



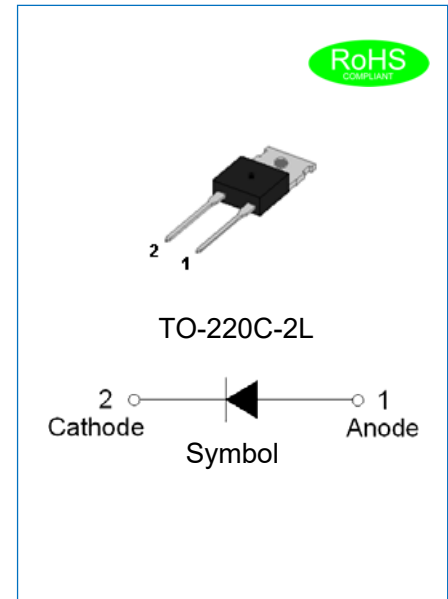
## JECR2006CL

### EPI HYPERFAST RECOVERY RECTIFIER

Rev.1.6

#### 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 active PFC in air conditioner, high frequency switched-mode power supplies, continuous current mode (CCM) power factor correction (PFC)



#### MECHANICAL DATA

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

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

Parameter	Symbol	JECR2006CL	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Maximum DC blocking voltage	$V_{DC}$	600	V
Average forward current at $T_{mb}=120^{\circ}\text{C}$	$I_{F(AV)}$	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	$^{\circ}\text{C}$

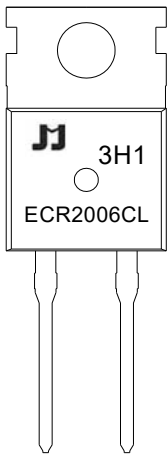
**ELECTRICAL CHARACTERISTICS**(Rating at 25°C ambient temperature unless otherwise specified.)

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

**THERMAL RESISTANCES**

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	-	-	1.2	$^{\circ}C/W$
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	60	-	$^{\circ}C/W$

MARKING



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

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

3x1:

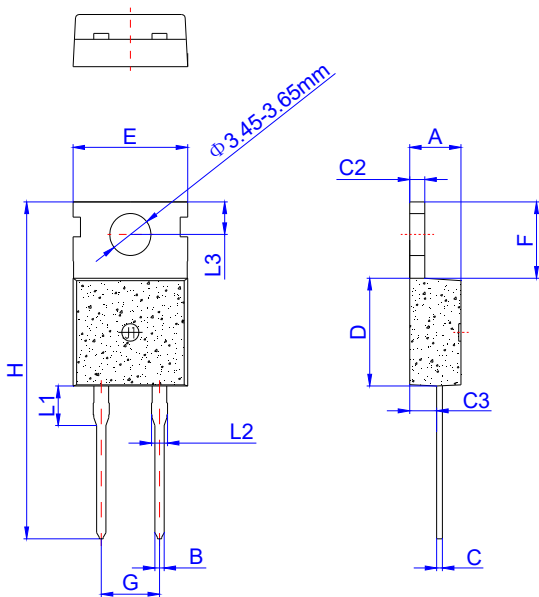
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION

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

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		5.08			0.200	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	

## PACKAGE INFORMATION-TO-220C-2L

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

## CHARACTERISTICS CURVE

FIG.1: Typical forward characteristics

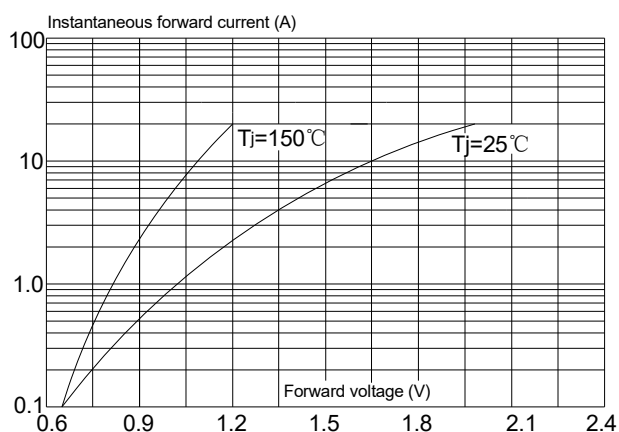


FIG.2: Typical reverse characteristics

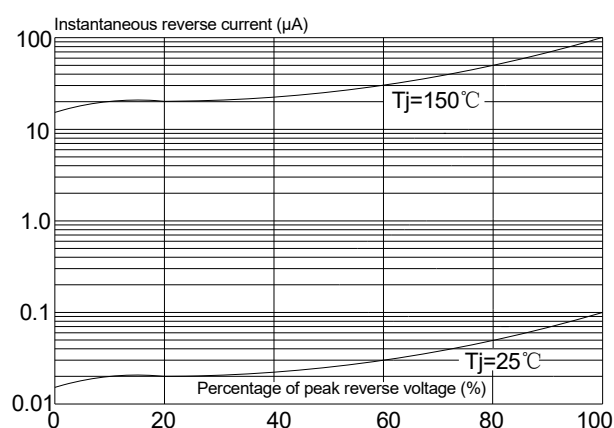


FIG.3: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

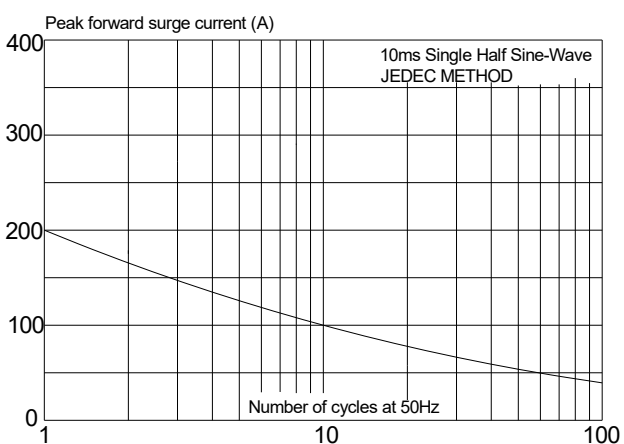


FIG.4: Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

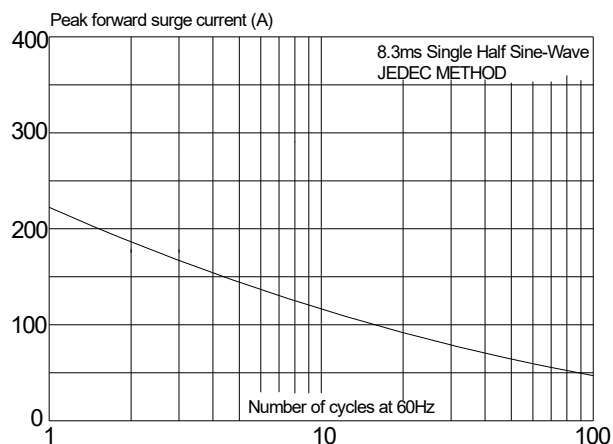


FIG.5: Forward current derating curve

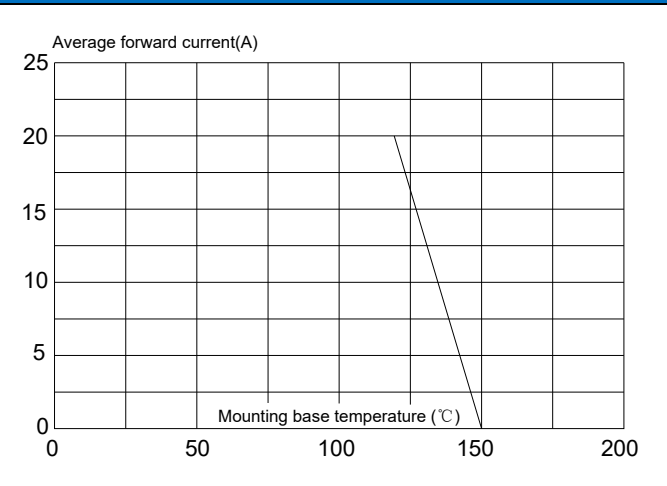


FIG.6: Reverse recovery definitions

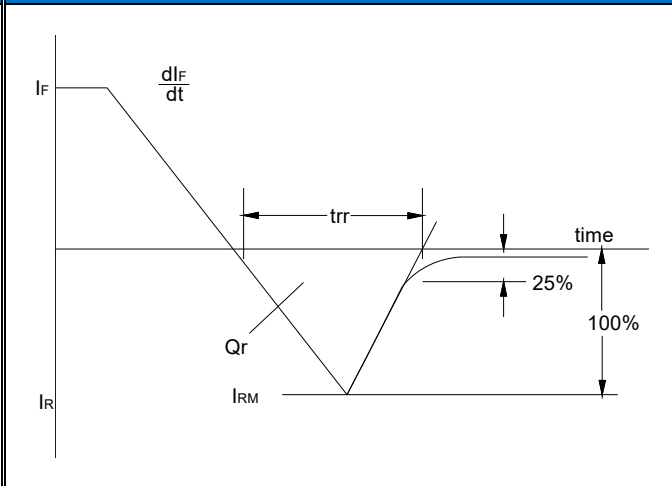


FIG.7: Forward power dissipation vs. average forward current (square waveform)

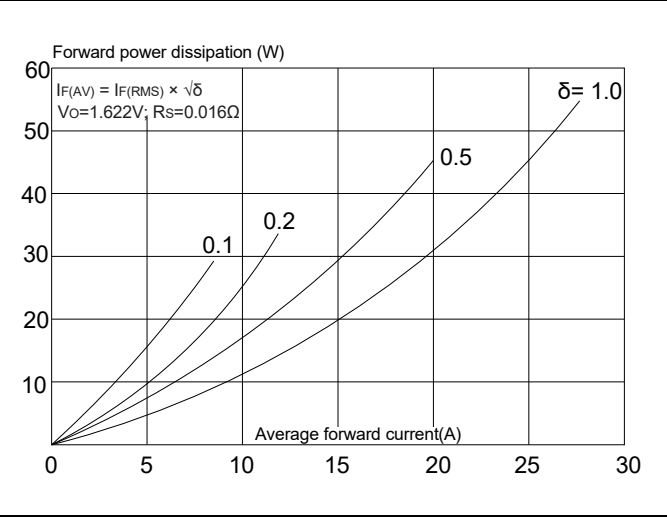
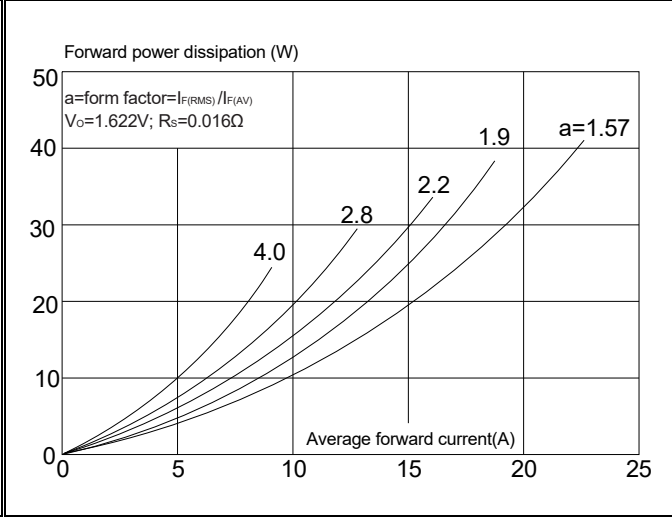


FIG.8: Forward power dissipation vs. average forward current (sinusoidal waveform)



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