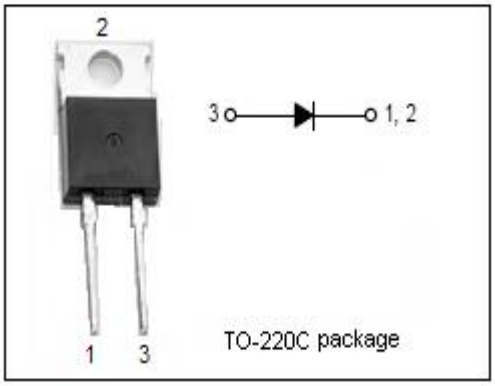
Ultra fast Rectifier

DPF30I300PA



FEATURES

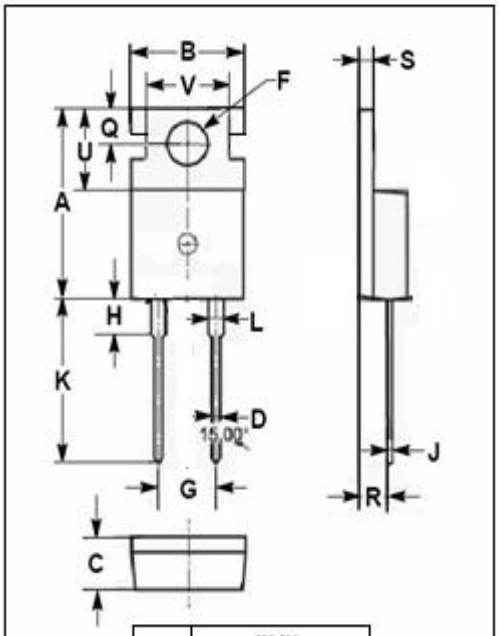
- With TO-220 packaging
- Metal silicon junction, majority carrier conduction
- Low leakage current
- Low power loss, high efficiency
- Guardring for overvoltage protection
- High surge capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Switching power supply
- High frequency inverters
- Freewheeling diodes
- Reverse battery protection
- Polarity protection applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{RRM} V_{RMS} V_R	Peak Repetitive Reverse Voltage RMS Voltage DC Blocking Voltage	300	V
$I_{F(AV)}$	Average Rectified Forward Current @Tc=145℃	30	A
I_{FRM}	Repetitive Peak Surge Current (Square Wave, 20kHz)	60	A
I_{FSM}	Nonrepetitive Peak Surge Current 8.3 ms single half sine-wave superimposed on rated load conditions;One shot	390	A
P_D	Maximum Power Dissipation	175	W
Tj	Junction Temperature	-55~175	℃
T_{stg}	Storage Temperature Range	-55~175	℃



DIM	mm MIN	mm MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	0.5	℃/W

ELECTRICAL CHARACTERISTICS (Pulse Test: Pulse Width=300μs,Duty Cycle≤1%)

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_F	Maximum Instantaneous Forward Voltage	I_F= 30A ;Tc= 25℃ I_F= 30A ;Tc= 125℃ I_F= 60A ;Tc= 25℃ I_F= 60A ;Tc= 125℃	1.17 0.98 1.37 1.21	V
I_R	Maximum Instantaneous Reverse Current	V_R= rated $V_{RRM;}$Tc= 25℃ Tc=125℃	5 250	μA
t_{rr}	Maximum Reverse Recovery Time	I_F =1A;dI_F/dt=200A/μs;V_R=200V	55	ns