

Ultra Fast Recovery Rectifier Diodes

**FEATURES**

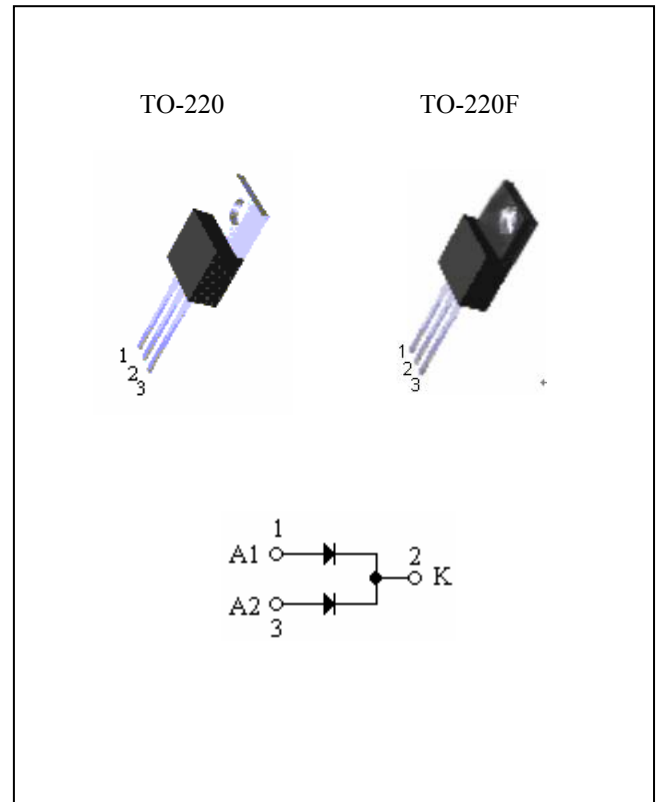
- Suited for SMPS application
- Low forward and reverse recovery time
- High surge current capability
- Low losses

**DESCRIPTION**

- Low cost dual rectifier suited for switching mode power supply and high frequency DC to DC converters.
- This device is intended for use in low voltage, high frequency inverters, free wheeling and polarity protection applications.

**ORDERING INFORMATION**

Device	Operating Temperature	Package
PJU10C20CZ	-20°C ~ +85°C	TO-220



**MAXIMUM RATINGS**

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	$V_{RRM}$	200	V
RMS forward current	$I_{F(RMS)}$	10	A
Average forward current $\delta = 0.5$	$I_{F(AV)}$	5	A
Surge non repetitive forward current $t_p = 10ms$ sinusoidal	$I_{FSM}$	50	A
Storage temperature range	$T_{stg}$	-65 to +150	°C

**THERMAL RESISTANCES**

Parameter	Symbol	Value	Unit
Junction to case To-220	Per diode	4.0	°C/W
	Total	2.4	
Coupling	$R_{th(c)}$	0.7	

When diodes 1 and 2 are used smoultaneously:

$$\Delta T_j(\text{diode } 1) = P(\text{diode } 1) \times T_{th(j-c)}(\text{Per diode}) + P(\text{diode } 2) \times R_{tj(c)}$$

**STATIC ELECTRICAL CHARACTERISTICS(per diode)**

Parameters	Symbol	Test conditions		Min	Typ	Max	Unit
Reverse leakage current	I <sub>R</sub>	T <sub>j</sub> =25°C	V <sub>R</sub> =V <sub>RRM</sub>			50	μ A
		T <sub>j</sub> =100°C				0.6	mA
Forward voltage drop	VF	T <sub>j</sub> =125°C	IF=5A		0.8	0.99	V
		T <sub>j</sub> =125°C	IF=10A		0.95	1.2	
		T <sub>j</sub> =25°C	IF=10A			1.25	

Pulse test: tp=5ms, δ <2%

    Tp=380 μ s, δ <2%

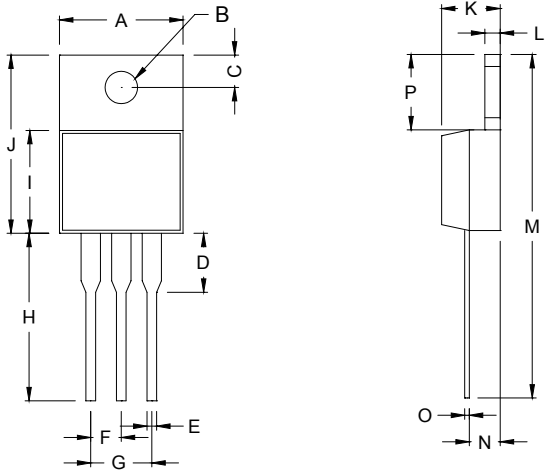
To evaluate the conduction losses use the following equation:

$$P=0.78 \times I_{F(AV)}+0.042 \times I_F^2(RMS)$$

**STATIC ELECTRICAL CHARACTERISTICS(per diode)**

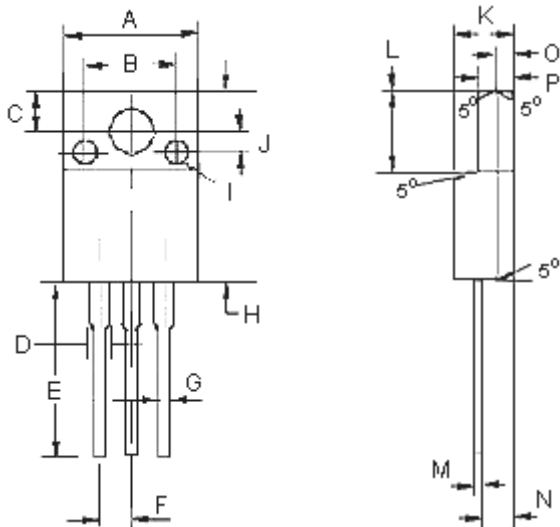
Test conditions		Symbol	Min	Typ	Max	Unit
T <sub>j</sub> =25 °C	I <sub>F</sub> =0.5A , Irr=0.25A , I <sub>R</sub> =1A	T <sub>rr</sub>			30	ns
	I <sub>F</sub> =1A, d <sub>IF</sub> /dt=50A/ μ s , V <sub>FR</sub> =1.1x VFmax	T <sub>fr</sub>		20		ns
	I <sub>F</sub> =1A, d <sub>IF</sub> /dt=50A/ μ s	V <sub>FP</sub>		3		V

TO-220 Unit : mm



TO-220 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.000	10.500	0.394	0.413
B	3.240	4.440	0.128	0.175
C	2.440	2.940	0.096	0.116
D	-	6.350	-	0.250
E	0.381	1.106	0.015	0.040
F	2.345	2.715	0.092	0.058
G	4.690	5.430	0.092	0.107
H	12.700	14.732	0.500	0.581
I	8.382	9.017	0.330	0.355
J	14.224	16.510	0.560	0.650
K	3.556	4.826	0.140	0.190
L	0.508	1.397	0.020	0.055
M	27.700	29.620	1.060	1.230
N	2.032	2.921	0.080	0.115
O	0.255	0.610	0.010	0.024
P	5.842	6.858	0.230	0.270

TO-220F Unit : mm



TO-220F DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.960	10.36	0.392	0.408
B	6.800	7.200	0.268	0.283
C	3.100	3.500	0.122	0.138
D	1.470		0.059	
E	12.60	13.00	0.496	0.512
F	2.340	2.740	0.092	0.108
G	0.600	1.000	0.024	0.039
H	15.67	16.07	0.617	0.633
I	2-Ø1.0 DEEP 0.10			
J	1.900	2.300	0.075	0.090
K	4.500	4.900	0.177	0.193
L	6.480	0.680	0.255	0.262
M	0.450	0.600	0.017	0.023
N	2.560	2.960	0.100	0.166
O	0.700		0.027	
P	2.340	2.740	0.092	0.107