

**Ultra fast Rectifier**
**BYC30-600P**
**FEATURES**

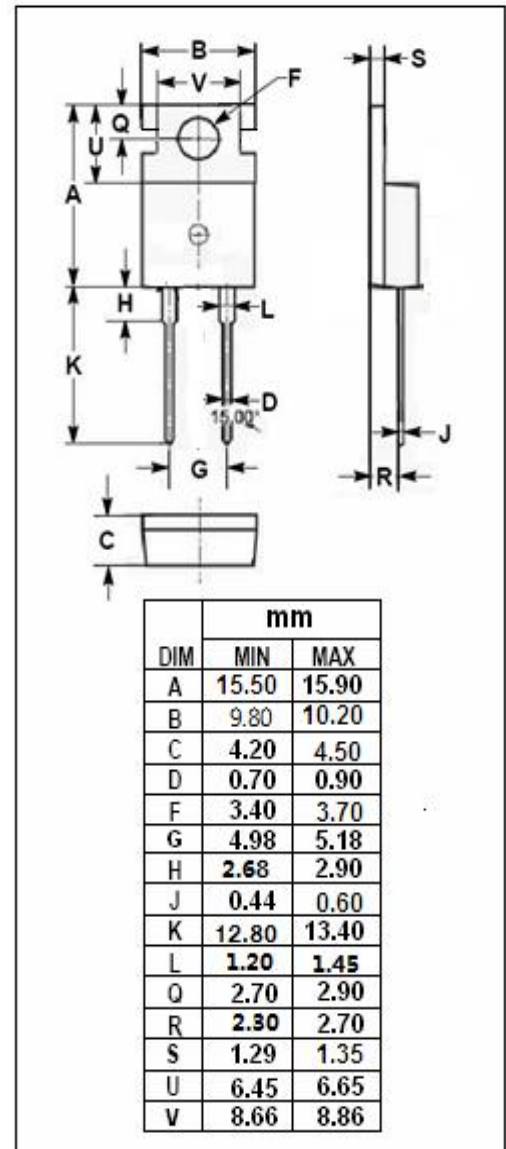
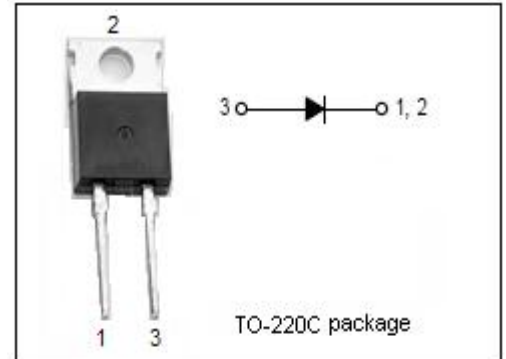
- High surge capacity
- Low forward voltage
- Fast switching
- Soft recovery characteristic
- Reverse surge capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Power supply output rectification
- Power management
- Instrumentation

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>R</sub> RM V <sub>R</sub> WM V <sub>R</sub>	Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	600	V
I <sub>F</sub> (AV)	Average Rectified Forward Current (Rated V <sub>R</sub> )	30	A
I <sub>FM</sub>	Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20kHz)	60	A
I <sub>FSM</sub>	Nonrepetitive Peak Surge Current (Surge applied at rated load conditions half-wave, single phase)	50Hz 60Hz 200 220	A
T <sub>J</sub>	Junction Temperature	-65~175	°C
T <sub>stg</sub>	Storage Temperature Range	-65~175	°C



## Ultra fast Rectifier

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-b}$	Thermal Resistance, Junction to Mounting Base	2.5	°C/W
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	60	°C/W

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ ) (Pulse Test: Pulse Width=300  $\mu$  s, Duty Cycle  $\leq$  2%)

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
$V_F$	Maximum Instantaneous Forward Voltage	$I_F=30\text{A}; T_j=25^\circ\text{C}$ $I_F=30\text{A}; T_j=150^\circ\text{C}$	2.75 1.80	V
$I_R$	Maximum Instantaneous Reverse Current	$V_R=V_{RWM}; T_j=25^\circ\text{C}$ $V_R=V_{RWM}; T_j=150^\circ\text{C}$	10 1000	$\mu$ A
$t_{rr}$	Maximum Reverse Recovery Time	$I_F=1\text{A}; di/dt=50\text{A}/\mu\text{s}; V_R=30\text{V}$	35	ns

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