

# RECTIFIERS

Standard Recovery, 7.5 Amp to 12 Amp

UT5105-UT5160  
 UT6105-UT6160  
 UT8105-UT8160  
 UT5105HR2-UT5160HR2  
 UT6105HR2-UT6160HR2  
 UT8105HR2-UT8160HR2

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### FEATURES

- Rating: 12A
- Controlled Avalanche
- Miniature Package
- Surge Rating: 200A

### DESCRIPTION

These series of high current rectifiers offers opportunity for size and weight reduction in high power supplies.

### ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage	12 Amp Series	9 Amp Series	7.5 Amp Series
50V	UT8105/8105HR2	UT6105/6105HR2	UT5105/5105HR2
100V	UT8110/8110HR2	UT6110/6110HR2	UT5110/5110HR2
200V	UT8120/8120HR2	UT6120/6120HR2	UT5120/5120HR2
400V	UT8140/8140HR2	UT6140/6140HR2	UT5140/5140HR2
600V	UT8160/8160HR2	UT6160/6160HR2	UT5160/5160HR2

	12 AMP SERIES	9 AMP SERIES	7.5 AMP SERIES
Maximum Average D.C. Output Current			
@ $T_c = 100^\circ\text{C}$	12.0A	9.0A	7.5A
Non-Repetitive Sinusoidal			
Surge Current (8.3ms)	200A	175A	150A
Operating and Storage Temperature Range	-65°C to +175°C		
Thermal Resistance, Junction to Case	7.5°C/Watt		
Current Derating	See current vs. case temperature curve		

### MECHANICAL SPECIFICATIONS

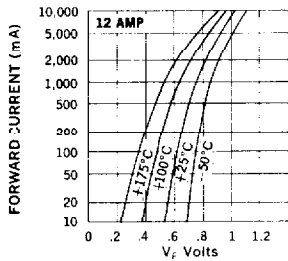
UT6105-UT5160 UT5105HR2-UT5160HR2	UT6105-UT6160 UT6105HR2-UT6160HR2	UT8105-UT8160 UT8105HR2-UT8160HR2	BODY C — Stud Mount
<p><b>Part Identification:</b> Numerals and polarity letter indicate UTR type number, e.g., UTR 4405.</p> <p><b>Polarity:</b> Cathode to Stud is standard. Reverse polarity denoted by "R" suffix.</p> <p><b>Finish:</b> Metal parts gold plated per MIL-G-45204, Type II.</p> <p><b>Weight:</b> 1.5 grams, typical.</p> <p>Also available with insulated stud. Reference Design Note 17.</p> <p><b>Installation</b>                      Maximum unlubricated stud torque: 28 inch-ounces.                      Mounting hardware supplied.                      Do not use a screwdriver in the turret slot for installation purposes, or damage may result.</p>			

**Microsemi Corp.**  
**Watertown**  
*The diode experts*

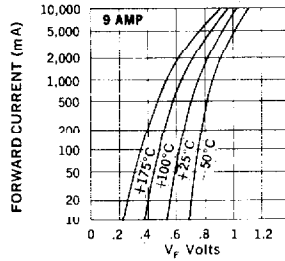
**ELECTRICAL SPECIFICATIONS (at 25°C unless noted)**

Type	Peak Inverse Voltage	Maximum Forward Voltage	Max. Reverse Current at PIV	
			25°C	100°C
UT8105/8105HR2 UT8110/8110HR2 UT8120/8120HR2 UT8140/8140HR2 UT8160/8160HR2	50V 100V 200V 400V 600V	1V @ 8A	10 $\mu$ A	300 $\mu$ A
UT6105/6105HR2 UT6110/6110HR2 UT6120/6120HR2 UT6140/6140HR2 UT6160/6160HR2	50V 100V 200V 400V 600V	1V @ 6A	10 $\mu$ A	300 $\mu$ A
UT5105/5105HR2 UT5110/5110HR2 UT5120/5120HR2 UT5140/5140HR2 UT5160/5160HR2	50V 100V 200V 400V 600V	1V @ 5A	10 $\mu$ A	300 $\mu$ A

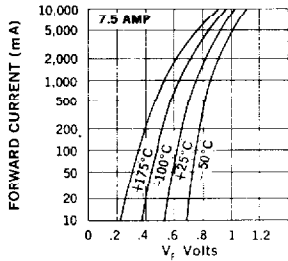
Typical Forward Voltage vs Forward Current.



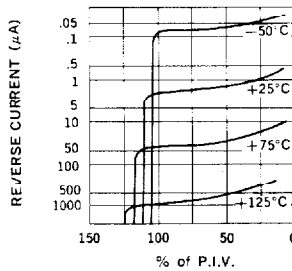
Typical Forward Voltage vs Forward Current



Typical Forward Voltage vs Forward Current



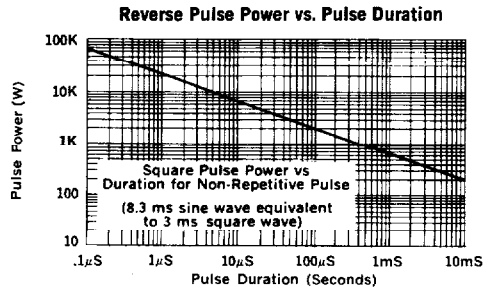
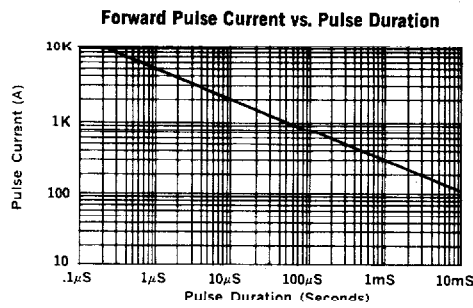
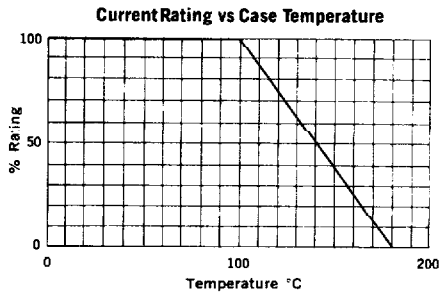
Typical P.I.V. vs Reverse Current



**OPTIONAL HIGH RELIABILITY (HR2) SCREENING**

The following tests are performed on 100% of the devices specified UT5105HR2 through UT8160HR2.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature	1032	24 Hours @ 175°C
2. Temperature Cycling	1051	C, 20 Cycles, -65 to +175°C. No dwell required @ 25°C, t ≥ 10 min. @ extremes.
3. Hermetic Seal a. Gross Leak	1071	E, ZYGLO
4. High Temperature Reverse Bias (HTRB)	1038	A, T <sub>A</sub> = 150°C, V <sub>R</sub> = 80% of rating, 48 hours
5. Interim Electrical Parameters	GO/NO GO	V <sub>F</sub> and I <sub>R</sub> @ 25°C
6. Power Burn-in	1038	B, T <sub>A</sub> = 25°C, 96 Hours, I <sub>O</sub> adjusted 150°C, ≤ T <sub>J</sub> ≤ 175°C
7. Final Electrical Parameters	GO/NO GO	V <sub>F</sub> + I <sub>R</sub> @ 25°C PDA = 10% (Final Electricals)



**MECHANICAL SPECIFICATIONS**

