



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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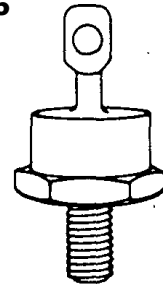


DESCRIPTION

The UES804 series of ultrafast high-efficiency rectifiers is specifically designed for operation in power switching circuits operating at frequencies of 20 kHz or higher. These devices have demonstrated capability in passing power-stress testing to 25 thousand cycles with full-rated forward current turned on and off without a heat sink. This forces case temperature increases of 75 °C at which time the current is removed to simulate worst case applications. The switching times increase relatively little with temperature or at different currents.

APPEARANCE

DO-5



IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

FEATURES

- Very Low Forward Voltage
- Very Fast Recovery Times
- High Reliability Screening Options with HR2 Suffix (ie. UES804HR2)
- Low Thermal Resistance
- Mechanically rugged
- Standard Polarity is Cathode to Case. For Reverse Polarity, Add Suffix R (ie. UES804R)

APPLICATIONS / BENEFITS

- Power Switching Circuits 20 kHz and above with minimal parasitic switching losses
- Catch Diodes for Switching Regulators
- Output Rectifiers for High Frequency Square-Wave Inverters
- Extremely Robust in Power Cycling
- High Surge Capability
- Hermetically Sealed

ABSOLUTE MAXIMUM RATINGS

- Peak Inverse Voltage, UES804, UES804HR2.....200 V
- Peak Inverse Voltage, UES805, UES805HR2.....300 V
- Peak Inverse Voltage, UES806, UES806HR2.....400 V
- Average DC Output Current, I_O @ $T_C = 100^\circ\text{C}$50 A
- Surge Current, 8.3 ms600 A
- Thermal Resistance, Junction to Case.....0.8 °C/W
- Operating and Storage Temp. Range.....-55°C to +150°C

MECHANICAL AND PACKAGING

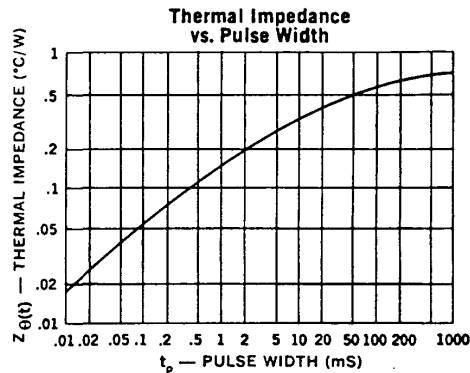
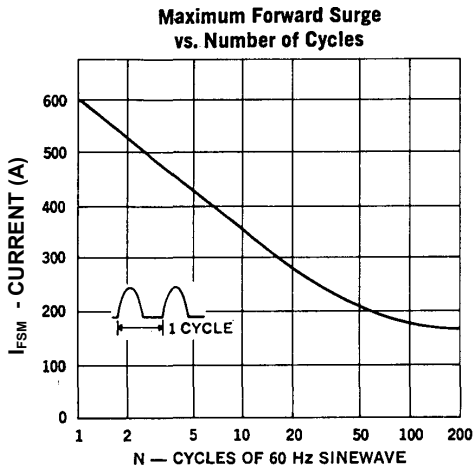
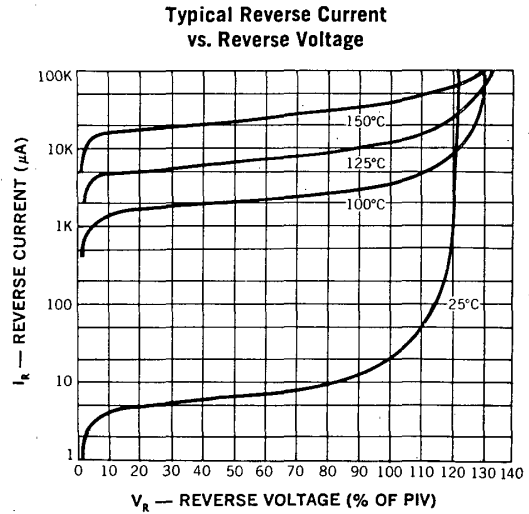
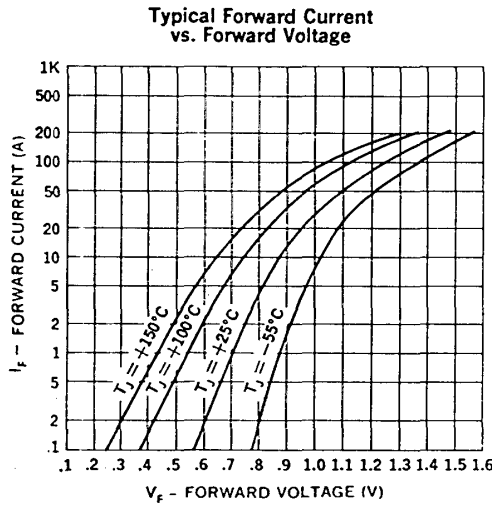
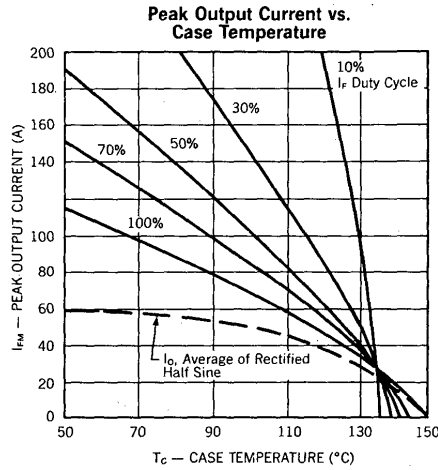
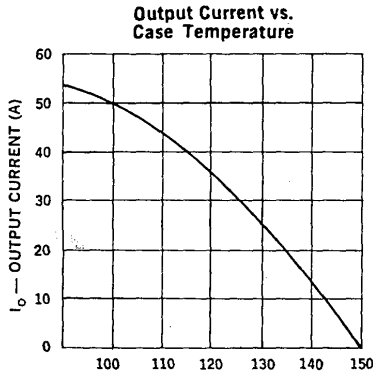
- Industry Standard DO-5 (DO-203AB) Package with 11/16 inch Hex and 1/4-28 Threaded Stud
- Hermetically Sealed Metal and Glass Case Body
- Metal Surface Finish: Tin-Lead Plated
- Weight: 15.5 grams (approximate)
- Maximum Stud Torque: 30 inch pounds
- Marking: Part Number and Logo

ELECTRICAL CHARACTERISTICS

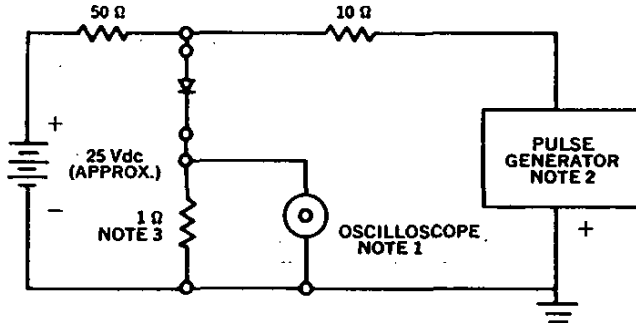
Microsemi Part Number		Working Peak Reverse Voltage V_{RWM}	Maximum Forward Voltage V_F @ 50 A $t_p = 300 \mu\text{s}$		Maximum Reverse Current I_R @ V_{RWM}		Maximum Reverse Recovery Time* t_{rr}
			$T_C = 25^\circ\text{C}$	$T_C = 125^\circ\text{C}$	$T_C = 25^\circ\text{C}$	$T_C = 125^\circ\text{C}$	
UES804	UES804HR2	200 V	1.25 V	1.15 V	70 μA	30 mA	50 ns
UES805	UES805HR2	300 V					
UES806	UES806HR2	400 V					

* Measured in circuit $I_F = 0.5 \text{ A}$, $I_R = 1 \text{ A}$, $I_{REC} = 0.25 \text{ A}$

GRAPHS and CIRCUIT



Reverse-Recovery Circuit



NOTES:

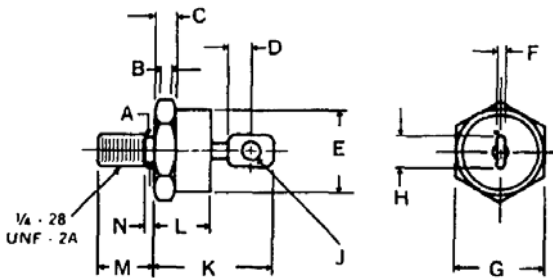
1. Oscilloscope: Rise time $\leq 3\text{ns}$; input impedance = 50Ω .
2. Pulse Generator: Rise time $\leq 8\text{ns}$; source impedance 10Ω .
3. Current viewing resistor, non-inductive, coaxial recommended.

OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature	1032	24 Hours @ $T_A = 150^\circ\text{C}$
2. Temperature Cycle	1051	F, 20 Cycles, -55 to $+150^\circ\text{C}$. No dwell required @ 25°C , $T \geq 10$ min. @ extremes
3. Hermetic Seal a. Fine Leak b. Gross Leak	1071	H, Helium C, Liquid
4. Thermal Impedance	3101	
5. Interim Electrical Parameters	GO/NO GO	As applicable
6. High Temperature Reverse Bias (HTRB)	As Applicable	$t = 48$ hours, $T_c = 125^\circ\text{C}$ with applicable bias conditions
7. Final Electrical Parameters	GO/NO GO	As applicable

MECHANICAL SPECIFICATIONS



	INCHES	MILLIMETERS
A	.225 +/- .005	5.72 +/- 0.13
B	.060 MIN.	1.52 MIN.
C	.156 +/- .020	3.96 +/- 0.51
D	.156 MIN. FLAT	3.96 MIN. FLAT
E	.667 DIA. MAX	16.94 DIA. MAX
F	.090 MAX	2.29 MAX.
G	.677 +/- .010	17.20 +/- 0.25
H	.375 MAX.	9.53 MAX.
J	.140 MIN. DIA.	3.56 MIN. DIA.
K	1.000 MAX.	25.40 MAX.
L	.450 MAX.	11.43 MAX.
M	.438 +/- .015	11.13 +/- 0.38
N	.078 MAX.	1.98 MAX.

Notes:

1. Maximum stud torque: 30 inch pounds.
2. Maximum tension (90°) anode terminal 15 pounds for 30 seconds