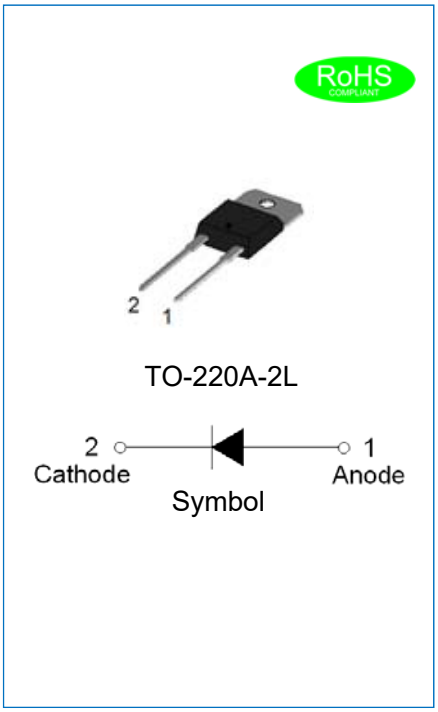
JECR2006AL

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 discontinuous current mode (DCM) power factor correction (PFC), active PFC in air conditioner, high frequency switched-mode power supplies
- ✧ Insulation (2500V_{RMS}) allows placement on same heatsink as mosfet and flexible heatsinking on common or separate heatsink



MECHANICAL DATA

- ✧ Case: TO-220A-2L molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Internally constructed isolated package is offered for ease of heat sinking with highest isolation voltage
- ✧ Weight:2.1 gram

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

Parameter	Symbol	JECR2006AL	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum DC blocking voltage	V_{DC}	600	V
Average forward current at T_{mb}=120℃	$I_{F(AV)}$	20	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	220	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load		200	
Operating junction 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

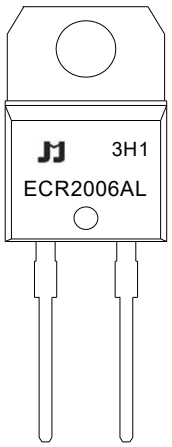
ELECTRICAL CHARACTERISTICS(Rating at 25℃ ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F=20A,T_j=25℃	V_F	-	2	2.9	V
	I_F=20A,T_j=150℃		-	1.2	1.97	
Reverse current	V_R=600V,T_j=25℃	I_R	-	-	5	μA
	V_R=600V,T_j=150℃		-	-	300	
Reverse recovery time	I_F=1A,V_R=30V, di/dt=200A/μs,T_j=25℃	t_{rr}	-	16	20	ns
	I_F=20A,V_R=400V, di/dt=500A/μs,T_j=25℃		-	26	-	
	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=25℃		-	33	-	
	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	51	-	
Peak reverse recovery current	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=25℃	I_{RM}	-	2.8	-	A
	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	7.6	-	
Recovered charge	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=25℃	Q_r	-	47	-	nC
	I_F=20A,V_R=200V, di/dt=200A/μs,T_j=125℃		-	193	-	

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	-	-	2.1	℃/W
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	60	-	℃/W

MARKING



ECR	EPI Hyperfast Recovery Rectifier
20	$I_{F(AV)}$=20A
06	V_{RRM}:600V
AL	Package: TO-220A-2L

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	…

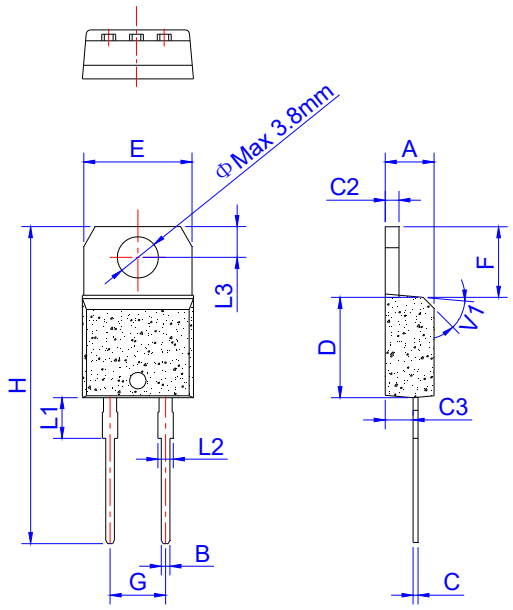
3H**x**: Batch number

ORDERING INFORMATION

J E C R 20 06 AL

- J: JieJie Microelectronics
- E: Epi
- C: Hyperfast
- R: Rectifier
- 20: $I_{F(AV)}$=20A
- 06: V_{RRM}:600V
- AL: Package:TO-220A-2L

PACKAGE MECHANICAL DATA



TO-220A-2L Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		5.08			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

PACKAGE INFORMATION- TO-220A-2L

OUTLINE	UNIT WEIGHT (g/PCS) TYP	TUBE (PCS)	PER CARTON (PCS)
TUBE	2.1	50	5,000

CHARACTERITICS CURVE

FIG.1: Typical forward characteristics

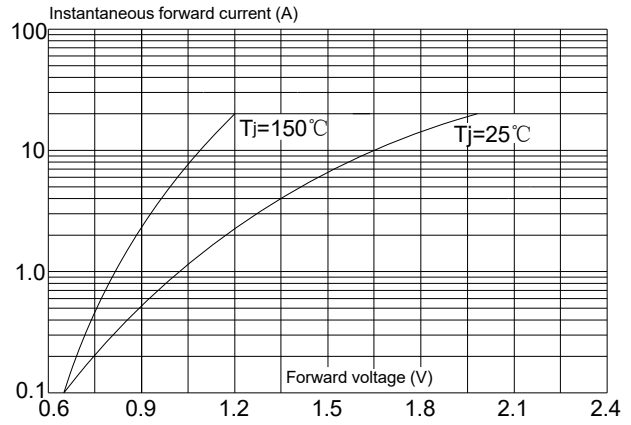


FIG.2: Typical reverse characteristics

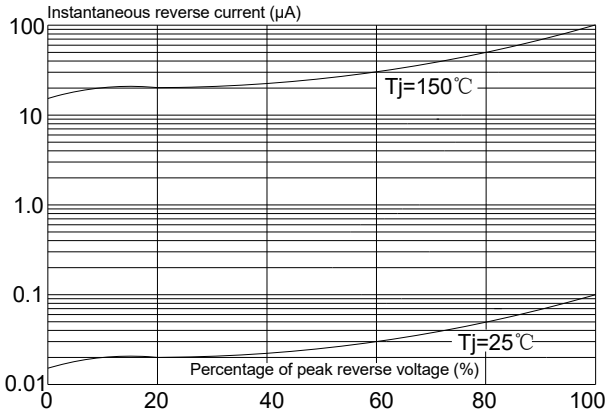


FIG.3: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

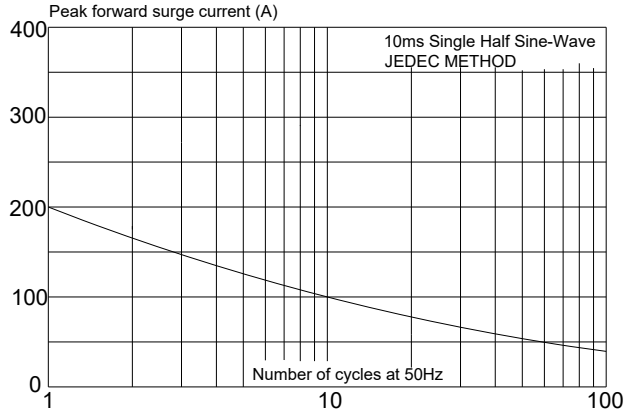


FIG.4: Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

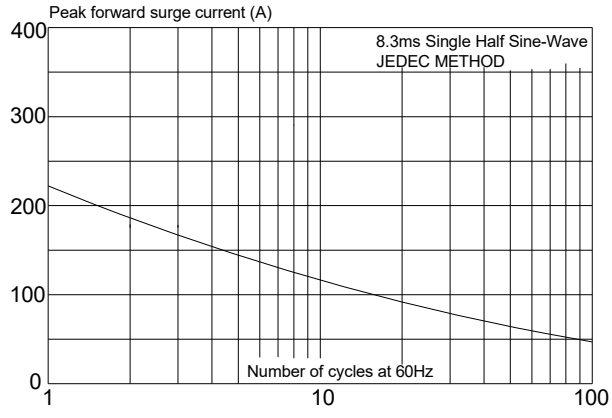


FIG.5: Forward current derating curve	FIG.6: Reverse recovery definitions