



JECR1002FPCT

EPI HYPERFAST SOFT RECOVERY RECTIFIER

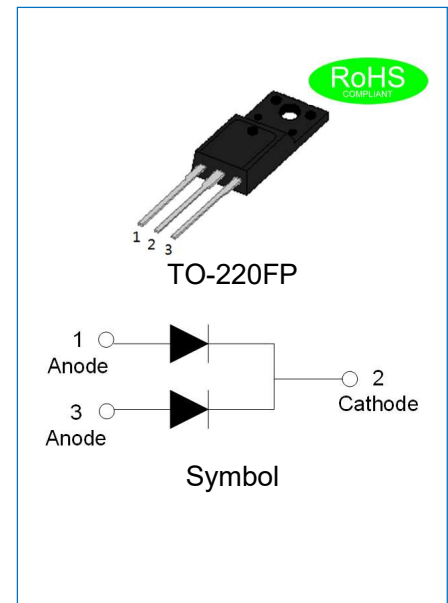
Rev.1.3

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 and soft recovery characteristics
- ✧ Low recovery loss
- ✧ Applications for 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	JECR1002FPCT	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
Average forward current at $T_h \leq 92^\circ\text{C}$	$I_{F(AV)}$	10	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load (per diode)	I_{FSM}	50	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load (per diode)	I_{FSM}	55	A
Junction temperature and storage temperature range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

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

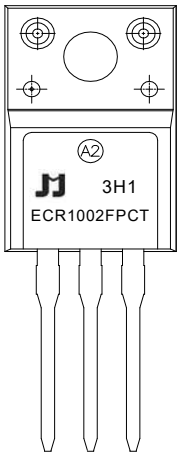
ELECTRICAL CHARACTERISTICS(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=10A, T_J=25^{\circ}C$	V_F	-	1.1	1.25	V
	$I_F=5A, T_J=150^{\circ}C$		-	0.8	0.895	
	$I_F=5A, T_J=25^{\circ}C$		-	0.95	1.1	
DC reverse current at rated DC blocking voltage	$T_J=25^{\circ}C$	I_R	-	0.1	5	μA
	$T_J=150^{\circ}C$		-	20	200	
Reverse recovery time	$I_F=1A, V_R=30V, dI_F/dt=100 A/\mu s, T_J=25^{\circ}C$	t_{rr}	-	-	25	ns
	$I_F=0.5A, I_R=1A, I_{RR}=0.25A, T_J=25^{\circ}C$		-	-	25	

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-h)}$	Thermal resistance from junction to heatsink	-	-	5.7	$^{\circ}C/W$
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	55	-	$^{\circ}C/W$

MARKING



ECR	EPI Hyperfast Recovery Rectifier
10	$I_{F(AV)}=10A$
02	$V_{RRM}:200V$
FP	Package:TO-220FP
CT	Common cathode

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

3x1:

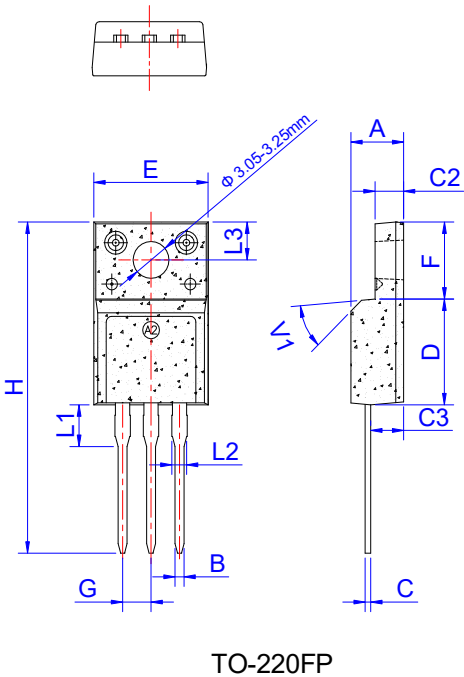
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION

<u>J</u>	<u>E</u>	<u>C</u>	<u>R</u>	<u>10</u>	<u>02</u>	<u>FP</u>	<u>CT</u>
JIEJIE Microelectronics	Epi Hyper fast	Rectifier		$I_{F(AV)}=10A$	$V_{RRM}:200V$	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

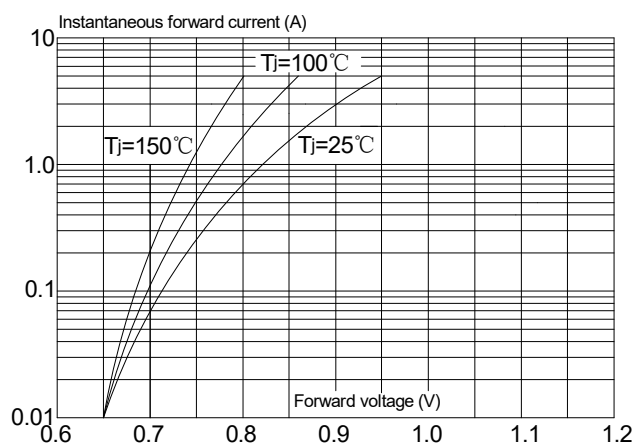


FIG.2: Typical reverse characteristics

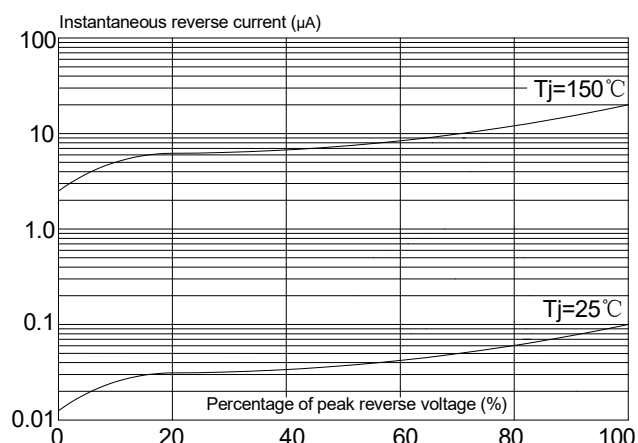


FIG.3: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

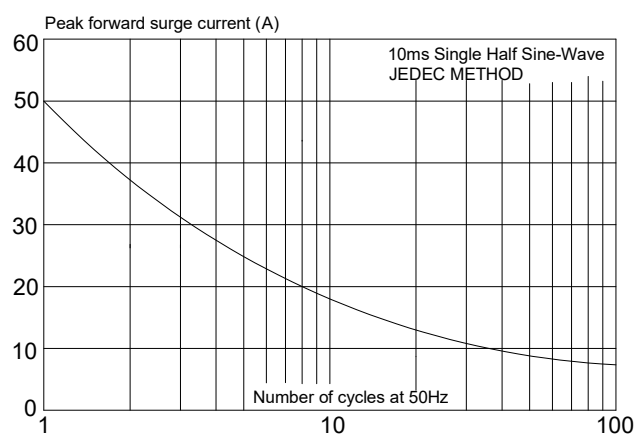


FIG.4: Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

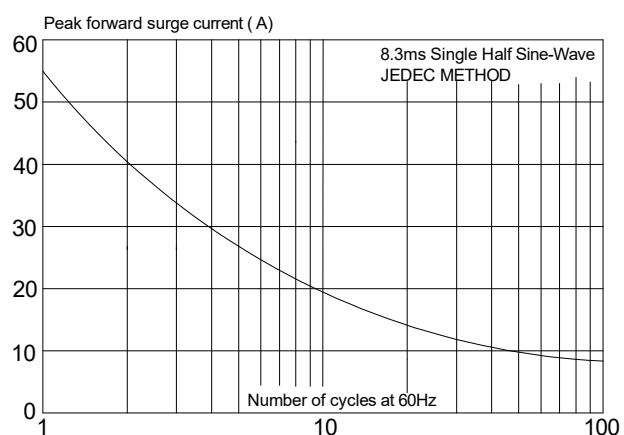


FIG.5: Forward current derating curve

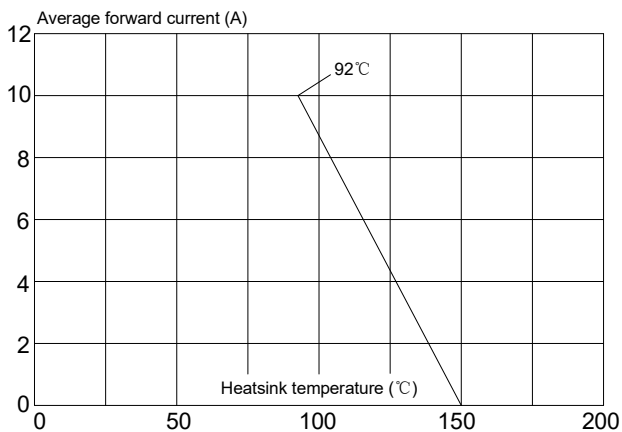
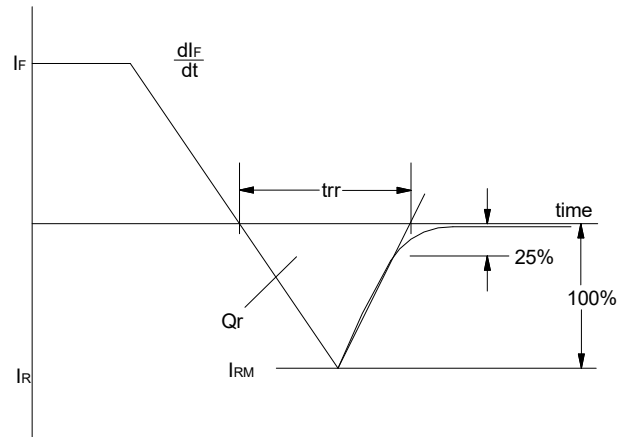


FIG.6: Reverse recovery definitions



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