SF2004CT

Ultrafast Recovery Diode

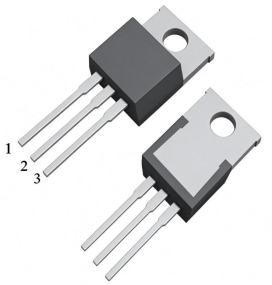
重庆平伟半导体股份有限公司
CHONGQING PINGWEI SEMICONDUCTOR CO., LTD.

20A,200V

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-220AB-3L

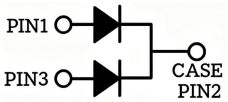


Mechanical Data

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

Key Performance Parameters

Parameter	Values	Unit
$I_{F(AV)}$	20	A
V_{RRM}	200	V
T_J	150	℃
V_F(max)	1.10	V
T_{RR}(max)	35	ns



Package Marking and Ordering Information

Part #	Marking	Package	Packing	Reel Size	Tape Width	Qty
SF2004CT	SF2004CT	TO-220AB-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}	200	V
Maximum RMS Voltage		V_{RMS}	140	V
Maximum DC blocking Voltage		V_{DC}	200	V
Maximum Average Forward Rectified Current	*Per Leg*	$I_{F(AV)}$	10	A
T_C = 100℃	*Total device*		20	
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}	-	-	-	2.5	℃/W
Thermal resistance, junction - ambient(min. footprint)	R_{thJA}	-	-	-	40.0	℃/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	200	-	-	V
Forward voltage	V_F	I_F=10A,T_J=25°C	-	0.90	1.10	V
		I_F=10A,T_J=125°C	-	0.80	1.00	V
Reverse current	I_R	V_R=200V,T_J=25°C	-	0.02	10	μA
		V_R=200V,T_J=125°C	-	1	100	

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

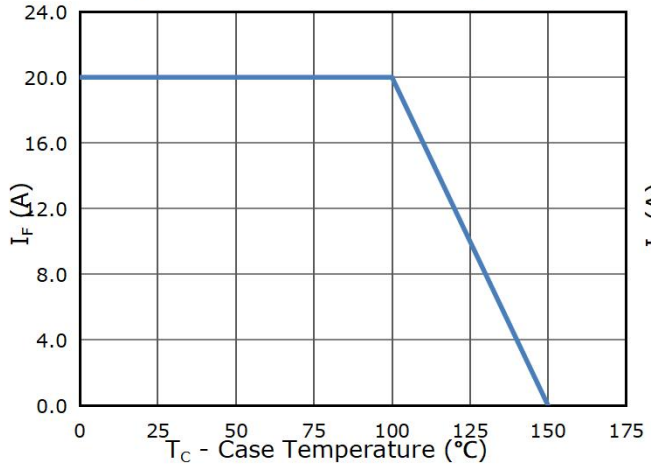


Fig 2: Forward Characteristics

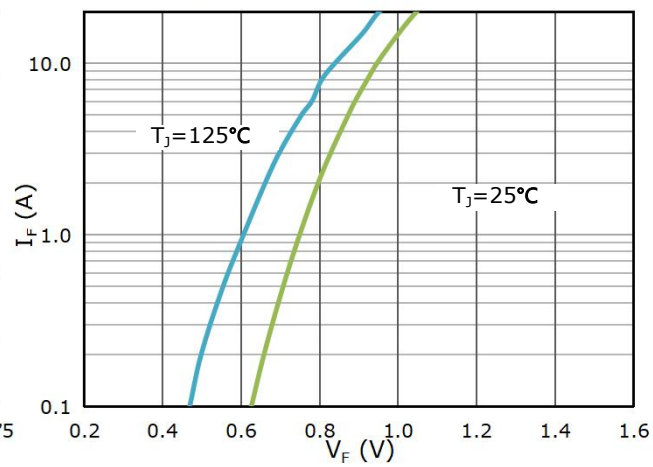


Fig 3: Maximun Non-repetitive Forward Surge Current

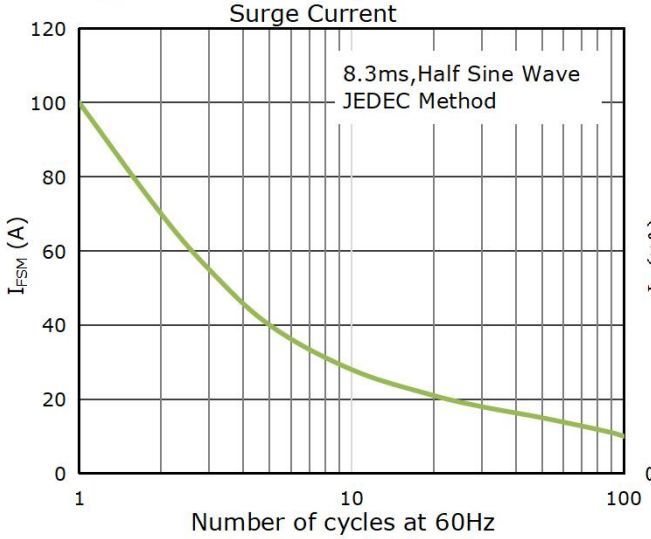
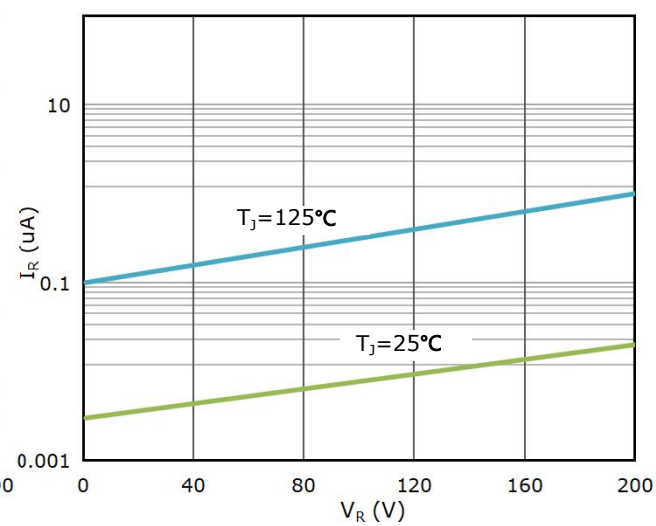
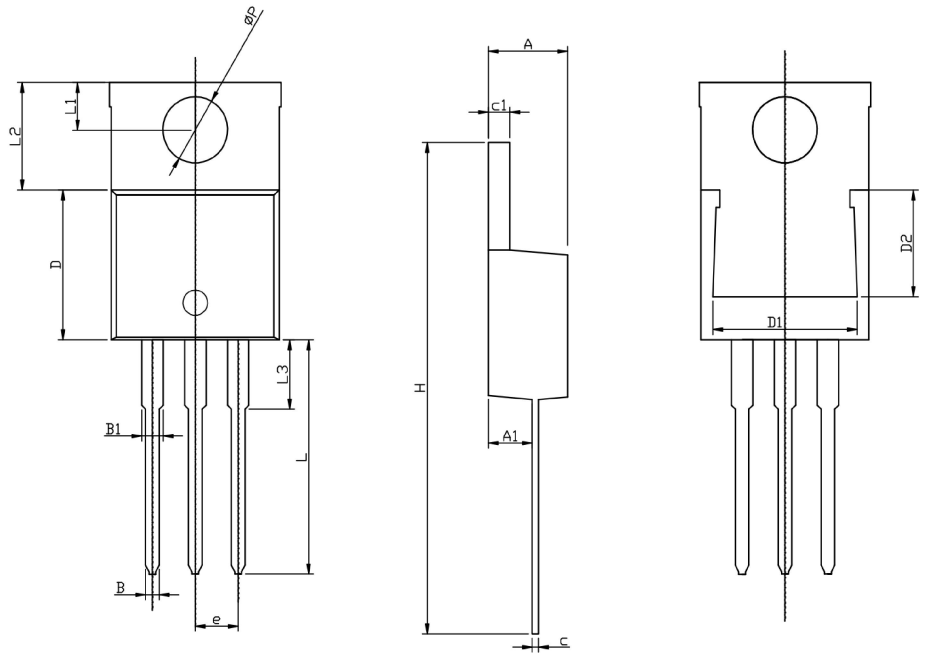


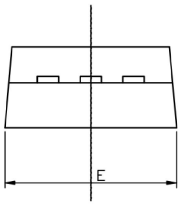
Fig 4: Reverse Characteristics



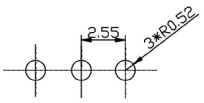
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Package Outline: TO-220AB-3L





RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.45	2.60	2.70
B	0.72	0.82	0.92
B1	1.12	1.27	1.42
c	0.28	0.38	0.48
c1	1.17	1.27	1.37
D	8.46	8.66	8.86
D1	7.90	8.10	8.40
D2	5.50	5.70	5.90
e	2.45	2.55	2.65
E	9.85	10.15	10.45
H	28.00	28.50	29.00
ΦP		3.84	
L	13.1	13.6	14.1
L1	2.54	2.74	2.94
L2	6.04	6.24	6.44
L3	3.85	4.05	4.35

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