

RECTIFIERS

High Efficiency, 16A

UES1501
UES1502
UES1503
UES1504

FEATURES

- Very Low Forward Voltage
- Very Fast Recovery Times
- Economical, Convenient TO-220 Package
- Low Thermal Resistance
- Mechanically Rugged

DESCRIPTION

The UES1500 Series, in the economical, convenient TO-220 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

Peak Inverse Voltage, UES1501	50V
Peak Inverse Voltage, UES1502	100V
Peak Inverse Voltage, UES1503	150V
Peak Inverse Voltage, UES1504	200V
Maximum Average D.C. Output Current	

@ $T_C = 100^\circ\text{C}$ 16A

@ $T_A = 25^\circ\text{C}$ 3.3A

@ $T_A = 25^\circ\text{C}$ (Note 1) 10.0A

Non-Repetitive Sinusoidal Surge Current, 8.3ms 300A

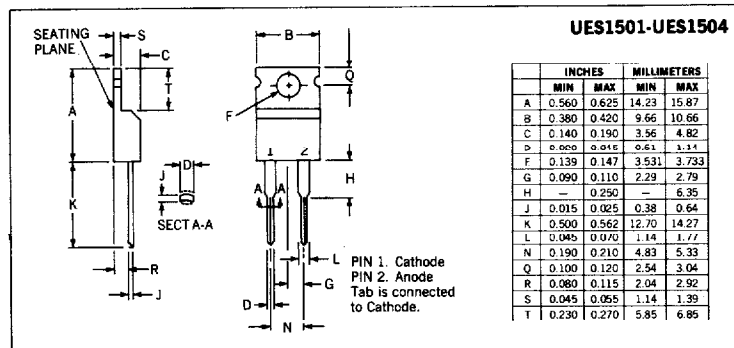
Thermal Resistance, Junction to Case, θ_{J-C} 1.5°C/W

Thermal Resistance, Junction to Ambient, θ_{J-A} 60°C/W

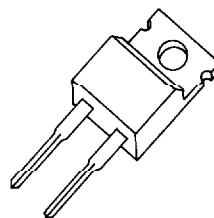
Operating and Storage Temperature 55°C to $+150^\circ\text{C}$

Note: 1. Using Wakefield Type 295 heatsink with convection cooling. For more definitive data refer to the Output Current vs Temperature Curve on this data sheet.

MECHANICAL SPECIFICATIONS



TO-220AC



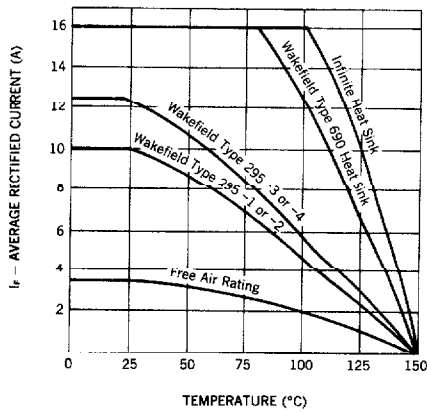
Microsemi Corp.
Watertown
The diode experts

ELECTRICAL SPECIFICATIONS

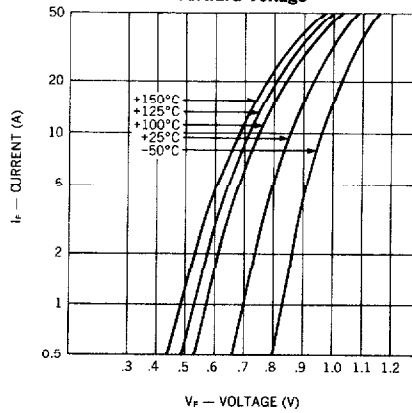
Type	PIV	Maximum Forward Voltage		Maximum Reverse Current @ PIV		Maximum Reverse Recovery Time*	Typical Forward Recovery Voltage @ 1A $t_r = 8\text{ns}$
		$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$		
UES1501	50V	.975V @ 16A	.895V @ 16A	$10\mu\text{A}$	$800\mu\text{A}$	35ns	2.0V
UES1502	100V						
UES1503	150V	1.10V @ 32A	1.0V @ 32A				
UES1504	200V						

* Measured in circuit $I_F = 1/2 A$, $I_R = 1.0 A$, $I_{REC} = 1/4 A$

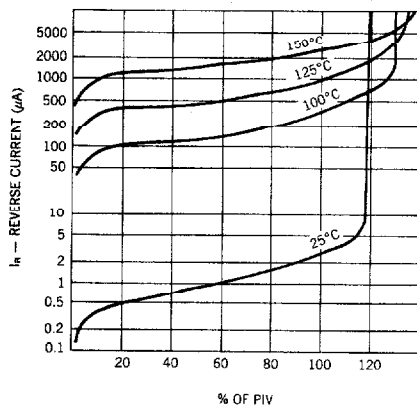
Output Current vs Temperature



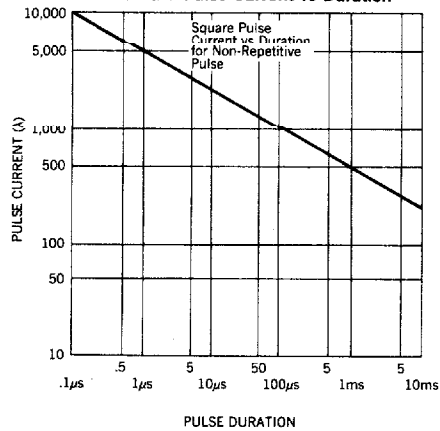
Typical Forward Current vs Forward Voltage

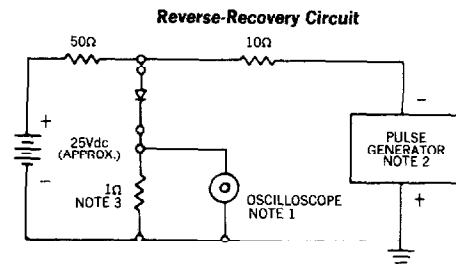
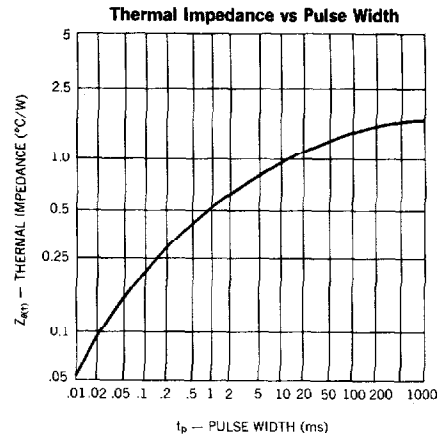
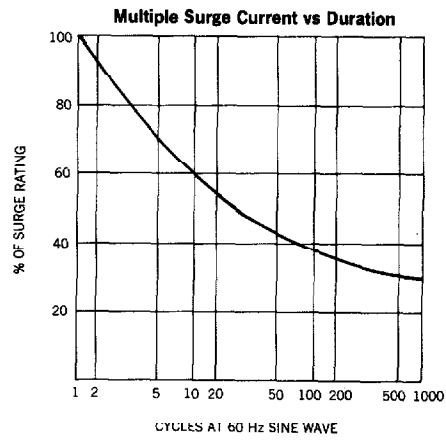


Typical Reverse Current vs Voltage



Forward Pulse Current vs Duration



**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.