Value			Unit
			min.	typ.	max.	
Thermal resistance, junction - case	R_{thJC}	-	-	-	3.5	℃/W
Thermal resistance, junction - ambient(min. footprint)	R_{thJA}	-	-	-	62.5	℃/W

Electrical Characteristic

Static Characteristic (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Value			Unit
			min.	typ.	max.	
Reverse breakdown voltage	V_{RRM}	I_R=100uA	600	-	-	V
Forward voltage	V_F	I_F=8A,T_J=25°C	-	1.25	1.70	V
		I_F=8A,T_J=125°C	-	1.15	1.60	V
Reverse current	I_R	V_R=600V,T_J=25°C	-	0.02	10	μA
		V_R=600V,T_J=125°C	-	10	400	

Dynamic Characteristic (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Value			Unit
			min.	typ.	max.	
Total capacitance	C_J	V_R=4V,f=1MHz	-	50	-	pF
Reverse Recovery Time	t_{rr}	I_F=0.5A,I_R=1A,I_{RR}=0.25A	-	-	35	ns

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Typical Performance Characteristics

Fig 1:Forward Current Derating Curve

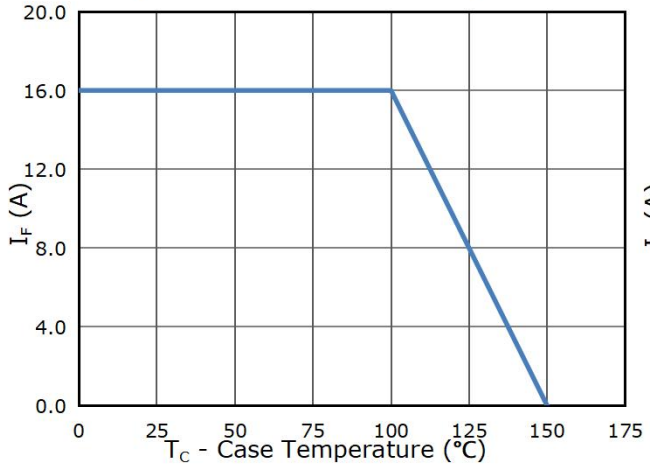


Fig 2: Forward Characteristics

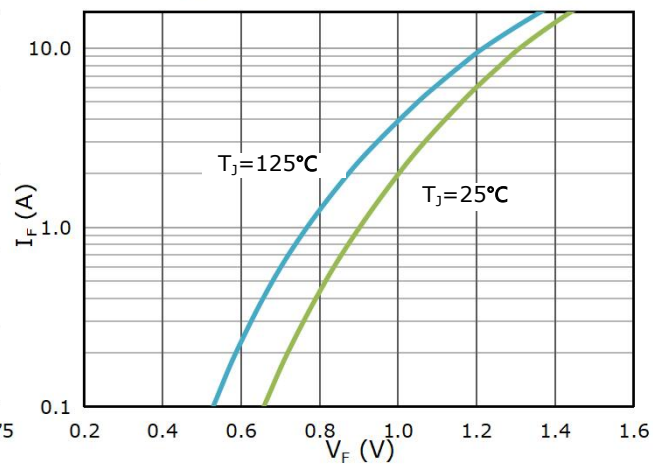


Fig 3: Maximun Non-repetitive Forward Surge Current

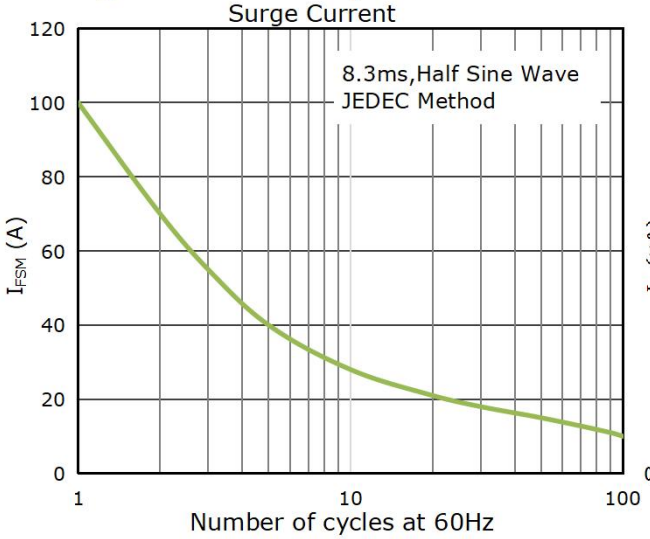
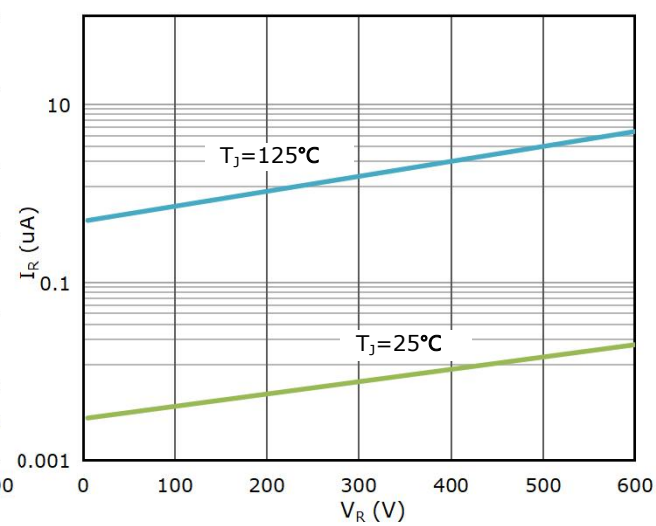
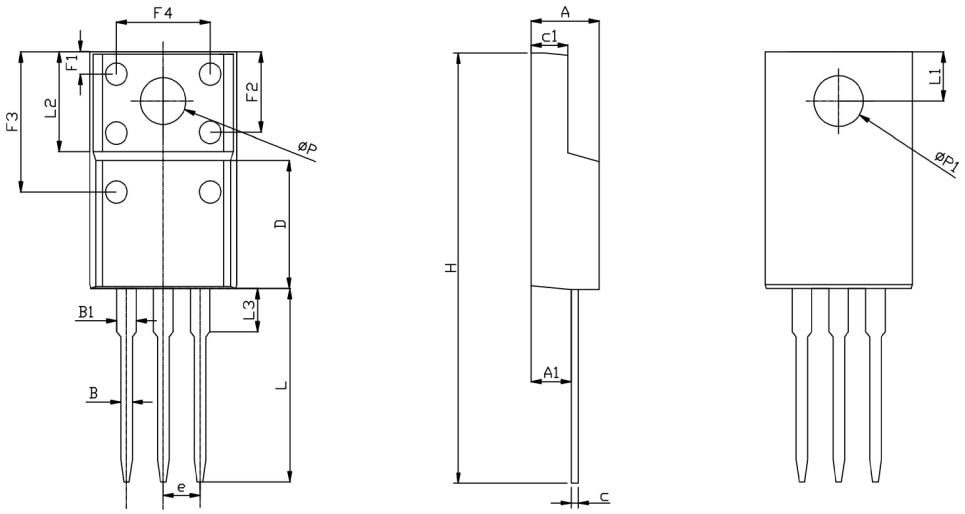


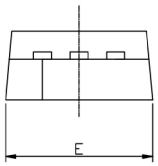
Fig 4: Reverse Characteristics



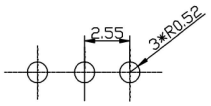
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Package Outline: TO-220F-3L





RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAN
A	4.40	4.60	4.80
A1	2.63	2.76	2.89
B	0.75	0.80	0.90
B1	1.12	1.27	1.42
c	0.40	0.50	0.60
c1	2.60	2.70	2.80
D	7.50	7.80	8.10
e	-	2.55REF	-
E	9.86	10.00	10.10
F1	1.90	2.12	2.40
F2	5.00	5.30	5.65
F3	8.70	9.00	9.30
F4	6.20	6.50	6.80
H	27.80	28.30	28.80
L	13.10	13.30	13.50
L1	2.85	3.00	3.15
L2	-	6.70REF	-
L3	2.80	3.10	3.40
ΦP	3.00	3.30	3.60
ΦP1	2.80	3.10	3.40

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