

# RECTIFIER ASSEMBLIES

802, 803 SERIES

Single Phase Bridges, 20-35 Amp,  
High Efficiency ESP Series

## FEATURES

- Current Ratings: to 35A
- Recovery Time: 50ns
- Surge Ratings: to 250A
- PIVs: from 50 to 150V
- Only Fused-in-Glass Diodes Used
- Exceptional High Efficiency
- Aluminum Heat Sink Case, Electrically Insulated

## DESCRIPTION

This series of single phase bridges offer the highest efficiency possible for applications where nothing else will do. The series allow operation at full power at very high frequency.

## ABSOLUTE MAXIMUM RATINGS

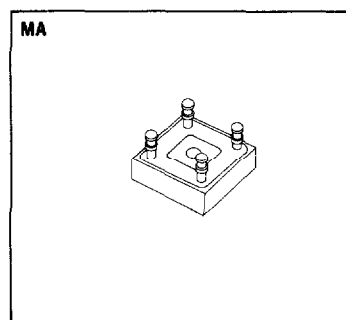
|  |                               |
|--|-------------------------------|
| Peak Inverse Voltage .....                               | 50 to 150V                    |
| Maximum Average D.C. Output Current .....                | See Electrical Specifications |
| Non-Repetitive Sinusoidal Surge (8.3ms) .....            | See Electrical Specifications |
| Operating and Storage Temperature Range, $T_C$ .....     | -65°C to +150°C               |
| Thermal Resistance Junction to Ambient, 802 Series ..... | 20°C/W                        |
| 803 Series .....   | 25°C/W                        |
| Junction to Case, 802 Series .....                       | 2.0°C/W                       |
| 803 Series .....   | 4.0°C/W                       |

## MECHANICAL SPECIFICATIONS

**803 SERIES**

|   | ins.           | mm.         |
|---|----------------|-------------|
| A | .735-.755      | 18.67-19.18 |
| B | .570 MAX.      | 14.48 MAX.  |
| C | .250 MAX.      | 5.74-6.25   |
| D | .735-.755      | 18.67-19.18 |
| E | .139-.149 DIA. | 3.30-3.81   |

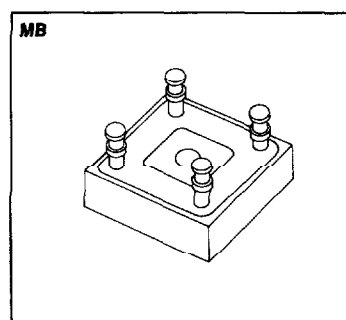
Typical Weight — 0.35 ounces  
10 grams



**802 SERIES**

|   | ins.           | mm.            |
|---|----------------|----------------|
| A | .056-.066      | 1.42-1.68      |
| B | .052-.072      | 1.32-1.83      |
| C | 1.115-1.135    | 28.32-28.83    |
| D | .552-.572      | 14.02-14.53    |
| E | .552-.572      | 14.02-14.53    |
| F | .180-.200 DIA. | 4.57-5.08 DIA. |
| G | .490-.510      | 12.45-12.96    |
| H | .750 MAX.      | 19.05 MAX.     |
| J | .302-.322      | 7.67-8.18      |
| K | 1.115-1.135    | 28.32-28.83    |

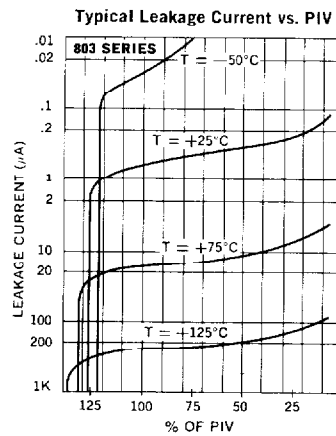
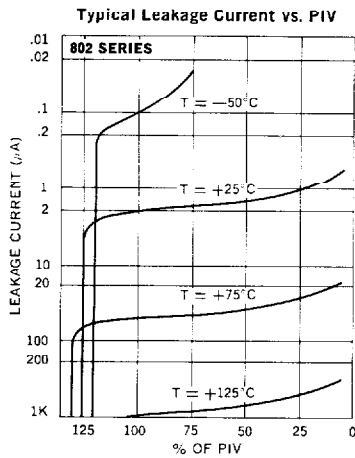
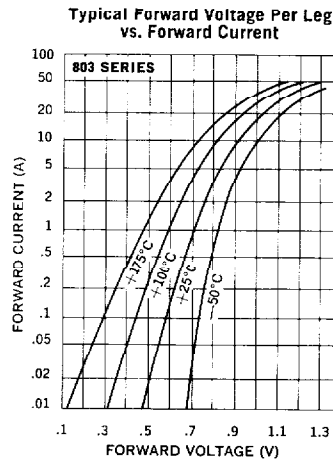
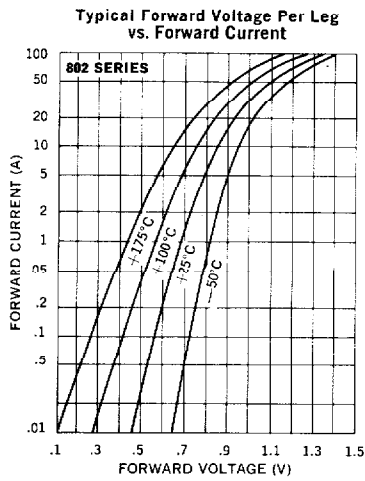
Typical Weight — 0.70 ounces  
20 grams



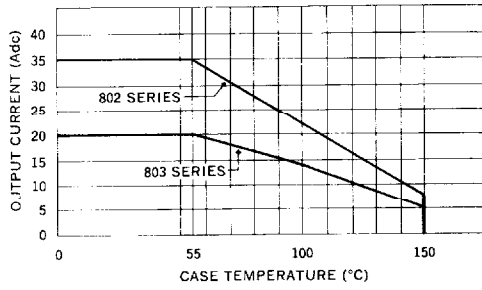
**Microsemi Corp.**  
**Watertown**  
*The diode experts*

| Electrical Specifications (at 25°C unless noted) |                      |                                      |   |                              |                                | Maximum Ratings                     |                                |   |  |
|--|----------------------|--------------------------------------|---|------------------------------|--------------------------------|-------------------------------------|--------------------------------|---|--|
| Type   | PIV Per Leg<br>Volts | Maximum Forward Voltage Drop Per Leg | Maximum Reverse Leakage Current Per Leg @ PIV |                              | Maximum Reverse Recovery Time* | Maximum Average D.C. Output Current |                                | Non-Repetitive Sinusoidal Surge (8.3ms)<br>T <sub>A</sub> = 100°C |  |
|  |                      |                                      | T <sub>A</sub> = 25°C<br>μA                   | T <sub>A</sub> = 100°C<br>μA |                                | T <sub>C</sub> = 55°C<br>Amps       | T <sub>C</sub> = 100°C<br>Amps |   |  |
| ESP Recovery<br>802-1<br>802-2<br>802-3<br>802-4 | 50                   | .95V @ 10A                           | 20  | 1000                         | 50                             | 35                                  | 22.5                           | 250   |  |
|  | 100                  |                                      |   |                              |                                |                                     |                                |   |  |
|  | 125                  |                                      |   |                              |                                |                                     |                                |   |  |
|  | 150                  |                                      |   |                              |                                |                                     |                                |   |  |
| ESP Recovery<br>803-1<br>803-2<br>803-3<br>803-4 | 50                   | .95V @ 6A                            | 10  | 300                          | 50                             | 20                                  | 16                             | 125   |  |
|  | 100                  |                                      |   |                              |                                |                                     |                                |   |  |
|  | 125                  |                                      |   |                              |                                |                                     |                                |   |  |
|  | 150                  |                                      |   |                              |                                |                                     |                                |   |  |

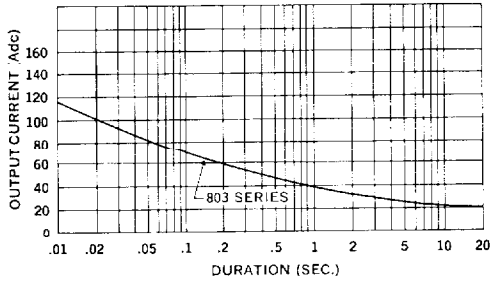
\*Measured in a reverse recovery circuit switching from 1A forward to 1A reverse current recovering to 0.5A.



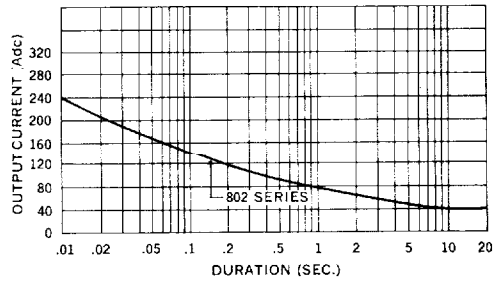
Current Derating Curve



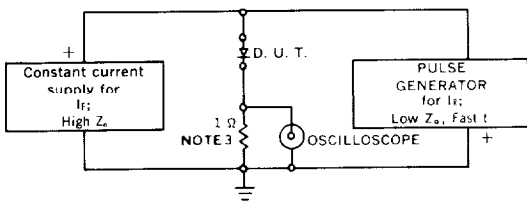
Forward Surge Current vs. Duration



Forward Surge Current vs. Duration



Reverse-Recovery Circuit



- NOTES:**
- Oscilloscope: Rise time  $\leq 3$ ns; input impedance = 50Ω.
  - Pulse Generator: Rise time  $\leq 8$ ns; source impedance 10Ω.
  - Current viewing resistor, non-inductive, coaxial recommended.

Characteristic Waveform

