

RECTIFIERS

High Efficiency, 30A, 50-150V

UES3005S
UES3010S
UES3015S

FEATURES

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

DESCRIPTION

The UES3005S 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

	UES3005S	UES3010S	UES3015S	
Peak Inverse Voltage	V_R, V_{RWM}, V_{RRM}	50V	100V	150V
Maximum Average D.C. Output Current @ $T_C = 115^\circ\text{C}$	$I_{F(AV)}$		30A	
Non-Repetitive Sinusoidal Surge Current, 8.3ms	I_{FSM}		400A	
Thermal Resistance Junction to Case	$R_{\theta J-C}$		1 $^\circ\text{C}/\text{W}$	
Thermal Resistance Junction to Ambient	$R_{\theta J-A}$		40 $^\circ\text{C}/\text{W}$	
Operating and Storage Temperature Range	T_{OP}, T_{STG}		-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$	

ELECTRICAL SPECIFICATIONS

Type	PIV	Maximum Forward Voltage (V_F)		Maximum Reverse Current (I_R) @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A $T_R = 14\text{ns}$
		$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$		
UES3005S	50V	1.1 @ 30A	1.0 @ 30A	15 μA	5mA	35ns	2.0V
UES3010S	100V						
UES3015S	150V	1.3 @ 60A	1.25 @ 60A				

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

MECHANICAL SPECIFICATIONS

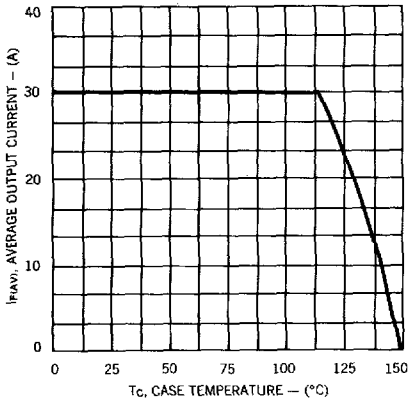
1. Mounting surface common to cathode

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.	

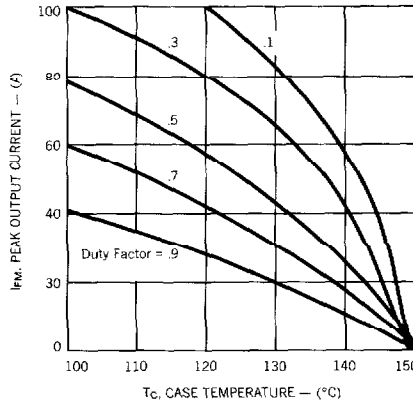
TO-3P

Microsemi Corp.
Watertown
The diode experts

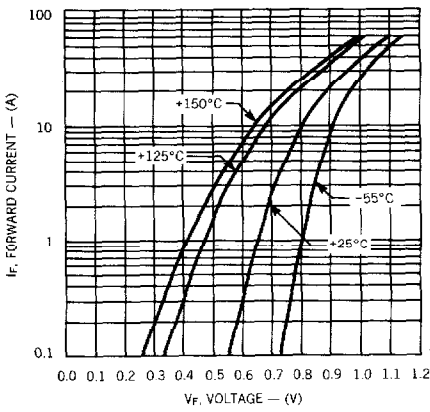
Average Output Current vs Case Temperature



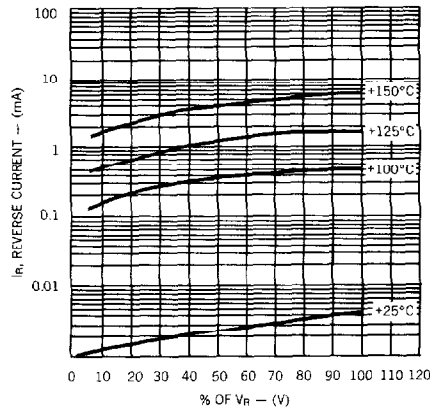
Peak Output Current vs Case Temperature



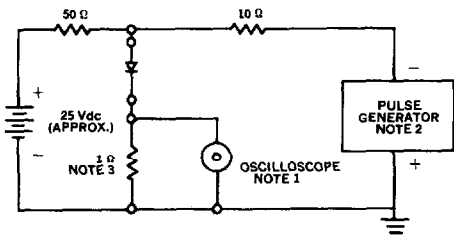
Typical Forward Current vs Forward Voltage



Typical Reverse Current vs Voltage



Reverse-Recovery Circuit



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

Thermal Impedance vs Pulse Width

