

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						

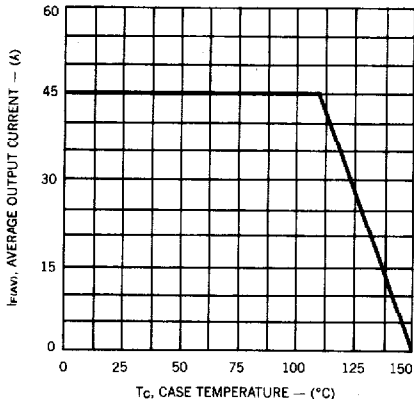
* Measured in circuit $I_F = 0.50\text{A}$, $I_{RM} = 1.0\text{A}$, $I_{REC} = 0.25\text{A}$.

MECHANICAL SPECIFICATIONS

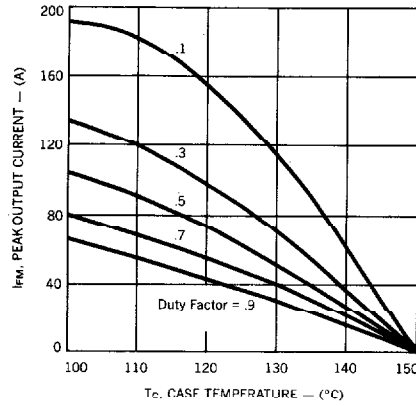
DIM.	INCHES	
	MIN.	MAX.
A	.620	.640
B	.825	.845
C	.060	.080
D	.780	.800
E	.087	.102
F	.019	.029
G	.150	.170
H	.212	.222
J	.140	.144
K	.042	.052
L	.074	.084
N	.430 Nom.	

TO-3P

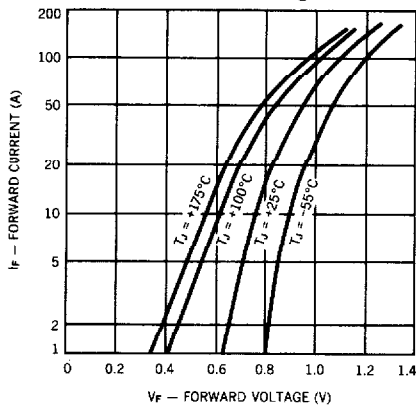
Average Output Current vs Case Temperature



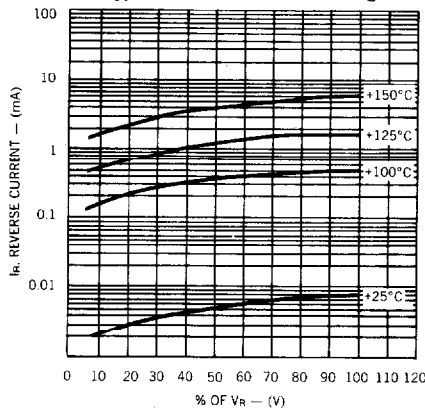
Peak Output Current vs Case Temperature



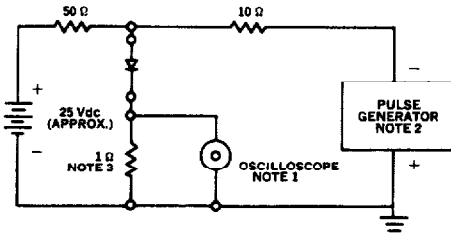
Forward Current vs Forward Voltage



Typical Reverse Current vs Voltage



Reverse-Recovery Circuit



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

Thermal Impedance vs Pulse Width

