

# FBR5000W - FBR5010W

# FAST RECOVERY BRIDGE RECTIFIERS

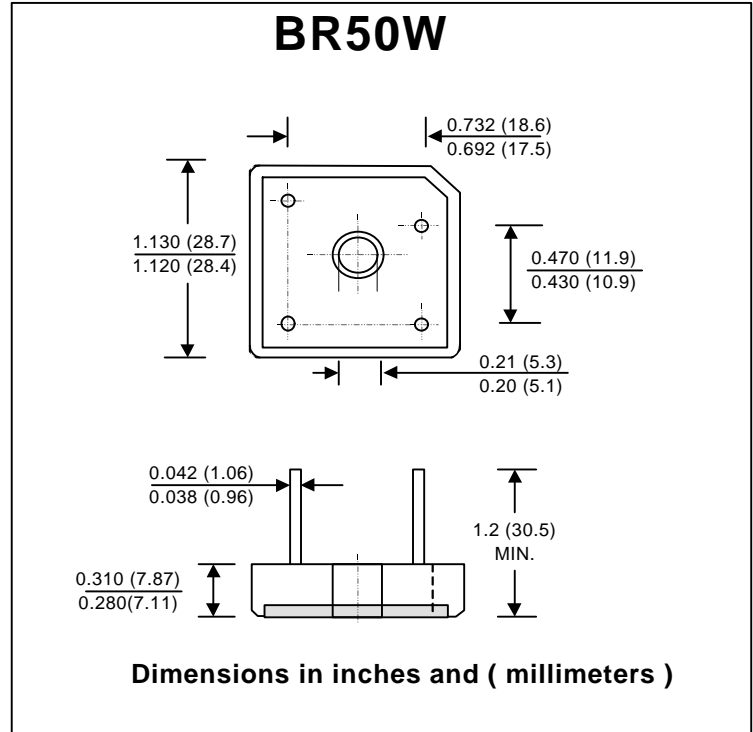
**PRV : 50 - 1000 Volts**  
**I<sub>o</sub> : 50 Amperes**

## FEATURES :

- \* High case dielectric strength
- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* Fast switching for high efficiency

## MECHANICAL DATA :

- \* Case : Molded plastic with heatsink integrally mounted in the bridge encapsulation
- \* Epoxy : UL94V-O rate flame retardant
- \* Terminals : Plated lead solderable per MIL-STD-202, Method 208 guaranteed
- \* Polarity : Polarity symbols marked on case
- \* Mounting position : Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer efficiency
- \* Weight : 15.95 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

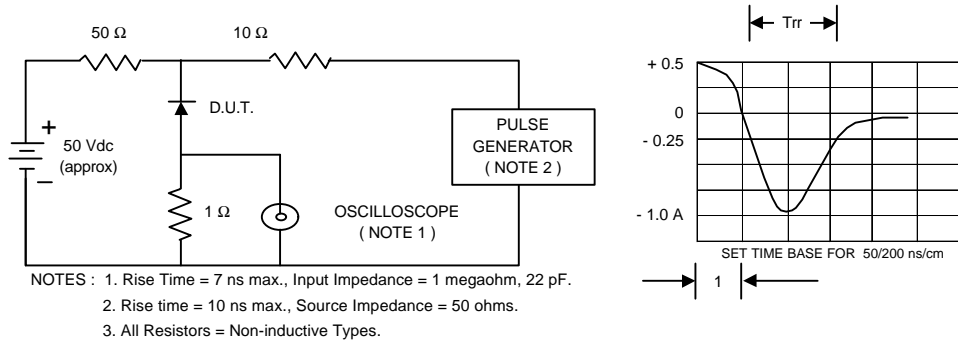
| RATING                                                                                     | SYMBOL             | FBR 5000W     | FBR 5001W | FBR 5002W | FBR 5004W | FBR 5006W | FBR 5008W | FBR 5010W | UNIT             |
|--------------------------------------------------------------------------------------------|--------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| Maximum Recurrent Peak Reverse Voltage                                                     | V <sub>RRM</sub>   | 50            | 100       | 200       | 400       | 600       | 800       | 1000      | V                |
| Maximum RMS Voltage                                                                        | V <sub>RMS</sub>   | 35            | 70        | 140       | 280       | 420       | 560       | 700       | V                |
| Maximum DC Blocking Voltage                                                                | V <sub>DC</sub>    | 50            | 100       | 200       | 400       | 600       | 800       | 1000      | V                |
| Maximum Average Forward Current T <sub>c</sub> = 55 °C                                     | I <sub>F(AV)</sub> | 50            |           |           |           |           |           |           | A                |
| Peak Forward Surge Current Single half sine wave Superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>   | 400           |           |           |           |           |           |           | A                |
| Current Squared Time at t < 8.3 ms.                                                        | I <sup>2</sup> t   | 664           |           |           |           |           |           |           | A <sup>2</sup> S |
| Maximum Forward Voltage drop per Diode at I <sub>F</sub> = 25 A                            | V <sub>F</sub>     | 1.3           |           |           |           |           |           |           | V                |
| Maximum DC Reverse Current Ta = 25 °C<br>at Rated DC Blocking Voltage Ta = 100 °C          | I <sub>R</sub>     | 10            |           |           |           |           |           |           | μA               |
|                                                                                            | I <sub>R(H)</sub>  | 1.0           |           |           |           |           |           |           | mA               |
| Maximum Reverse Recovery Time (Note 1)                                                     | T <sub>rr</sub>    | 200           |           |           | 300       |           | 500       |           | ns               |
| Typical Thermal Resistance per diode (Note 2)                                              | R <sub>θJC</sub>   | 1             |           |           |           |           |           |           | °C/W             |
| Operating Junction Temperature Range                                                       | T <sub>J</sub>     | - 50 to + 150 |           |           |           |           |           |           | °C               |
| Storage Temperature Range                                                                  | T <sub>STG</sub>   | - 50 to + 150 |           |           |           |           |           |           | °C               |

## Notes :

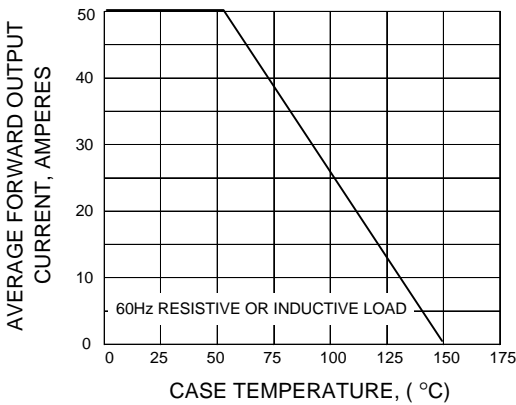
- 1) Measured with I<sub>F</sub> = 0.5 Amp., I<sub>R</sub> = 1 Amp., I<sub>rr</sub> = 0.25 Amp.
- 2) Thermal resistance from Junction to Case with units mounted on a 9"x5"x4.6" (22.9x12.7x11.7 cm) Al-Finned Heatsink.

## RATING AND CHARACTERISTIC CURVES ( FBR5000W - FBR5010W )

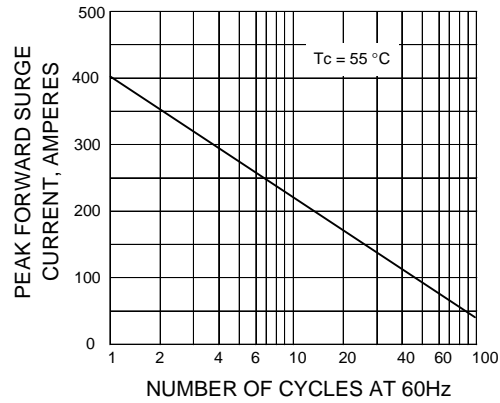
**FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



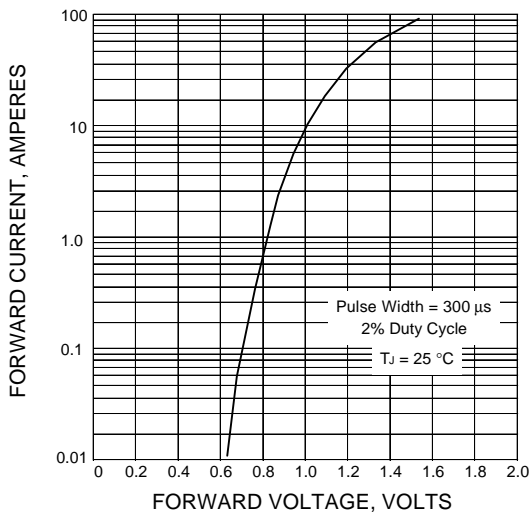
**FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**



**FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.4 - TYPICAL FORWARD CHARACTERISTICS PER DIODE**



**FIG.5 - TYPICAL REVERSE CHARACTERISTICS PER DIODE**

