

# RECTIFIERS

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

UES4505S  
UES4510S  
UES4515S

### FEATURES

- Economical Convenient TO-3P Package
- Insulated Mounting Hole
- Can Be Clip Mounted
- Mechanically Rugged
- Low Thermal Resistance
- Ultra-Fast Recovery Time

### DESCRIPTION

The UES4505S 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

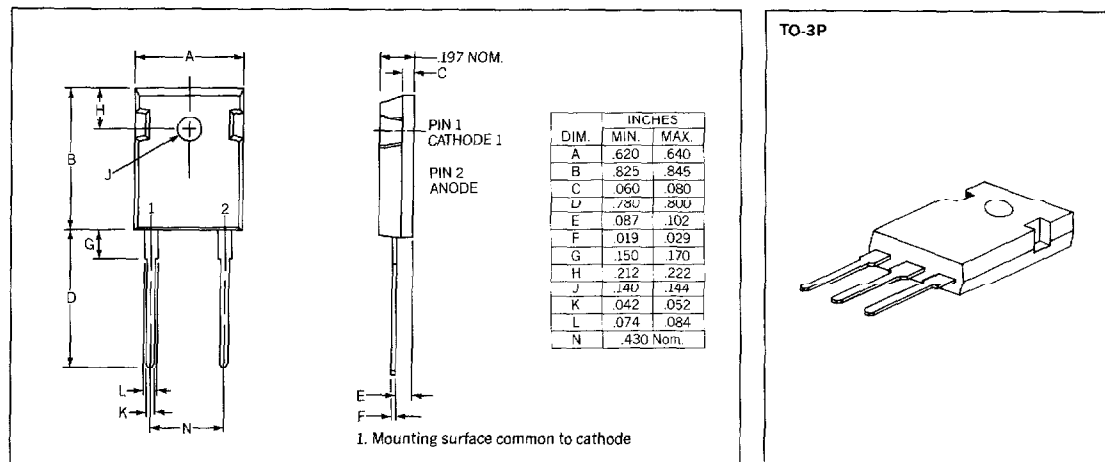
	UES4505S	UES4510S	UES4515S
Peak Inverse Voltage $V_R, V_{RWM}, V_{RRM}$	50V	100V	150V
Maximum Average D.C. Output Current @ $T_C = 110^\circ\text{C}$ $(I_{FAV})$		45A	
Non-Repetitive Sinusoidal Surge Current, 8.3ms $I_{FSM}$		450A	
Thermal Resistance Junction to Case $R_{\theta J-C}$		0.8°C/W	
Thermal Resistance Junction to Ambient $R_{\theta J-A}$		40°C/W	
Operating and Storage Temperature Range $T_{OP}, T_{STG}$		-55°C to +150°C	

### ELECTRICAL SPECIFICATIONS

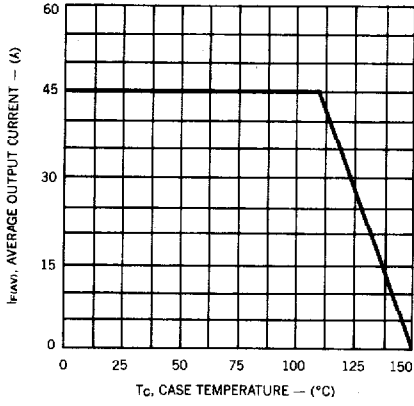
Type	PIV	Maximum Forward Voltage (VF)		Maximum Reverse Current (IR) @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A $T_n = 14\text{ns}$
		$I_J = 25^\circ\text{C}$	$I_J = 125^\circ\text{C}$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$		
UES4505S	50V	1.1 @ 45A	1.0 @ 45A	20µA	10mA	50ns	2.0V
UES4510S	100V	1.3 @ 90A	1.20 @ 90A				
UES4515S	150V						

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

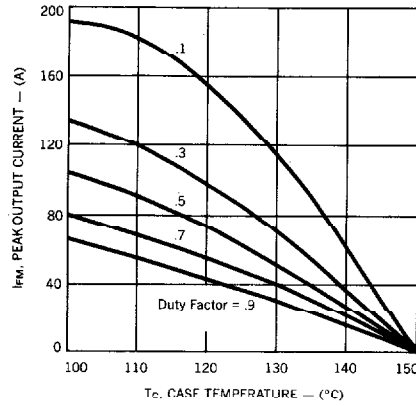
### MECHANICAL SPECIFICATIONS



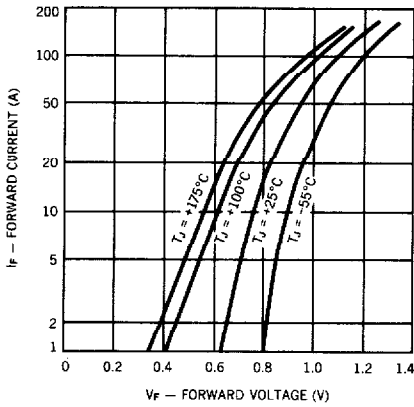
**Average Output Current vs Case Temperature**



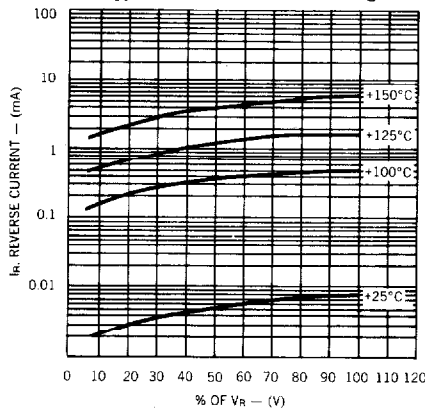
**Peak Output Current vs Case Temperature**



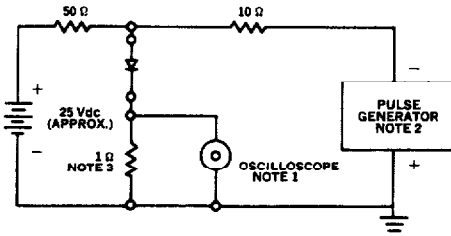
**Forward Current vs Forward Voltage**



**Typical Reverse Current vs Voltage**



**Reverse-Recovery Circuit**



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

**Thermal Impedance vs Pulse Width**

