



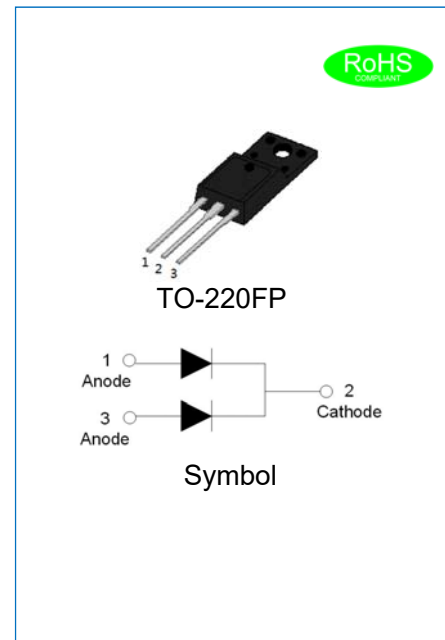
JPCR2003FPCT

EPI PLANAR HYPERFAST SOFT RECOVERY RECTIFIER

Rev.1.2

DESCRIPTION

- ✧ Plastic package has underwriters laboratory flammability classification 94V-0
- ✧ Lead free in comply with EU RoHS 2011/65/EU directives
- ✧ Low reverse leakage current
- ✧ Hyperfast recovery time
- ✧ Low recovery loss
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics
- ✧ Output rectifiers in high-frequency switched-mode power supplies



MECHANICAL DATA

- ✧ Case: TO-220FP molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 2.07 gram

ABSOLUTE MAXIMUM RATING (Rating at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	JPCR2003FPCT	Unit
Maximum repetitive peak reverse voltage (Pin1~2 or Pin3~2)	V_{RRM}	350	V
Maximum DC blocking voltage(Pin1~2 or Pin3~2)	V_{DC}	350	V
Average forward current at $T_C=130^{\circ}\text{C}$ (Pin1,3~2)	$I_{F(AV)}$	20	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load((Pin1~2 or Pin3~2)	I_{FSM}	150	A
Junction temperature and storage temperature range	T_j, T_{stg}	-55 to +175	°C

ISOLATION CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_{isol(RMS)}$	RMS isolation voltage	50Hz $\leq f \leq$ 60Hz, RH $\leq$ 65%, from all pins to external heatsink, sinusoidal waveform, clean and dust free	-	-	2500	V
C_{isol}	Isolation capacitance	from cathode to external heatsink	-	10	-	pF

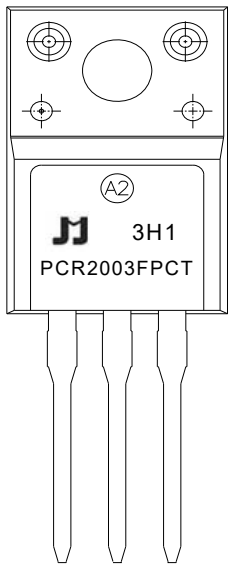
ELECTRICAL CHARACTERISTICS(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage (Pin1~2 or Pin3~2)	$I_F=10A, T_J=25^{\circ}C$	V_F	-	-	1.3	V
	$I_F=10A, T_J=150^{\circ}C$		-	-	1.1	
Reverse current (Pin1~2 or Pin3~2)	$V_R=350V, T_J=25^{\circ}C$	I_R	-	-	5	μA
	$V_R=350V, T_J=150^{\circ}C$		-	-	100	
Reverse recovery time (Pin1~2 or Pin3~2)	$I_F=1A, V_R=30V,$ $di/dt=200A/\mu s, T_J=25^{\circ}C$	t_{rr}	-	15	25	ns
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_J=25^{\circ}C$		-	22	-	
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_J=125^{\circ}C$		-	38	-	
Reverse recovery current (Pin1~2 or Pin3~2)	$I_F=10A, V_R=200V,$ $dI_F/dt=200A/\mu s, T_J=25^{\circ}C$	I_{RRM}	-	2.8	-	A
	$I_F=10A, V_R=200V,$ $dI_F/dt=200A/\mu s, T_J=125^{\circ}C$		-	6.3	-	
Reverse recovery charge (Pin1~2 or Pin3~2)	$I_F=10A, V_R=200V,$ $dI_F/dt=200A/\mu s, T_J=25^{\circ}C$	Q_{rr}	-	32	-	nC
	$I_F=10A, V_R=200V,$ $dI_F/dt=200A/\mu s, T_J=125^{\circ}C$		-	125	-	

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Thermal resistance from junction to case(Pin1,3~2)	-	-	4	$^{\circ}C/W$

MARKING



PCR	Planar Hyperfast Recovery Rectifier
20	$I_{F(AV)}=20A$
03	$V_{RRM}:350V$
FP	Package: TO-220FP
CT	Common cathode

xH1: Month, 1/2/3~9/A/B/C

3x1:

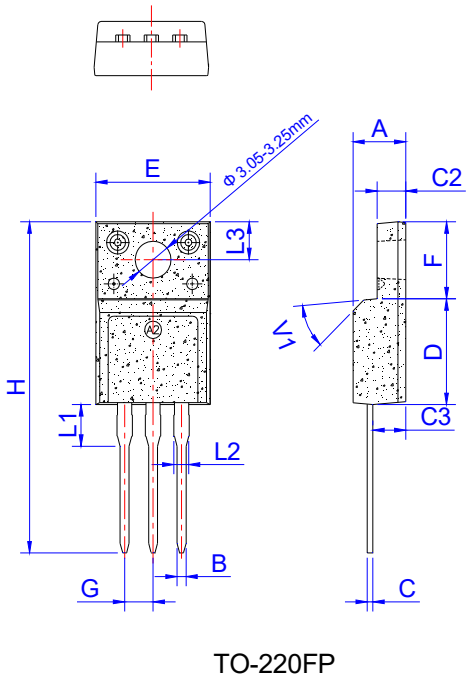
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION

J	P	C	R	20	03	FP	CT
JieJie Microelectronics	Epi planar	Hyperfast	Rectifier	$I_{F(AV)}=20A$	$V_{RRM}:350V$	Package:TO-220FP	Common cathode

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

PACKAGE INFORMATION-TO-220FP

OUTLINE	UNIT WEIGHT (g/PCS) TYP	TUBE (PCS)	PER CARTON (PCS)
TUBE	2.07	50	5,000

CHARACTERISTICS CURVE

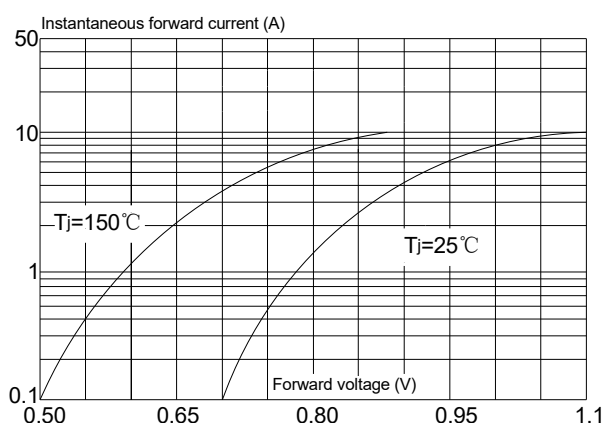
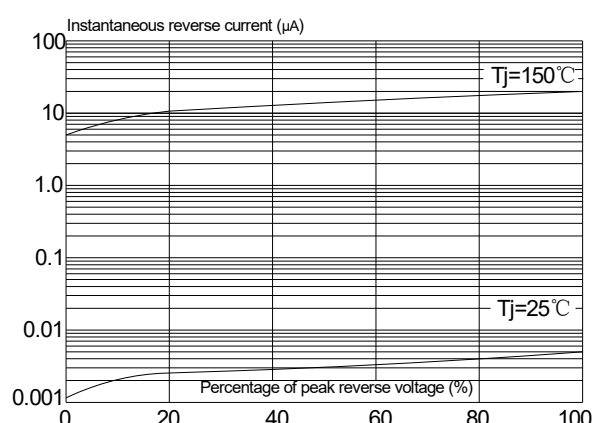
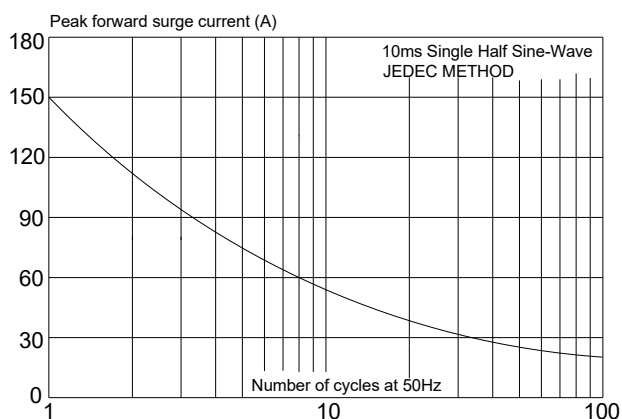
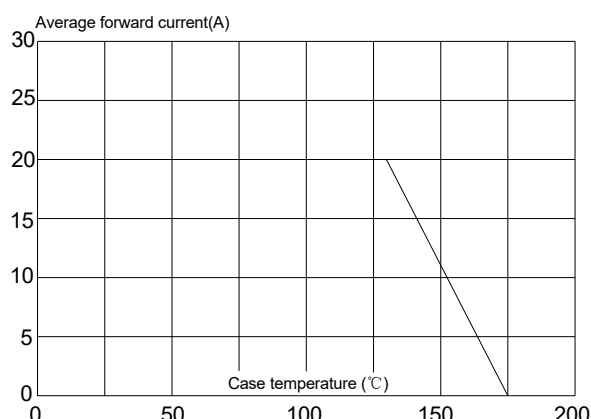
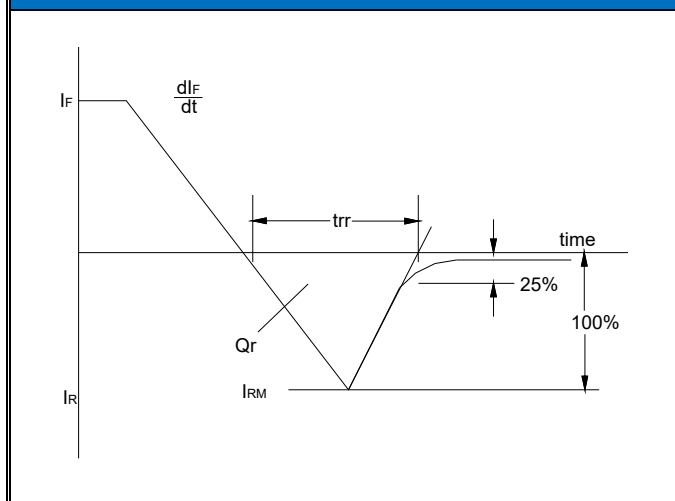
FIG.1: Typical forward characteristics
(Pin1~2 or Pin3~2)FIG.2: Typical reverse characteristics
(Pin1~2 or Pin3~2)FIG.3: Maximum non-repetitive peak forward surge current
(10ms single half sine-wave, Pin1~2 or Pin3~2)FIG.4: Forward current derating curve
(Pin1,3~2)

FIG.5: Reverse recovery definitions



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