



JPCR2003ECT

EPI PLANAR HYPERFAST SOFT RECOVERY RECTIFIER

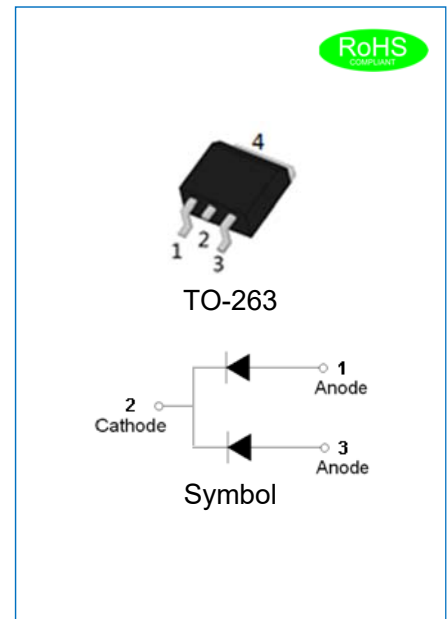
Rev.1.1

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
- ✧ Epitaxial planar technology
- ✧ 5th Generation soft fast recovery characteristics
- ✧ Low recovery loss
- ✧ Output rectifiers in high-frequency switched-mode power supplies

MECHANICAL DATA

- ✧ Case: TO-263 molded plastic over passivated junction
- ✧ Terminals: Solder plated, solderable per J-STD-002
- ✧ Weight: 1.55 gram



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

Parameter	Symbol	JPCR2003ECT	Unit
Maximum repetitive peak reverse voltage (Pin1~2 or Pin3~2)	V_{RRM}	300	V
Maximum DC blocking voltage(Pin1~2 or Pin3~2)	V_{DC}	300	V
Average forward current at $T_C=150^{\circ}\text{C}$ (Pin1,3~2)	$I_{F(AV)}$	20	A
Peak forward surge current: 10ms single half sine-wave superimposed on rated load(Pin1~2 or Pin3~2)	I_{FSM}	150	A
Junction temperature and storage temperature range	T_j, T_{stg}	-55 to +175	$^{\circ}\text{C}$

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

Parameter		Symbol	Min.	Typ.	Max.	Unit
Forward voltage (Pin1~2 or Pin3~2)	$I_F=10\text{A}, T_j=25^{\circ}\text{C}$	V_F	-	1.05	1.25	V
	$I_F=10\text{A}, T_j=150^{\circ}\text{C}$		-	0.85	1.00	
Reverse leakage current (Pin1~2 or Pin3~2)	$V_R=300\text{V}, T_j=25^{\circ}\text{C}$	I_R	-	-	5	μA
	$V_R=300\text{V}, T_j=150^{\circ}\text{C}$		-	-	200	
Reverse recovery time (Pin1~2 or Pin3~2)	$I_F=1\text{A}, V_R=30\text{V},$ $dl_F/dt=200\text{A}/\mu\text{s}, T_j=25^{\circ}\text{C}$	t_{rr}	-	17	25	ns

ELECTRICAL CHARACTERISTICS

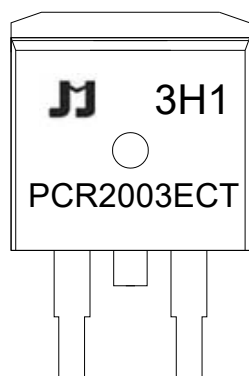
(Rating at 25°C ambient temperature unless otherwise specified, continued)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Reverse recovery time (Pin1~2 or Pin3~2)	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=25^\circ C$	t_{rr}	-	25	-	ns
	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=125^\circ C$		-	40	-	
Reverse recovery current (Pin1~2 or Pin3~2)	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=25^\circ C$	I_{RRM}	-	3	-	A
	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=125^\circ C$		-	6.5	-	
Reverse recovery charge (Pin1~2 or Pin3~2)	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=25^\circ C$	Q_{rr}	-	40	-	nC
	$I_F=10A, V_R=200V,$ $dl_F/dt=200A/\mu s, T_j=125^\circ C$		-	140	-	

THERMAL RESISTANCES

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{th(j-c)}$	Thermal resistance from junction to case(Pin1,3~2)	-	-	2	°C/W

MARKING



PCR	Planar Hyperfast Recovery Rectifier
20	$I_{F(AV)}=20A$
03	$V_{RRM}:300V$
E	Package:TO-263
CT	Common cathode

xH1: Month, 1/2/3~9/A/B/C3x1:

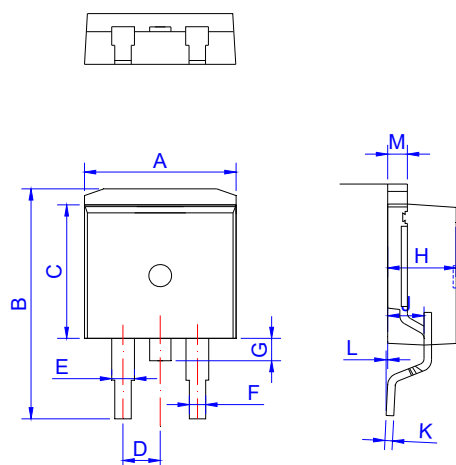
2018	2019	2020	2021	2022	2023	2024
H	I	J	K	L	M	N
2025	2026	2027	2028	2029	2030	...
O	P	Q	R	S	T	...

3Hx: Batch number

ORDERING INFORMATION

J	P	C	R	20	03	E	CT
JieJie Microelectronics	Epi planar	Hyperfast	Rectifier	$I_{F(AV)}=20A$	$V_{RRM}=300V$	Common cathode	Package:TO-263

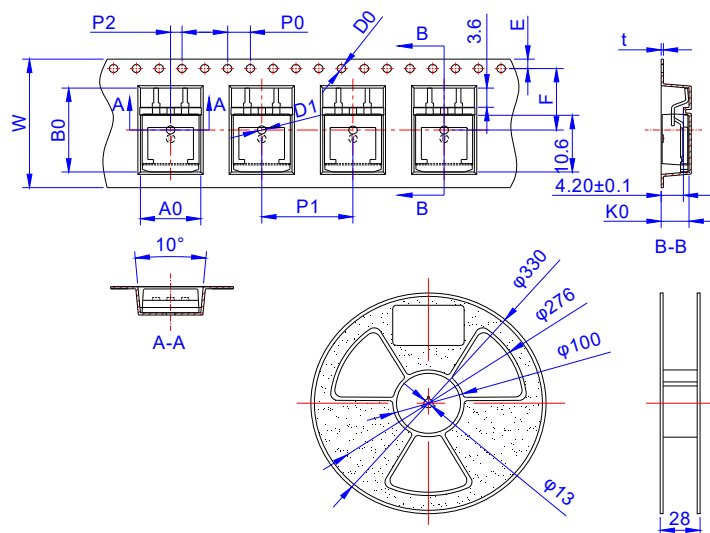
PACKAGE MECHANICAL DATA



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	8.80		9.60	0.346		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.030		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.17		1.37	0.046		0.054

TAPE AND REEL SPECIFICATION-TO-263



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	23.70	24.00	24.30	0.933	0.945	0.957
E	1.65	1.75	1.85	0.065	0.069	0.073
F	11.40	11.50	11.60	0.449	0.453	0.457
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.50	1.60	-	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	15.90	16.00	16.10	0.626	0.630	0.634
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	10.80	10.90	11.00	0.425	0.429	0.433
B0	16.20	16.30	16.40	0.638	0.642	0.646
K0	4.80	4.90	5.00	0.189	0.193	0.197
t	0.35	0.40	0.45	0.014	0.016	0.018

PACKAGE INFORMATION-TO-263

PART No.	UNIT WEIGHT (g/PCS) TYP	TUBE (PCS)	PER CARTON (PCS)
JPCR2003ECT	1.55	50	5,000
PART No.	UNIT WEIGHT (g/PCS) TYP	REEL (PCS)	PER CARTON (PCS)
JPCR2003ECT-R	1.55	800	4,000

CHARACTERISTICS CURVE

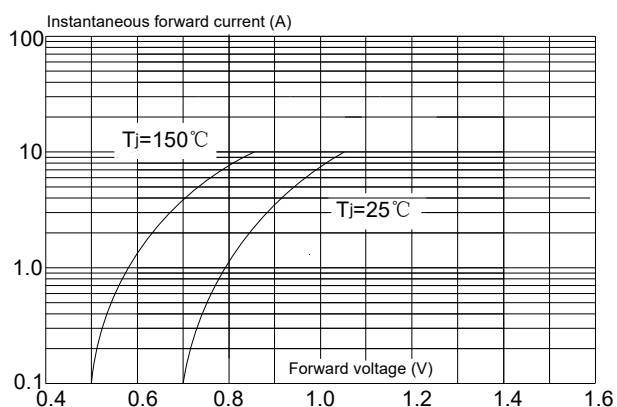
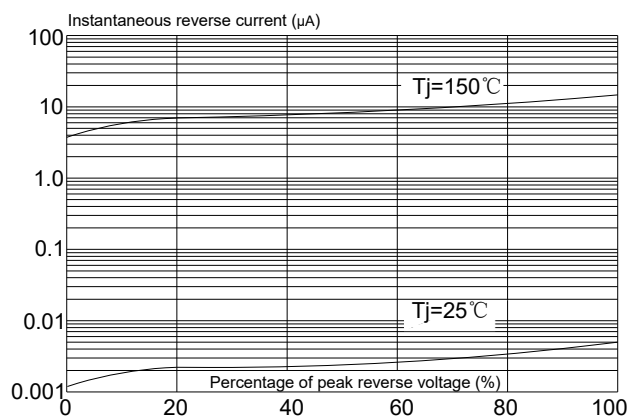
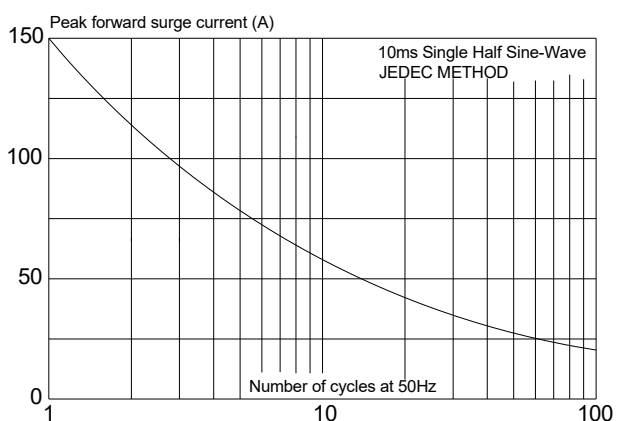
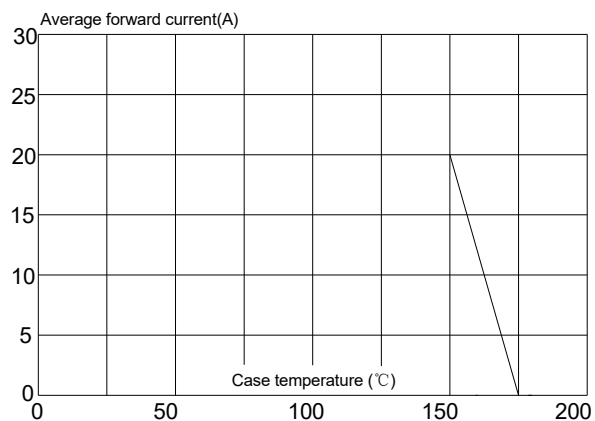
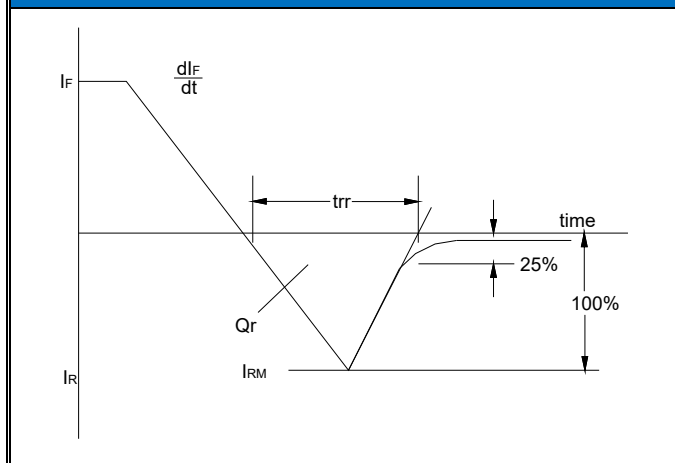
FIG.1 Typical forward characteristics
(Pin1~2 or Pin3~2)FIG.2 Typical reverse characteristics
(Pin1~2 or Pin3~2)FIG.3 Maximum non-repetitive peak forward surge current
(10ms single half sine-wave, Pin1~2 or Pin3~2)FIG.4: Forward current derating curve
(Pin1,3~2)

FIG.5 Reverse recovery definitions



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