

Ultra fast Rectifier

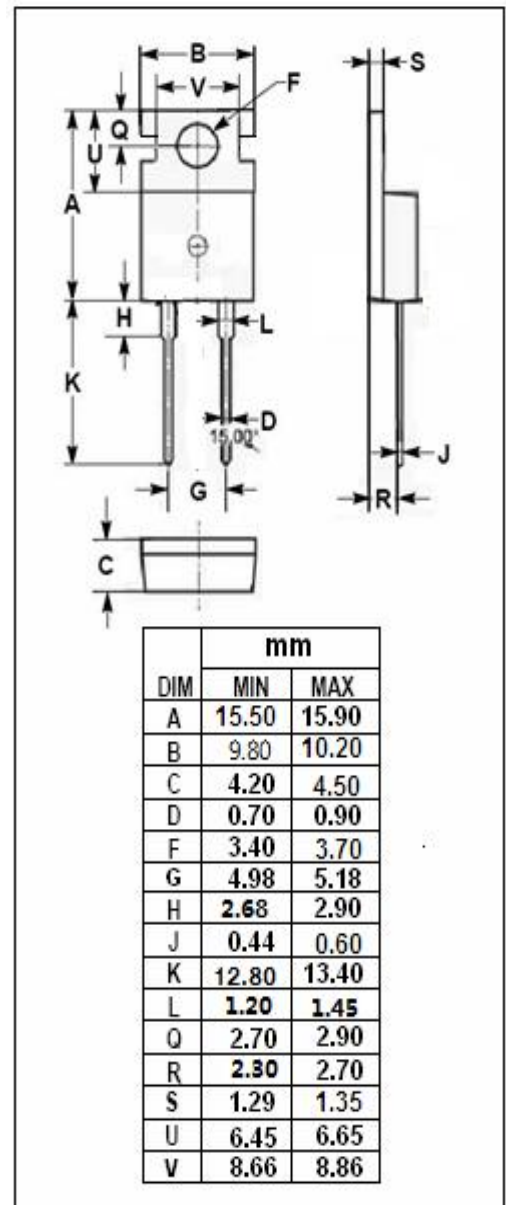
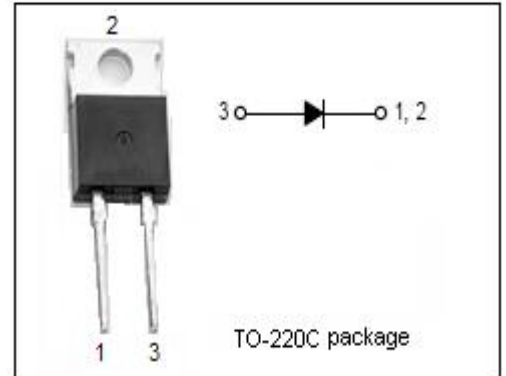
BYC15-600P

FEATURES

- With TO-220 packaging
- Metal silicon junction, majority carrier conduction
- 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
- Reverse battery protection
- Polarity protection applications



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

| SYMBOL   | PARAMETER   | VALUE   | UNIT |
|--|---|---------|------|
| V <sub>RRM</sub><br>V <sub>RMS</sub><br>V <sub>R</sub> | Peak Repetitive Reverse Voltage<br>RMS Voltage<br>DC Blocking Voltage   | 600     | V    |
| I <sub>F(AV)</sub>                                     | Average Rectified Forward Current @T <sub>c</sub> =121°C  | 15      | A    |
| I <sub>FRM</sub>                                       | Repetitive Peak Forward Current@T <sub>c</sub> =121°C   | 30      | A    |
| I <sub>FSM</sub>                                       | Nonrepetitive Peak Surge Current<br>10 ms single half sine-wave superimposed on<br>rated load conditions;One shot(50Hz) | 180     | A    |
| T <sub>j</sub>   | Junction Temperature  | -65~175 | °C   |
| T <sub>stg</sub>                                       | Storage Temperature Range   | -65~175 | °C   |

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## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                            | MAX | UNIT          |
|---------------|--------------------------------------|-----|---------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.5 | $^{\circ}C/W$ |

ELECTRICAL CHARACTERISTICS (Pulse Test: Pulse Width=300  $\mu$  s, Duty Cycle $\leq$ 1%)

| SYMBOL   | PARAMETER                             | CONDITIONS   | MAX        | UNIT    |
|----------|---------------------------------------|--|------------|---------|
| $V_F$    | Maximum Instantaneous Forward Voltage | $I_F = 15A; T_c = 25^{\circ}C$<br>$I_F = 15A; T_c = 150^{\circ}C$        | 3.2<br>2.0 | V       |
| $I_R$    | Maximum Instantaneous Reverse Current | $V_R = \text{rated } V_{RRM}; T_c = 25^{\circ}C$<br>$T_c = 150^{\circ}C$ | 10<br>1000 | $\mu$ A |
| $t_{rr}$ | Maximum Reverse Recovery Time         | $I_F = 1A; di_F/dt = -200A/\mu s; V_R = 30V$                             | 18         | ns      |

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