



JECR2002BCT EPI HYPERFAST RECOVERY RECTIFIER

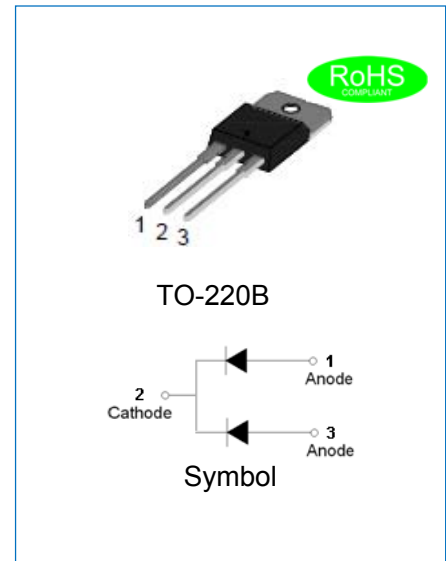
Rev.1.1

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
- ✧ Hyperfast recovery time and soft recovery characteristics
- ✧ Low recovery loss
- ✧ Home appliance power supply

MECHANICAL DATA

- ✧ Case: TO-220B molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 1.94 gram



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

Parameter	Symbol	JECR2002BCT	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 $T_{mb}=149^{\circ}C$	$I_{F(AV)}$	20	A
Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load (per diode)	I_{FSM}	137	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load (per diode)		125	
Junction temperature and storage temperature range	T_j, T_{stg}	-55 to +175	°C

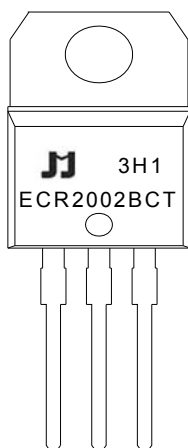
ELECTRICAL CHARACTERISTICS(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=8A, T_j=150^\circ C$	V_F	-	0.76	0.85	V
	$I_F=20A, T_j=25^\circ C$		-	1.1	1.25	V
	$I_F=10A, T_j=25^\circ C$		-	1.0	1.1	V
DC reverse current at rated DC blocking voltage	$T_j=25^\circ C$	I_R	-	-	5	μA
	$T_j=150^\circ C$		-	-	200	
Recovered charge	$I_F=2A, V_R=30V, dl_F/dt=20A/\mu s, T_j=25^\circ C$	Q_r	-	13.5	-	nC
	$I_F=1A, V_R=30V, dl_F/dt=100A/\mu s, T_j=25^\circ C$		-	14.5	-	
Peak reverse recovery current	$I_F=1A, V_R=30V, dl_F/dt=100A/\mu s, T_j=25^\circ C$	I_{RM}	-	1.7	-	A
Reverse recovery time	$I_F=1A, V_R=30V, dl_F/dt=100A/\mu s$	t_{rr}	-	18	25	ns

THERMAL RESISTANCES

Symbol	Parameter		Min.	Typ.	Max.	Unit
$R_{th(j-a)}$	Thermal resistance from junction to ambient		-	8	-	$^\circ C/W$
$R_{th(j-mb)}$	Thermal resistance from junction to mounting base	per diode	-	-	2.4	$^\circ C/W$
		both diodes	-	-	1.4	

MARKING



ECR	EPI Hyperfast Recovery Rectifier
20	$I_{F(AV)}=20A$
02	$V_{RRM}:200V$
B	Package:TO-220B
CT	Common cathode

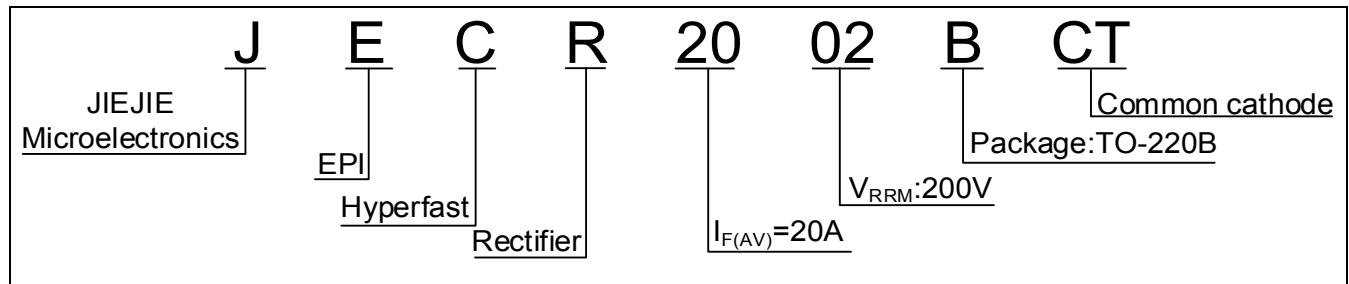
xH1: Month, 1、2、3 ~ 9、A、B、C

3x1:

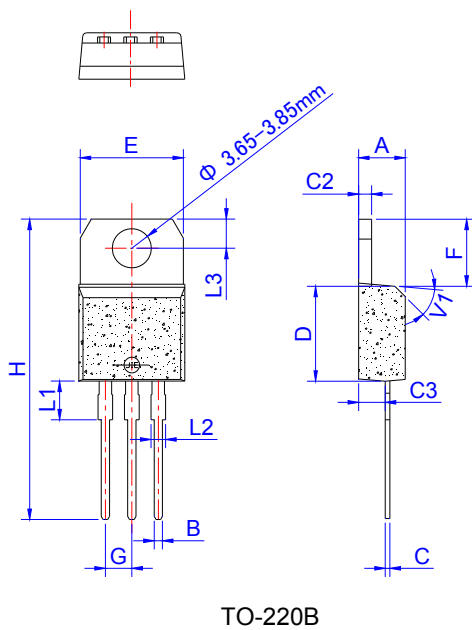
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION



PACKAGE MECHANICAL DATA



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	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.75			0.147	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

PACKAGE INFORMATION-TO-220B

OUTLINE	UNIT WEIGHT (g/PCS) typ.	TUBE (PCS)	PER CARTON (PCS)
TUBE	1.94	50	5,000

CHARACTERISTICS CURVE

FIG.1: Typical forward characteristics (25°C)

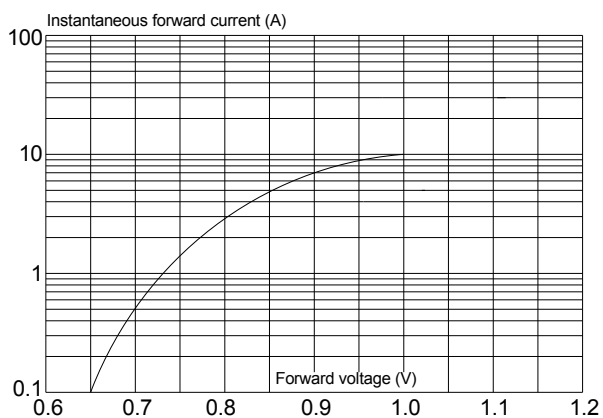


FIG.2: Typical reverse characteristics

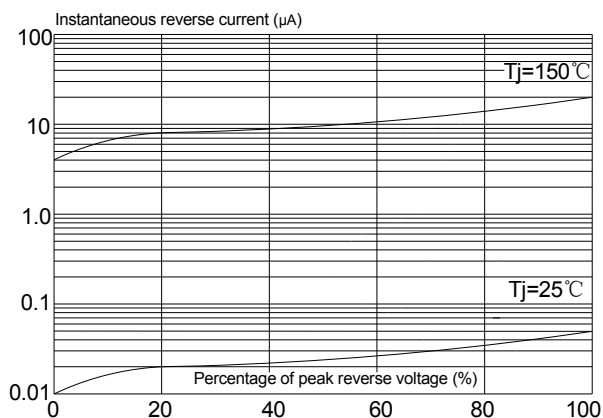


FIG.3: Maximum non-repetitive peak forward surge current(10ms single half sine-wave)

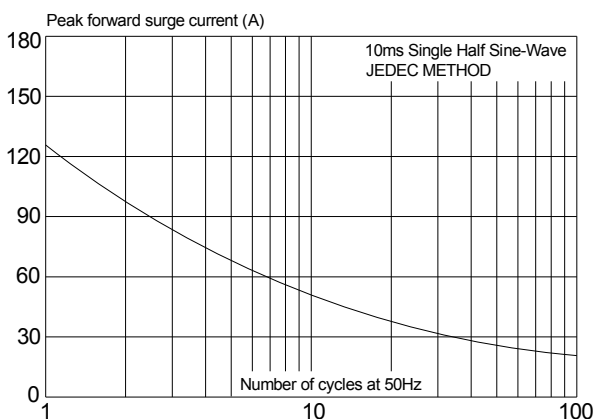


FIG.4: Maximum non-repetitive peak forward surge current(8.3ms single half sine-wave)

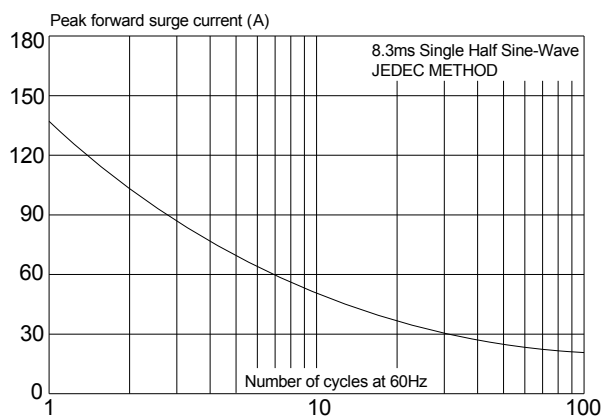


FIG.5: Forward current derating curve

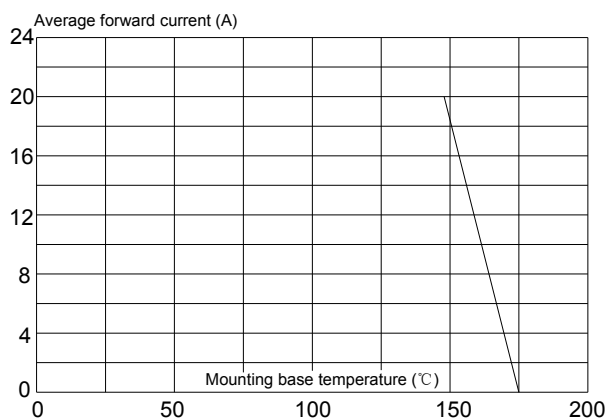


FIG.6: Reverse recovery definitions

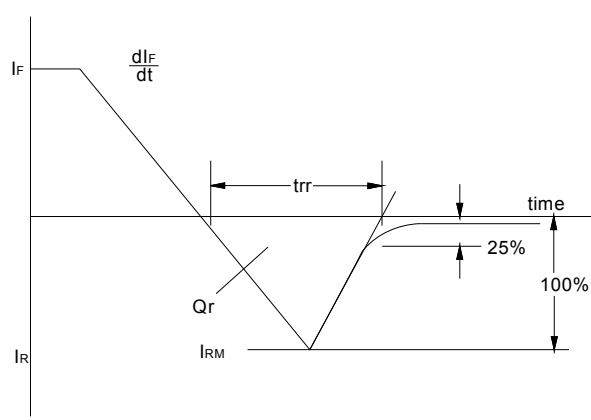


FIG.7: Forward power dissipation vs. average forward current(square waveform)

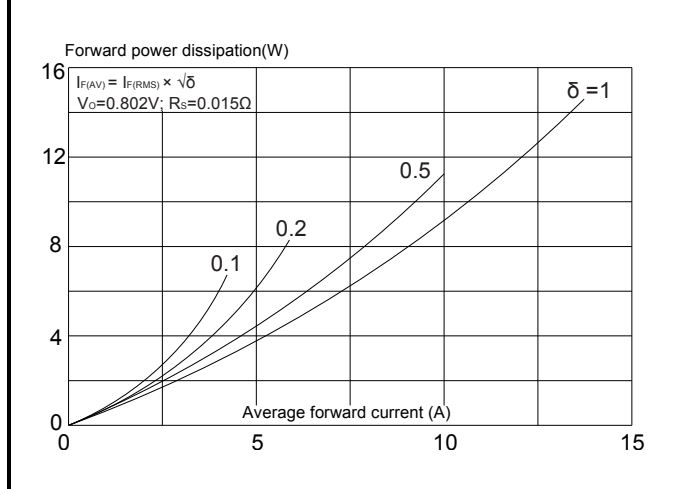
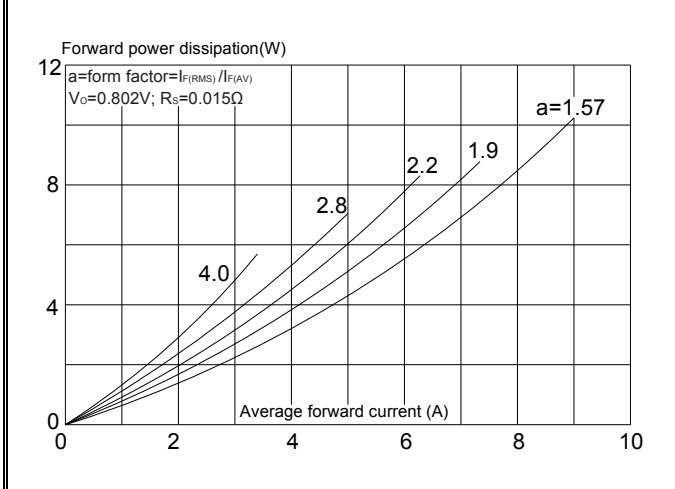


FIG.8: Forward power dissipation vs. average forward current(sinusoidal waveform)




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