

# RECTIFIER ASSEMBLIES

## Doublers and Center Tap, 20 Amp, High Efficiency, ESP

3

### FEATURES

- Current Rating: to 20A
- Aluminum Heat Sink Case, Electrically Insulated
- Recovery Time: 50ns
- Surge Ratings of 250A
- PIVs: from 50 to 150V
- Only Fused-in-Glass Diodes Used
- Exceptional High Efficiency

### DESCRIPTION

This series of doublers and center tap rectifiers offer the ultimate in high efficiency application. The rectifiers are particularly suited to switching regulator supplies where very fast recovery time and low forward drop are of prime importance.

### ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage .....	50 to 150V
Maximum Average D.C. Output Current	
@ $T_C = +55^\circ\text{C}$ .....	20A
@ $T_C = +100^\circ\text{C}$ .....	14A
Non-Repetitive Sinusoidal Surge (8.3ms)	
@ $T_A = +100^\circ\text{C}$ .....	250A
Operating and Storage Temperature Range, $T_C$ .....	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Thermal Resistance Junction to Ambient .....	20°C/W
Junction to Case .....	6.0°C/W

### Electrical Specifications (at 25°C unless noted)

Type	PIV Per Leg	Maximum Forward Voltage Drop Per Leg	Maximum Leakage Current ( $\mu\text{A}$ ) Per Leg @ PIV		Maximum Reverse Recovery Time*
			$T_A = 25^\circ\text{C}$	$T_A = 100^\circ\text{C}$	
ESP 804-1	50	.95V @ 10A	10	500	50
Recovery 804-2	100				
804-3	125				
804-4	150				

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

### MECHANICAL SPECIFICATIONS

Dimensions in inches.

**804 SERIES**

Typical Weight — 0.35 ounces  
10 grams

**MF**

### MARKING

Alternating Current Input	A.C.
Cathode — Positive Output	+
Anode — Negative	-

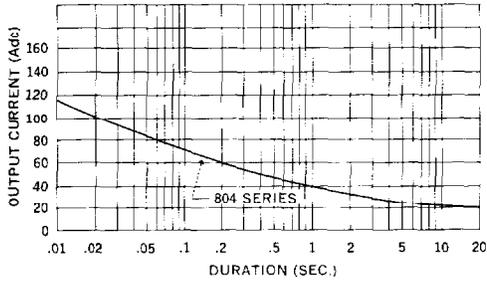
Part number is printed on the body

† Add suffix P, N, or D for terminal configuration P, N, or D.  
For example, for center tap configuration, P, order 804-IP

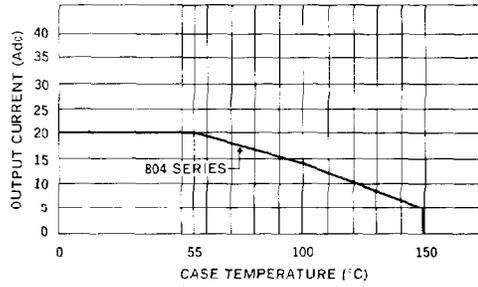
**Microsemi Corp.**  
**Watertown**  
The diode experts



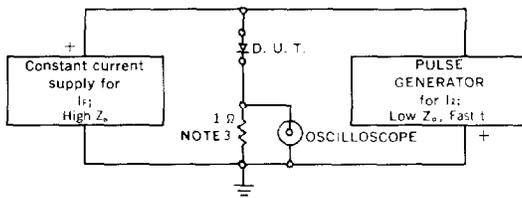
Forward Surge Current vs. Duration



Current Derating Curve

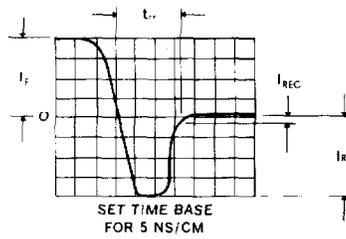


Reverse-Recovery Circuit

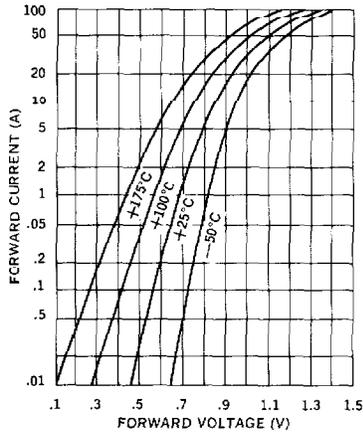


- NOTES:**
- Oscilloscope: Rise time  $\leq 3$ ns; input impedance =  $50\Omega$ .
  - Pulse Generator: Rise time  $\leq 8$ ns; source impedance  $100\Omega$ .
  - Current viewing resistor, non-inductive, coaxial recommended.

Characteristic Waveform



Typical Forward Voltage Per Leg vs. Forward Current



Typical Leakage Current vs. PIV

