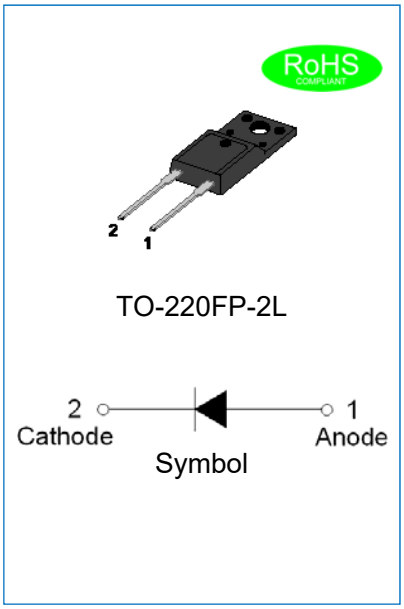
JECR3006FPL-S

EPI HYPERFAST SOFT RECOVERY RECTIFIER

Rev.1.1

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
- ✧ 4th Generation hyperfast diode with softer recovery
- ✧ Low recovery loss
- ✧ Applications for continuous current mode (CCM) power factor correction (PFC),active PFC in air conditioner, half-bridge/full-bridge switched-mode power supplies



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℃ ambient temperature unless otherwise specified.)

Parameter	Symbol	JECR3006FPL-S	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 current @T_h=51℃	$I_{F(AV)}$	30	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load	I_{FSM}	260	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load		286	
Junction temperature and storage temperature range	T_j,T_{stg}	-55 to +150	℃

ISOLATION CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_{isol(RMS)}$	RMS isolation voltage	50Hz≤f≤60Hz;RH≤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

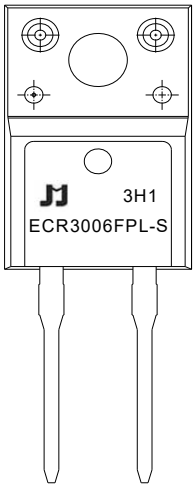
ELECTRICAL CHARACTERISTICS(Rating at 25℃ ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F=30A,T_j=25℃	V_F	-	2.1	2.75	V
	I_F=30A,T_j=150℃		-	1.5	2.0	
Maximum DC reverse current at rated DC blocking voltage	T_j=25℃	I_R	-	-	5	μA
	T_j=150℃		-	-	400	
Reverse recovery time	I_F=1A,V_R=30V, di/dt=50A/μs,T_j=25℃	t_{rr}	-	-	45	ns
	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=25℃		-	60	-	
	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	105	-	
Peak reverse recovery current	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=25℃	I_{RM}	-	4	-	A
	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	10	-	
Recovered charge	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=25℃	Q_r	-	135	-	nC
	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	600	-	
Softness factor	I_F=30A,V_R=200V, di/dt=200A/μs,T_j=125℃	S_{factor}	-	0.55	-	-

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-h)}$	Thermal resistance from junction to heatsink	-	-	3.5	℃/W
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	55	-	℃/W

MARKING



ECR	EPI Hyperfast Recovery Rectifier
30	$I_{F(AV)}$=30A
06	V_{RRM}:600V
FPL	Package:TO-220FP-2L
S	Softness factor

xH1：Month,1/2/3~9/A/B/C

3**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	…

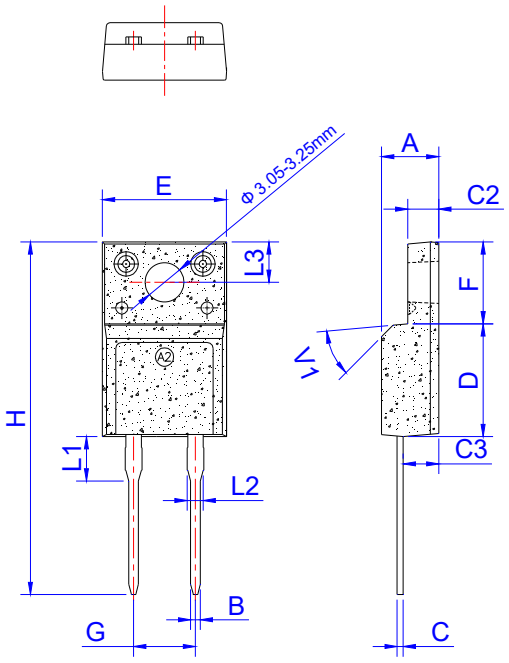
3H**x**：Batch number

ORDERING INFORMATION

J E C R 30 06 FPL -S

- J: JieJie Microelectronics
- E: EPI
- C: Hyperfast
- R: Rectifier
- 30: $I_{F(AV)}$=30A
- 06: V_{RRM}:600V
- FPL: Package: TO-220FP-2L
- -S: Softness factor

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

CHARACTERITICS CURVE

FIG.1: Typical forward characteristics

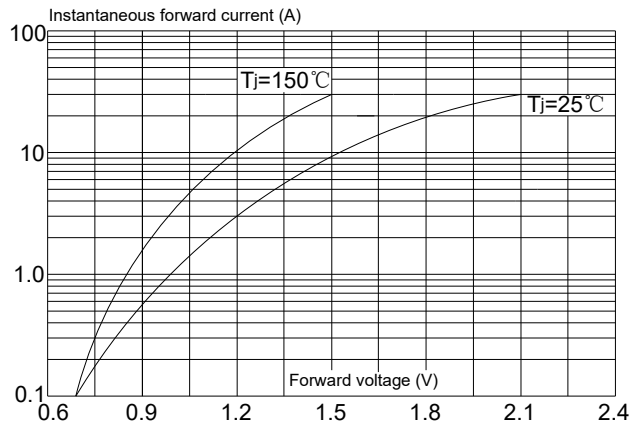


FIG.2: Typical reverse characteristics

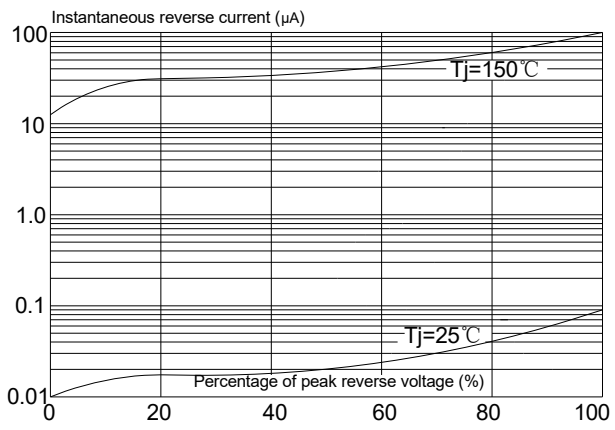


FIG.3: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

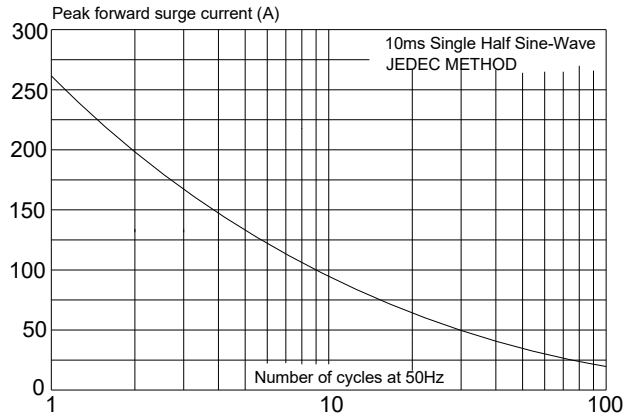


FIG.4: Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

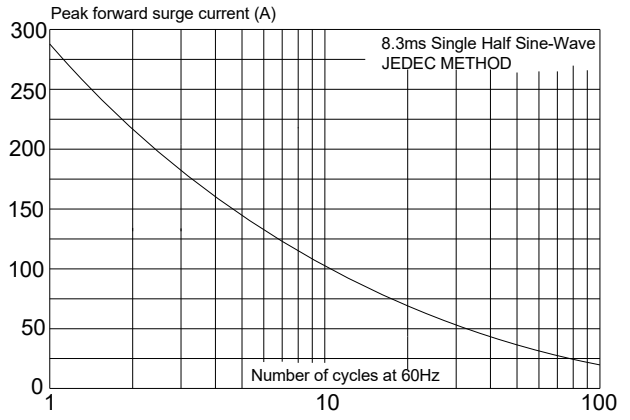


FIG.5: Forward current derating curve

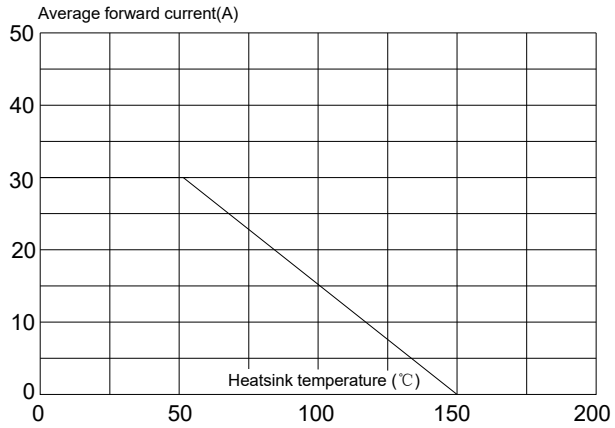
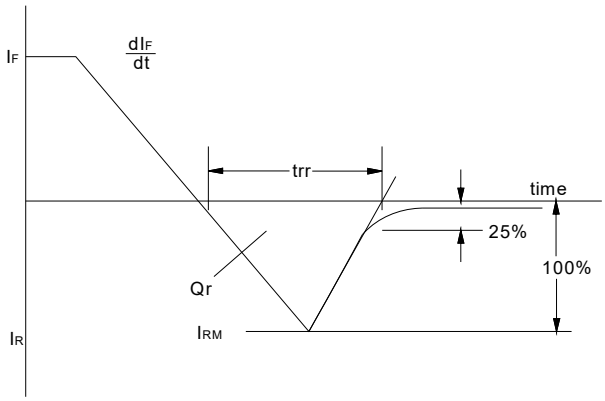


FIG.6: Reverse recovery definitions



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