

## FBR5000 - FBR5010

**PRV : 50 - 1000 Volts**  
**Io : 50 Amperes**

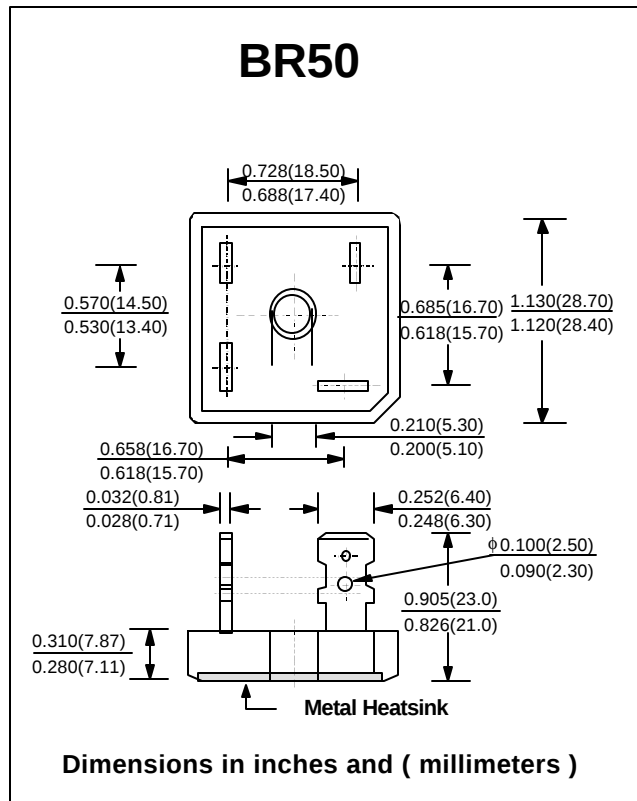
### FEATURES :

- \* 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 .25" (6.35 mm). Faston
- \* 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 : 17.1 grams

## FAST RECOVERY BRIDGE RECTIFIERS



### 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<br>5000   | FBR<br>5001 | FBR<br>5002 | FBR<br>5004 | FBR<br>5006 | FBR<br>5008 | FBR<br>5010 | UNIT             |
|-----------------------------------------------------------------------------------------------|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------|
| Maximum Recurrent Peak Reverse Voltage                                                        | V <sub>RRM</sub> | 50            | 100         | 200         | 400         | 600         | 800         | 1000        | Volts            |
| Maximum RMS Voltage                                                                           | V <sub>RMS</sub> | 35            | 70          | 140         | 280         | 420         | 560         | 700         | Volts            |
| Maximum DC Blocking Voltage                                                                   | V <sub>DC</sub>  | 50            | 100         | 200         | 400         | 600         | 800         | 1000        | Volts            |
| Maximum Average Forward Current Tc = 55 °C                                                    | IF(AV)           | 50            |             |             |             |             |             |             | Amps.            |
| Peak Forward Surge Current Single half sine wave<br>Superimposed on rated load (JEDEC Method) | IFSM             | 400           |             |             |             |             |             |             | Amps.            |
| 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 IF = 25 Amps.                                       | VF               | 1.3           |             |             |             |             |             |             | Volts            |
| Maximum DC Reverse Current Ta = 25 °C                                                         | IR               | 10            |             |             |             |             |             |             | μA               |
| at Rated DC Blocking Voltage Ta = 100 °C                                                      | IR(H)            | 1.0           |             |             |             |             |             |             | mA               |
| Maximum Reverse Recovery Time (Note 1)                                                        | Trr              | 200           |             |             |             | 300         | 500         |             | ns               |
| Typical Thermal Resistance per diode (Note 2)                                                 | RθJC             | 1             |             |             |             |             |             |             | °C/W             |
| Operating Junction Temperature Range                                                          | TJ               | - 50 to + 150 |             |             |             |             |             |             | °C               |
| Storage Temperature Range                                                                     | TSTG             | - 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.

**UPDATE : NOVEMBER 1, 1998**

## RATING AND CHARACTERISTIC CURVES ( FBR5000 - FBR5010 )

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

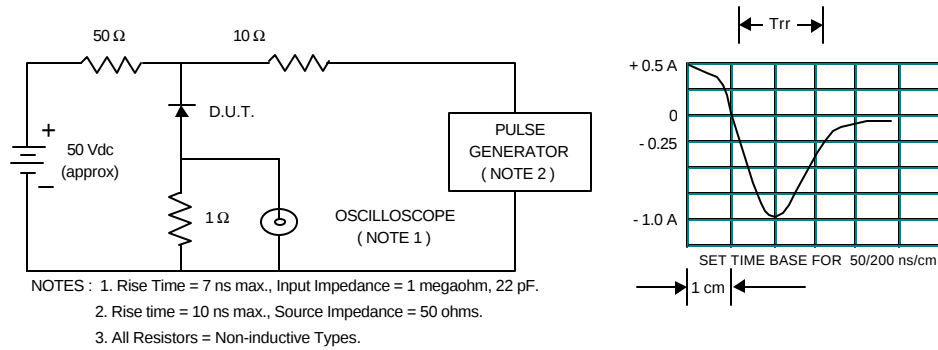


FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

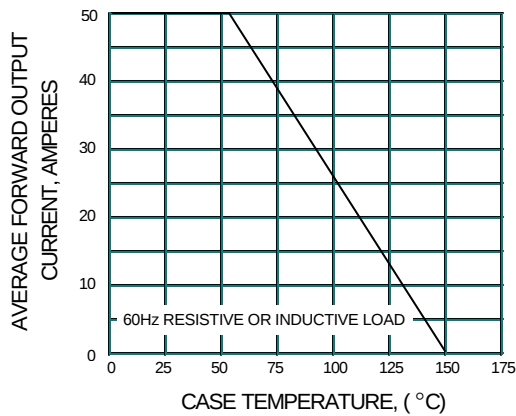


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

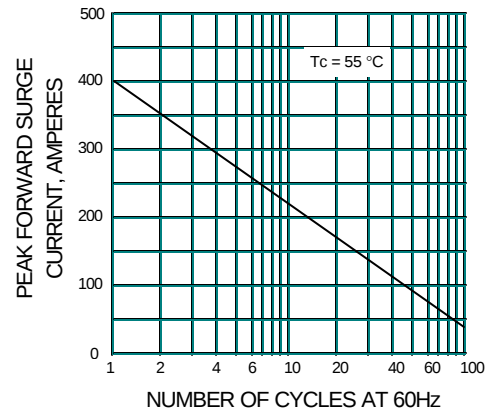


FIG.4 - TYPICAL FORWARD CHARACTERISTICS PER DIODE

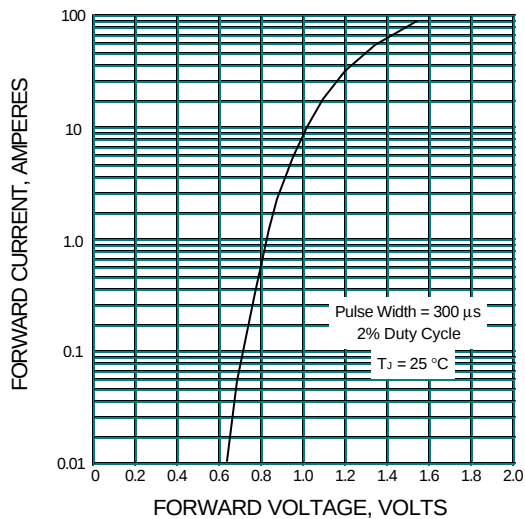


FIG.5 - TYPICAL REVERSE CHARACTERISTICS PER DIODE

