

RECTIFIERS

High Efficiency, 16A Center-Tap

UES2401-UES2404

2

FEATURES

- Very Low Forward Voltage
- Very Fast Recovery Times
- Economical, Convenient TO-220AB Package
- Low Thermal Resistance
- Mechanically Rugged
- PIV up to 200V

DESCRIPTION

The UES2401 Series in the economical, convenient TO-220AB package, is specifically designed for operation in power switching circuits to frequencies in excess of 100kHz. The series combines two high efficiency devices into one package, simplifying installation, reducing heatsink requirements and the need to purchase matched components.

ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage, UES2401	50V
Peak Inverse Voltage, UES2402	100V
Peak Inverse Voltage, UES2403	150V
Peak Inverse Voltage, UES2404	200V
Maximum Average D.C. Output Current	
@ $T_C = 125^\circ\text{C}$ (Note 1)	16A
@ $T_A = 25^\circ\text{C}$	3A
@ $T_A = 25^\circ\text{C}$ (Note 2)	10A
Non-Repetitive Sinusoidal Surge Current, 8.3ms	80A
Thermal Resistance, Junction to Case, θ_{j-c}	1.75°C/W
Thermal Resistance, Junction to Ambient, θ_{j-a}	60°C/W
Operating and Storage Temperature Range	-55°C to +150°C

Note 1. Above 8A use the tab for electrical connection.

Note 2. Using Wakefield Type 295 heatsink with convection cooling. For more definitive data refer to the Output Current vs. Temperature Curves on this datasheet.

MECHANICAL SPECIFICATIONS

UES2401-2404

	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.560	0.625	14.23	15.87
B	0.380	0.420	9.66	10.66
C	0.140	0.190	3.56	4.82
D	0.020	0.045	0.51	1.14
E	0.120	0.147	2.54	3.73
G	0.090	0.110	2.29	2.79
H	—	0.250	—	6.35
J	0.015	0.025	0.38	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.070	1.14	1.77
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.115	2.04	2.92
S	0.045	0.055	1.14	1.39
T	0.230	0.270	5.85	6.85

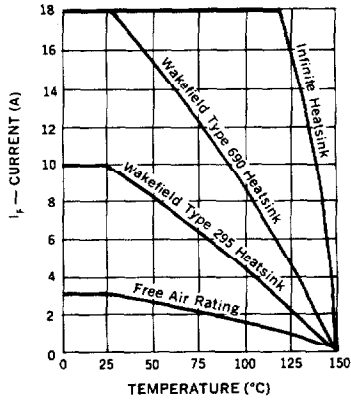
TO-220AB

ELECTRICAL SPECIFICATIONS

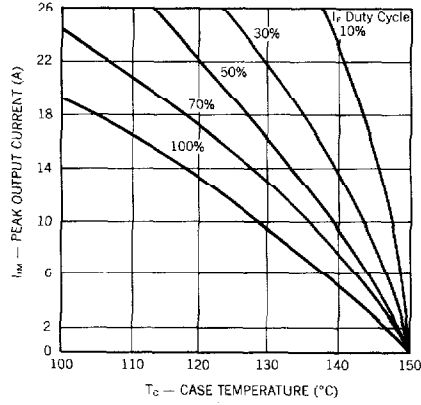
Type	PIV	Maximum Forward Voltage @		Maximum Reverse Current @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A $t_r = 8ns$
		$T_J = 25^\circ C$	$T_J = 100^\circ C$	$T_J = 25^\circ C$	$T_J = 100^\circ C$		
UES2401	50V	0.9V @ 4A	0.8V @ 4A	5 μ A	150 μ A	35ns	1.4V
UES2402	100V	0.975 @ 8A	0.895 @ 8A		150 μ A		
UES2403	150V	tp = 300 μ s			150 μ A		
UES2404	200V				500 μ A		

*Measured in circuit $I_F = 0.5A$, $I_R = 1.0A$, $I_{REC} = 0.25A$

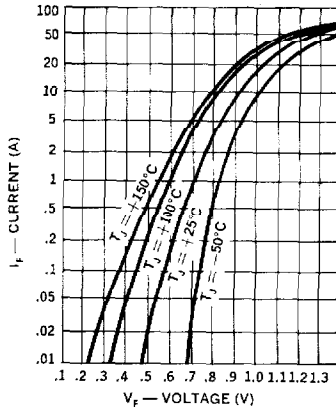
Output Current vs Temperature



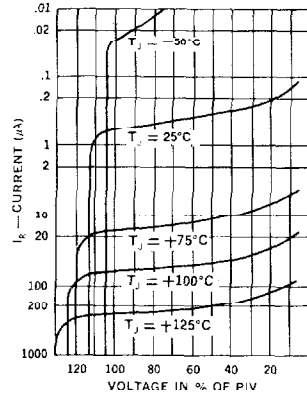
Peak Output Current vs Case Temperature

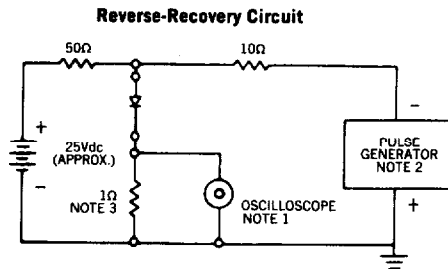
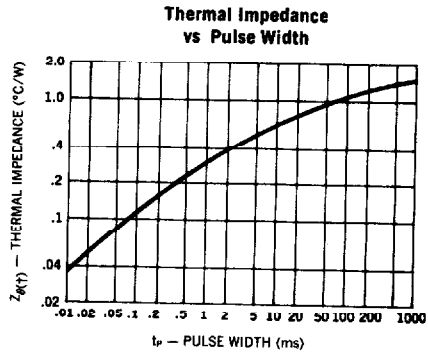
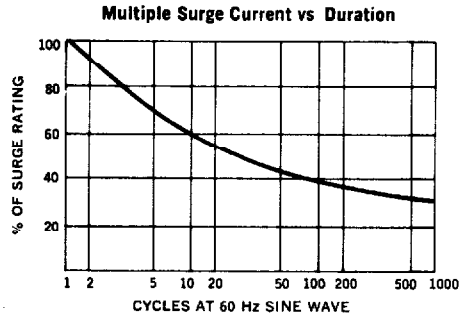
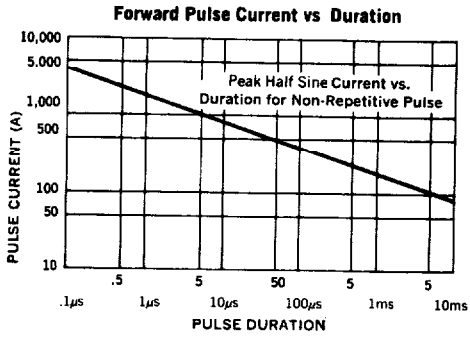


Typical Forward Current vs Forward Voltage



Typical Reverse Current vs Voltage





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