

# Ultra fast Rectifier

**RHRP15120**

## FEATURES

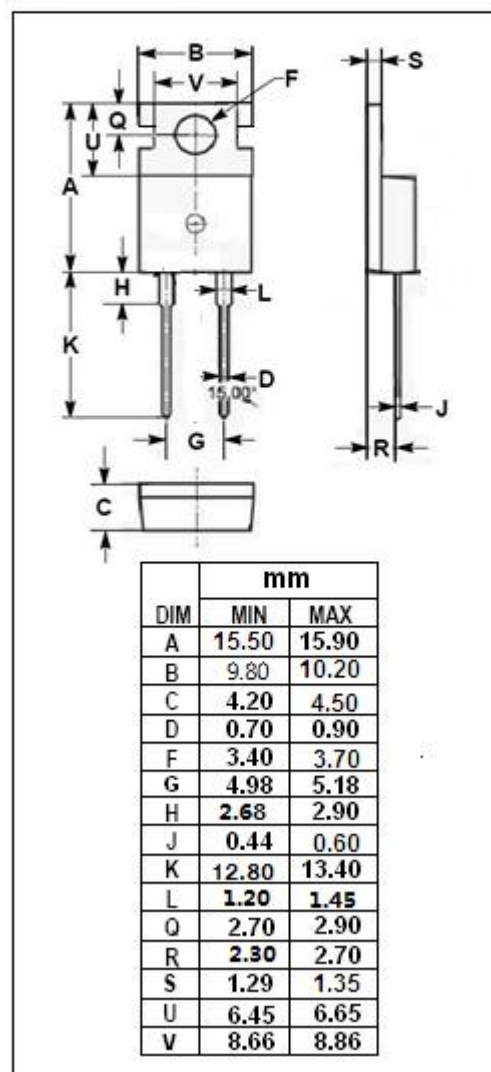
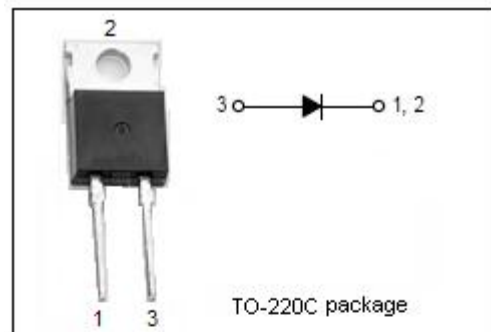
- With TO-220 packaging
- High current capability
- High reliability
- High surge current capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Switching power supply
- Power switching circuits
- General purpose

## ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )

| SYMBOL             | PARAMETER                                                                                                                   | VALUE                | UNIT               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| VRRM<br>VRWM<br>VR | Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage $t_w=500\text{ns}; \text{duty}=1/40$ | 1200<br>1200<br>1200 | V                  |
| IF(AV)             | Average Rectified Forward Current<br>@ $T_c=100^{\circ}\text{C}$                                                            | 15                   | A                  |
| $I_{FRM}$          | Peak Repetitive Forward Current<br>(Rated $V_R$ , Square Wave, 20kHz)                                                       | 30                   | A                  |
| IFSM               | Nonrepetitive Peak Surge Current<br>8.3ms single half sine-wave superimposed on<br>rated load conditions; One shot          | 200                  | A                  |
| $P_D$              | Maximum Power Dissipation                                                                                                   | 100                  | W                  |
| $T_J$              | Junction Temperature                                                                                                        | -65~175              | $^{\circ}\text{C}$ |
| $T_{stg}$          | Storage Temperature Range                                                                                                   | -65~175              | $^{\circ}\text{C}$ |



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## THERMAL CHARACTERISTICS

| SYMBOL      | PARAMETER                            | MAX | UNIT |
|-------------|--------------------------------------|-----|------|
| $R_{thj-c}$ | Thermal Resistance, Junction to Case | 1.5 | °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 | $I_F=15\text{A}$<br>$I_F=15\text{A}; T_j=150^{\circ}\text{C}$ | 3.2<br>2.6 | V       |
| $I_R$    | Maximum Instantaneous Reverse Current | $V_R=V_{RWM};$<br>$V_R=V_{RWM}; T_j=150^{\circ}\text{C}$      | 100<br>500 | $\mu$ A |
| $t_{rr}$ | Maximum Reverse Recovery Time         | $I_F=15\text{A}; dI_F/dt=100\text{A}/\mu\text{s}$             | 75         | ns      |

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