

# SURFACE MOUNT UES RECTIFIERS

**POWERMITE™** Package  
High Efficiency, 2.5A, 25nSec

UPR5  
UPR10  
UPR15

## FEATURES

- High Power Surface Mount Package
- Ultra-Fast Recovery Time (25nS)
- Low Forward Voltage
- Integral Heat Sink/Locking Tabs
- Compatible with Automatic Insertion Equipment
- Full Metallic Bottom Eliminates Flux Entrapment

## DESCRIPTION

In Microsemi's new Powermite SMT package, these high efficiency ultrafast rectifiers offer the power handling capabilities previously found only in much larger packages. They are ideal for SMD applications that operate at high frequencies.

In addition to its size advantages, Powermite package features include a full metallic bottom that eliminates the possibility of solder flux entrapment during assembly, and a unique locking tab acts as an integral heat sink. Its innovative design makes this device ideal for use with automatic insertion equipment.

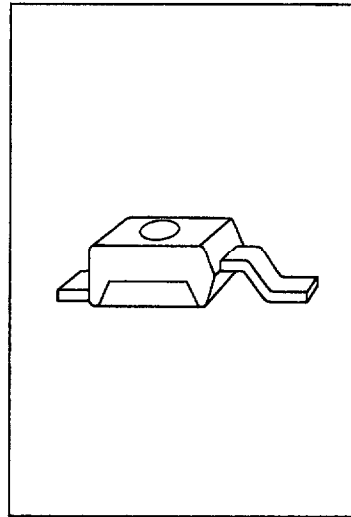
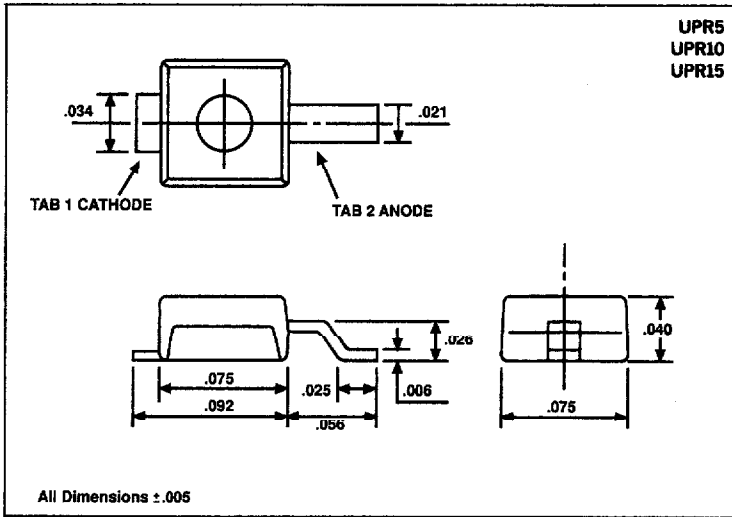
## ABSOLUTE MAXIMUM RATINGS

|   |                 |
|---|-----------------|
| Maximum Reverse Voltage, UPR5                             | 50V             |
| Maximum Reverse Voltage, UPR10                            | 100V            |
| Maximum Reverse Voltage, UPR15                            | 150V            |
| Maximum Average Output Current, $T_{TAB 1} = 75^{\circ}C$ | 2.5A*           |
| Thermal Resistance, Junction to Tab                       | 30°C/W          |
| Thermal Resistance, Junction to Bottom                    | 10°C/W          |
| Non-Repetitive Sinusoidal Surge Current (8.3mS)           | 25A             |
| Operating and Storage Temperature                         | -55°C to +150°C |

\* WHEN MOUNTED ON A PC BOARD WITH 2 OZ. COPPER.

10

## MECHANICAL SPECIFICATIONS



**Microsemi Corp.**  
Watertown

ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless noted)

| TEST                            | CONDITIONS   | LIMIT | UNITS            |
|---------------------------------|--|-------|------------------|
| Forward Voltage, $V_F$          | $I_F = 2\text{A}$  | 0.975 | Volts            |
| Forward Voltage, $V_F$          | $I_F = 2\text{A}, T_J = 100^\circ\text{C}$                         | 0.895 | Volts            |
| Reverse Current, $I_R$          | $V_R = \text{Max Rating}$  | 2.0   | $\mu\text{Amps}$ |
| Reverse Current, $I_R$          | $V_R = \text{Max Rating}, T_J = 100^\circ\text{C}$                 | 50    | $\mu\text{Amps}$ |
| Reverse Recovery Time, $T_{RR}$ | $I_F = 0.5\text{A}, I_R = 1.0\text{A}$<br>$I_{REC} = 0.25\text{A}$ | 25    | nSec             |

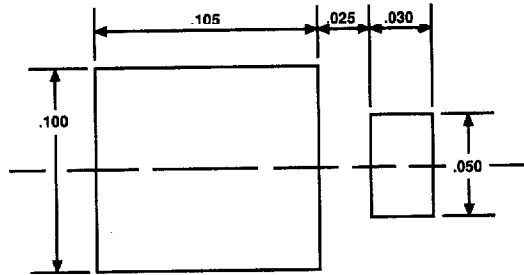


Figure 1. Suggested Mounting Pad Dimensions