

# RECTIFIERS

## High Efficiency, 45A Centertap, 50 - 150V

UES4505C  
UES4510C  
UES4515C

### FEATURES

- Low Forward Voltage
- Fast Recovery Times
- Economical Convenient TO-3P Package
- Low Thermal Resistance
- Mechanically Rugged
- PIV up to 150V

### DESCRIPTION

The UES4505C Series, in the economical, convenient TO-3P package, is specifically designed for operation in power switching circuits to frequencies in excess of 100kHz. The very low forward voltage and very fast recovery time make them particularly suited for switching type power supplies.

### ABSOLUTE MAXIMUM RATINGS, either leg unless noted

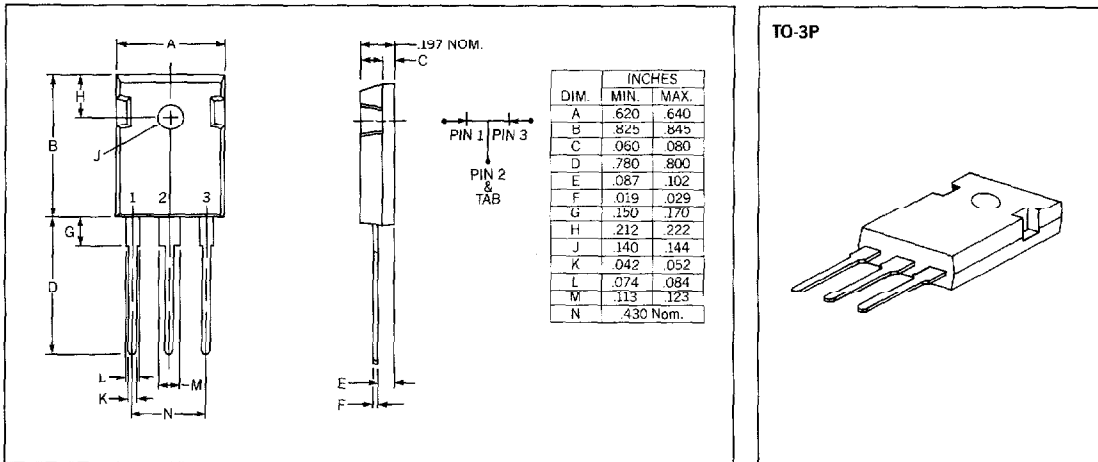
	UES4505C	UES4510C	UES4515C
Peak Inverse Voltage	$V_R, V_{RWM}, V_{RRM}$ 50V	100V	150V
Maximum Average D.C. Output Current @ $T_C = 125^\circ\text{C}$ , full wave operation (see curves)	$I_{F(AV)}$ 45A	45A	45A
Non-Repetitive Sinusoidal Surge Current, 8.3ms	$I_{FSM}$ 450A	450A	450A
Thermal Resistance Junction to Case	$R_{\theta J-C}$ 0.8°C/W	0.8°C/W	0.8°C/W
Thermal Resistance Junction to Case both legs together, full wave	$R_{\theta J-C}$ 0.6°C/W	0.6°C/W	0.6°C/W
Thermal Resistance Junction to Ambient either leg, or both legs together	$R_{\theta J-A}$ 40°C/W	40°C/W	40°C/W
Operating and Storage Temperature Range	$T_{OP}, T_{STG}$ -55°C to +150°C	-55°C to +150°C	-55°C to +150°C

### ELECTRICAL SPECIFICATIONS

Type	PIV	Maximum Forward Voltage ( $V_F$ )		Maximum Reverse Current ( $I_R$ ) @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A $t_r = 14\text{ns}$
		$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$		
UES4505C UES4510C UES4515C	50V 100V 150V	1.1 @ 45A 1.0 @ 22.5A	1.0 @ 45A .88 @ 22.5A	20 $\mu\text{A}$	10mA	50ns	2.0V

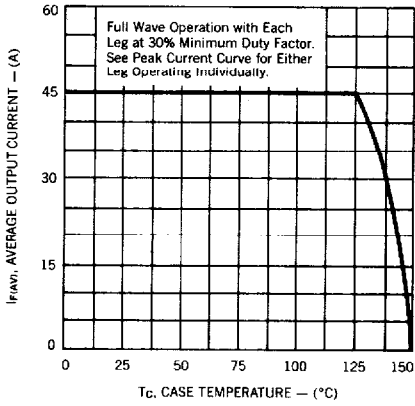
\* Measured in circuit  $I_F = 0.50\text{A}$ ,  $I_{RM} = 1.0\text{A}$ ,  $I_{REC} = 0.25\text{A}$ .

### MECHANICAL SPECIFICATIONS

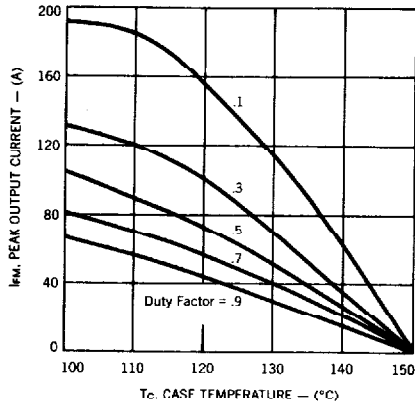


**Microsemi Corp.**  
**Watertown**  
The diode experts

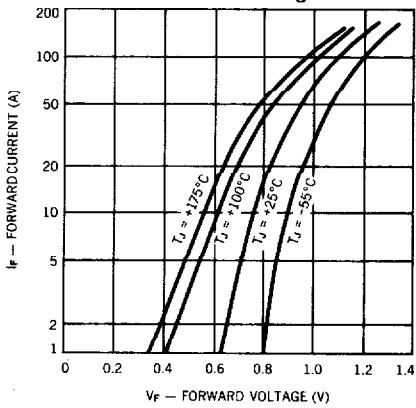
**Average Output Current vs Case Temperature**



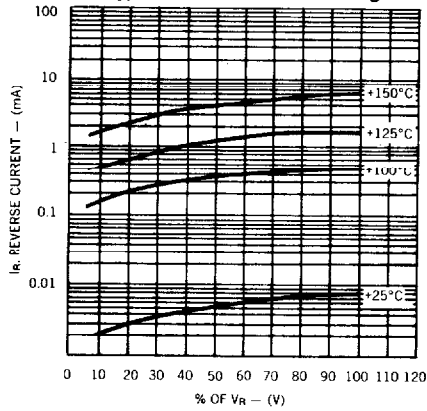
**Peak Output Current vs Case Temperature (Either Leg)**



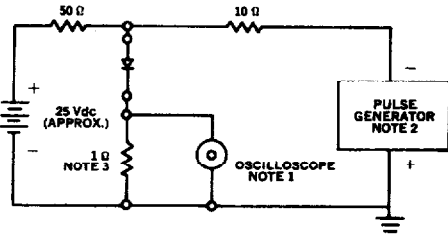
**Forward Current vs Forward Voltage**



**Typical Reverse Current vs Voltage**



**Reverse-Recovery Circuit**



- NOTES:**
1. Oscilloscope: Rise time  $\leq 3$ ns; input impedance = 500.
  2. Pulse Generator: Rise time  $\leq 8$ ns; source impedance 100.
  3. Current viewing resistor, non-inductive, coaxial recommended.

**Thermal Impedance vs Pulse Width (Each Leg)**

