



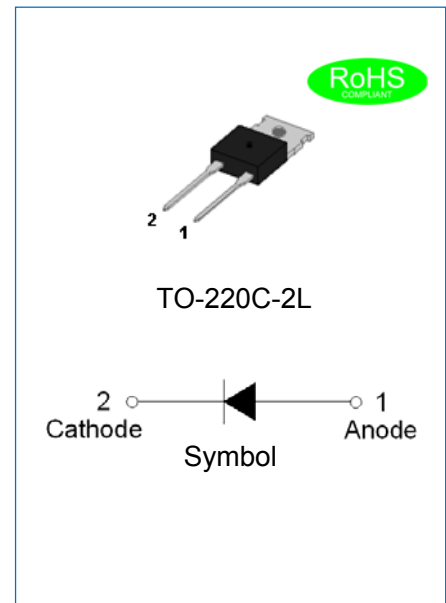
## JECR1006CL

### EPI HYPERFAST 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
- ✧ 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:2 gram

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

Parameter	Symbol	JECR1006CL	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 $\delta=0.5, T_{mb} \leq 127^{\circ}C, \text{square-wave pulse}$	$I_{F(AV)}$	10	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	132	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load		120	
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +175	$^{\circ}C$

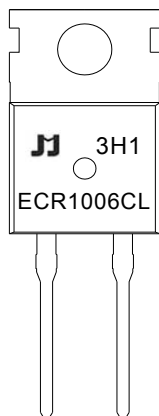
**ELECTRICAL CHARACTERISTICS**(Rating at 25°C case temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage @ $I_F=10A$	$T_j=25^\circ C$	$V_F$	-	2.5	3.2	V
	$T_j=150^\circ C$		-	1.3	2	
DC reverse current at rated DC blocking voltage	$T_j=25^\circ C$	$I_R$	-	-	5	$\mu A$
	$T_j=150^\circ C$		-	-	300	
Reverse recovery time	$I_F=1A, V_R=30V,$ $di/dt=200A/\mu s, T_j=25^\circ C$	$t_{rr}$	-	12	18	ns
	$I_F=10A, V_R=400V,$ $di/dt=500A/\mu s, T_j=25^\circ C$		-	19	-	
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=25^\circ C$		-	26	-	
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=125^\circ C$		-	34	-	
Peak reverse recovery current	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=25^\circ C$	$I_{RM}$	-	2	-	A
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=125^\circ C$		-	4.8	-	
Recovered charge	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=25^\circ C$	$Q_r$	-	26	-	nC
	$I_F=10A, V_R=200V,$ $di/dt=200A/\mu s, T_j=125^\circ C$		-	83	-	

**THERMAL RESISTANCES**

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	-	-	2	$^\circ C/W$
$R_{th(j-a)}$	Thermal resistance from junction to ambient	-	60	-	$^\circ C/W$

MARKING



ECR	EPI Hyperfast Recovery Rectifier
10	$I_{F(AV)}=10A$
06	$V_{RRM}:600V$
CL	Package: TO-220C-2L

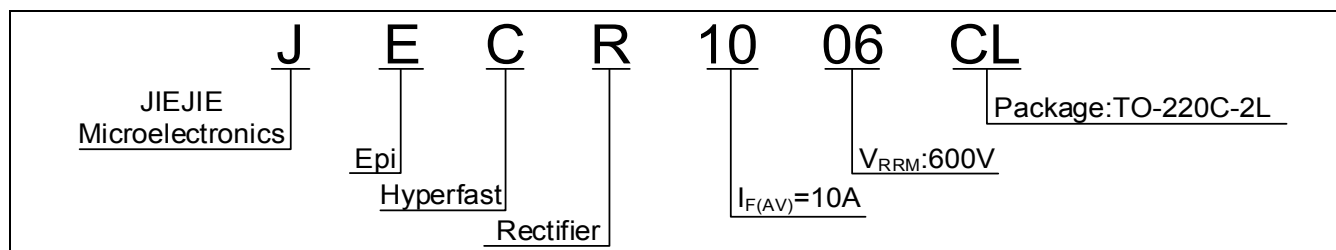
$xH1$ : Month, 1、2、3 ~ 9、A、B、C

$3x1$ :

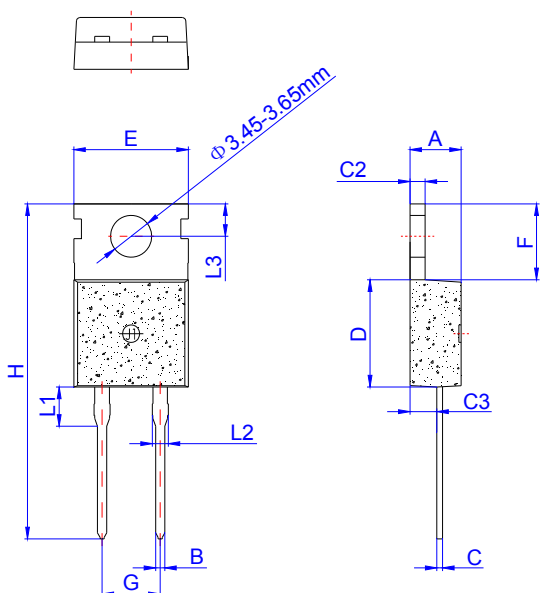
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

$3Hx$ : Batch number

ORDERING INFORMATION



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

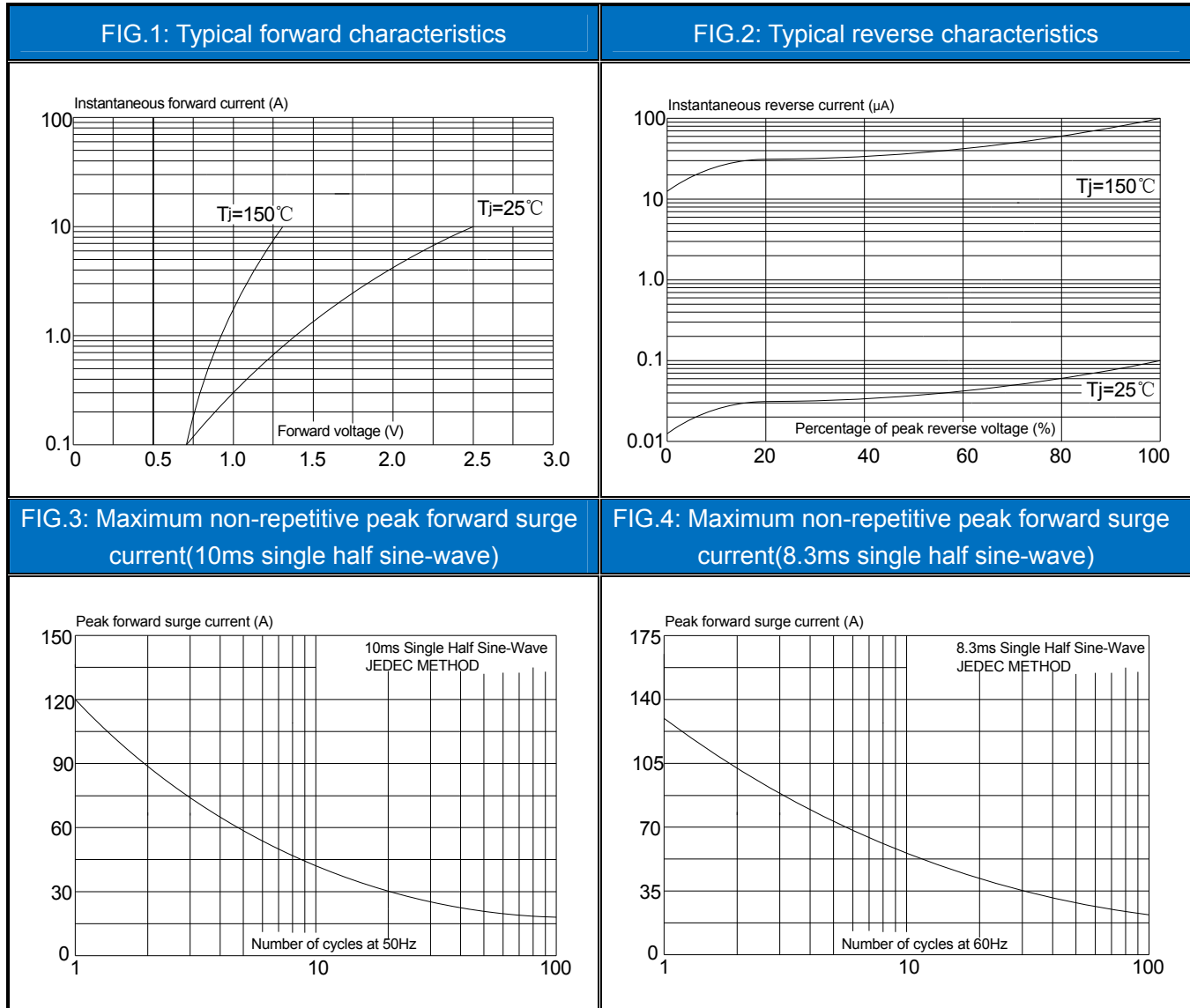


FIG.5: Forward current derating curve

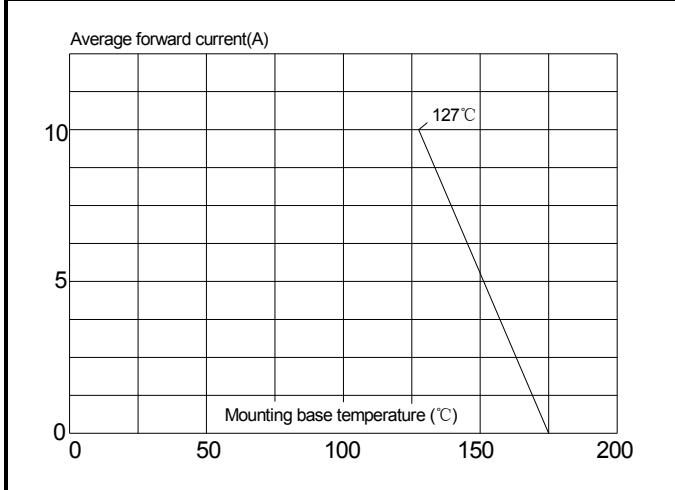


FIG.6: Reverse recovery definitions

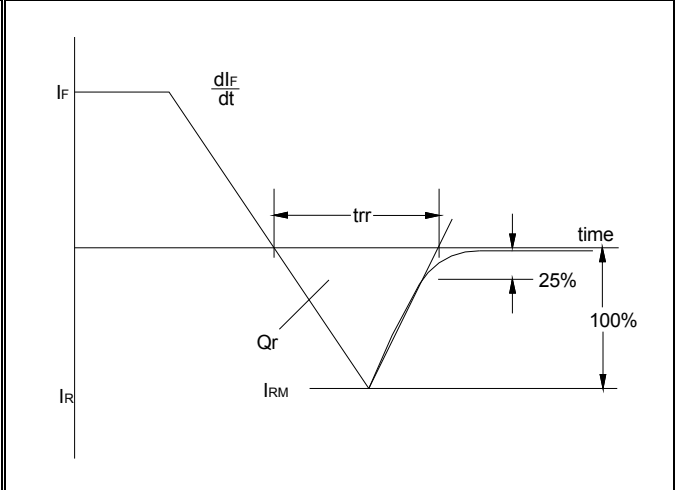


FIG.7: Forward power dissipation vs. average forward current (square waveform)

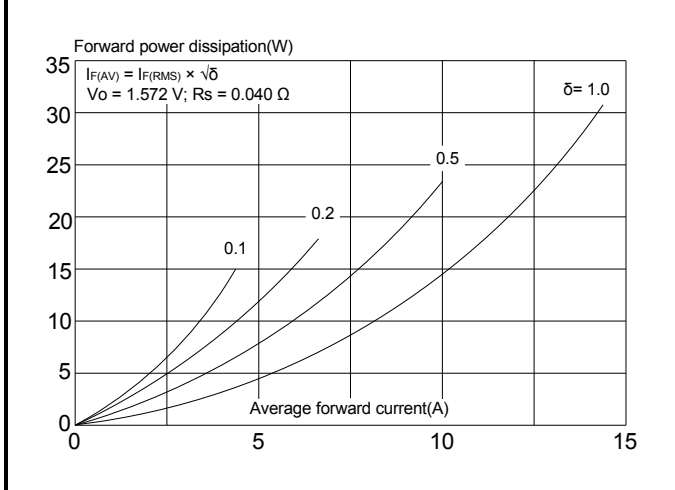
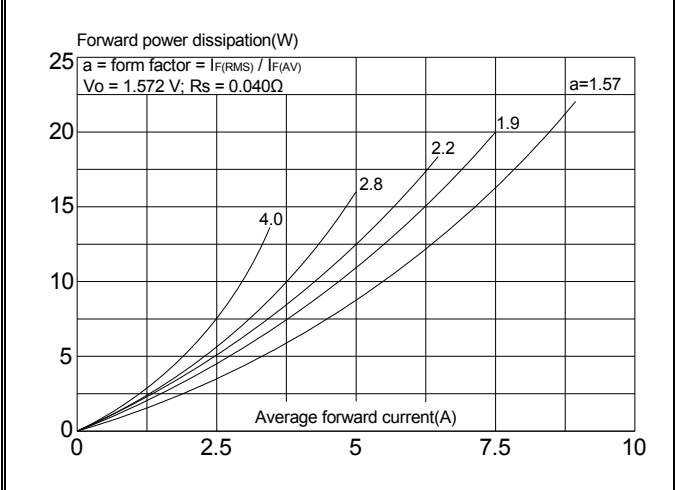


FIG.8: Forward power dissipation vs. average forward current (sinusoidal waveform)




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