



## JPFR0812FPL

### EPI PLANAR FAST SOFT RECOVERY RECTIFIER

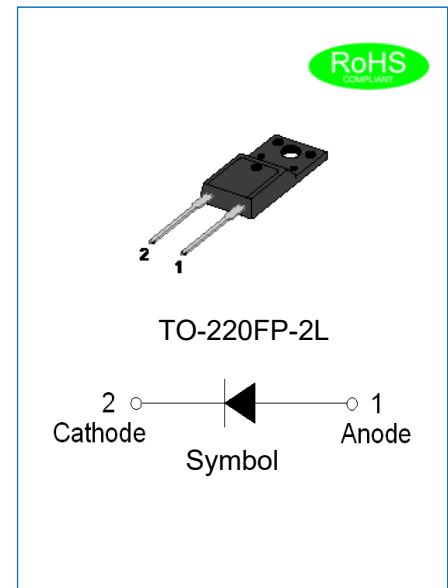
Rev.1.2

#### 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
- ✧ Fast recovery time
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics
- ✧ Low recovery loss

#### MECHANICAL DATA

- ✧ Case: TO-220FP-2L molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 2 gram



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

Parameter	Symbol	JPFR0812FPL	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	1200	V
Maximum DC blocking voltage	$V_{DC}$	1200	V
Average forward current at $T_C=120^{\circ}\text{C}$	$I_{F(AV)}$	8	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	88	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load		80	
Junction temperature and storage temperature range	$T_J, T_{stg}$	-55 to +175	$^{\circ}\text{C}$

#### 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

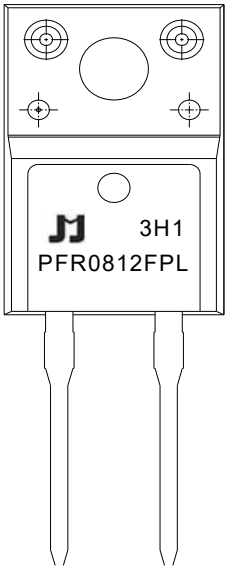
**ELECTRICAL CHARACTERISTICS**(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=8A, T_J=25^{\circ}C$	$V_F$	-	1.7	2.2	V
	$I_F=8A, T_J=150^{\circ}C$		-	1.5	2	
Reverse current	$V_R=1200V, T_J=25^{\circ}C$	$I_R$	-	-	5	$\mu A$
	$V_R=1200V, T_J=150^{\circ}C$		-	-	200	
Reverse recovery time	$I_F=1A, V_R=30V,$ $di/dt=100A/\mu s, T_J=25^{\circ}C$	$t_{rr}$	-	-	50	ns
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^{\circ}C$		-	40	-	
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^{\circ}C$		-	80	-	
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^{\circ}C$		-	90	-	
Peak reverse recovery current	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^{\circ}C$	$I_{RM}$	-	9	-	A
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^{\circ}C$		-	14.5	-	
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^{\circ}C$		-	16	-	
Recovered charge	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=25^{\circ}C$	$Q_r$	-	200	-	nC
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=125^{\circ}C$		-	700	-	
	$I_F=8A, V_R=400V,$ $di/dt=500A/\mu s, T_J=150^{\circ}C$		-	850	-	

**THERMAL RESISTANCES**

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

MARKING



PFR	Planar Fast Recovery Rectifier
08	$I_{F(AV)}=8A$
12	$V_{RRM}:1200V$
FPL	Package: TO-220FP-2L

$\underline{x}H1$ : Month, 1/2/3~9/A/B/C

3 $\underline{x}1$ :

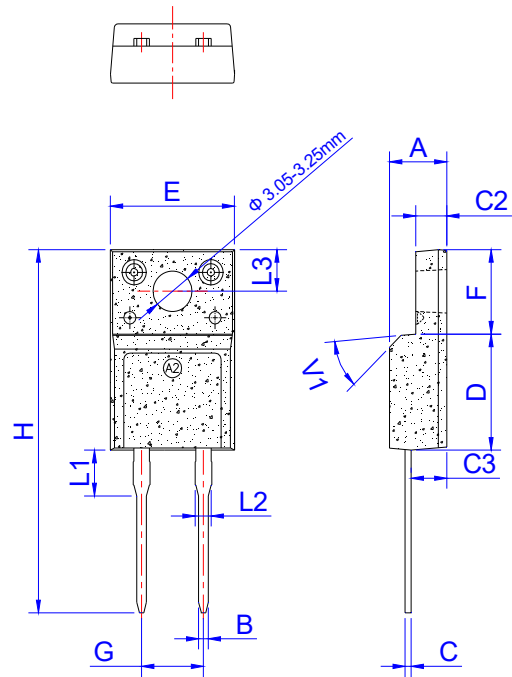
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3H $\underline{x}$ : Batch number

ORDERING INFORMATION

J	P	F	R	08	12	FPL
JieJie Microelectronics	Epi planar	Fast Rectifier		$I_{F(AV)}=8A$	$V_{RRM}:1200V$	Package: TO-220FP-2L

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		5.08			0.200	
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-2L

OUTLINE	UNIT WEIGHT (g/PCS) typ.	TUBE (PCS)	PER CARTON (PCS)
TUBE	2	50	5,000

## CHARACTERISTICS CURVE

FIG.1 Typical forward characteristics

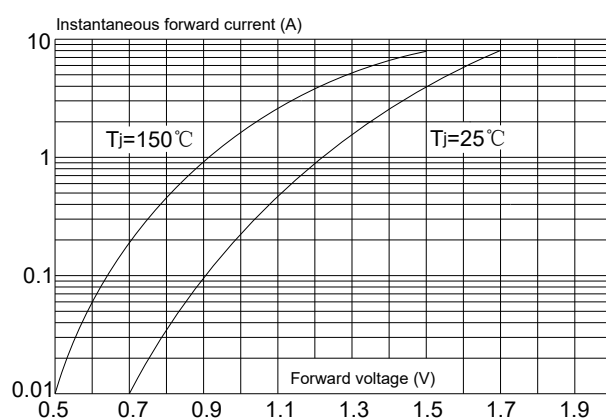


FIG.2 Typical reverse characteristics

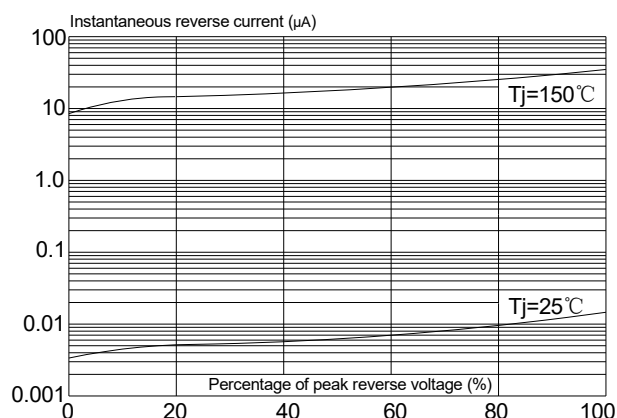


FIG.3 Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

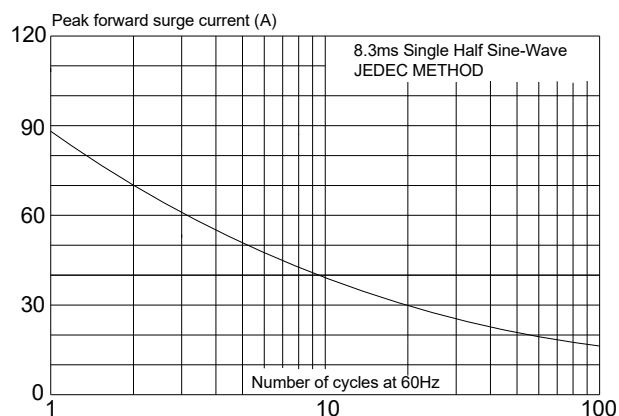


FIG.4 Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

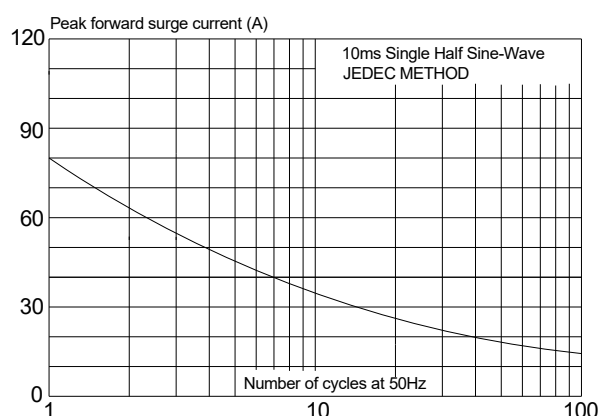


FIG.5 Forward current derating curve

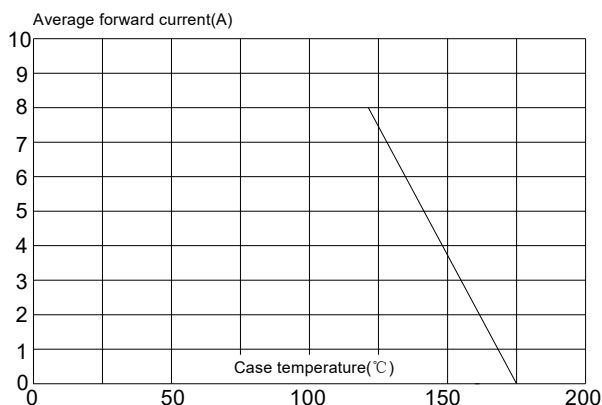
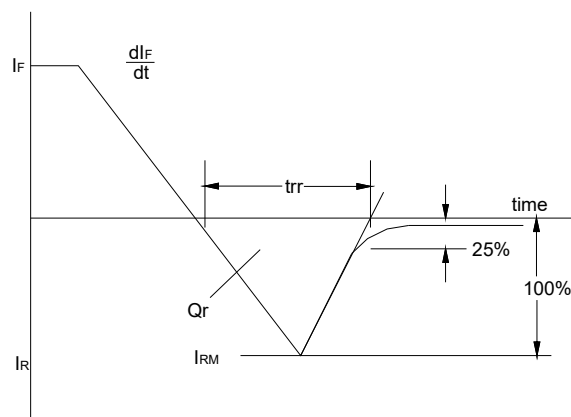


FIG.6 Reverse recovery definitions



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