

RECTIFIERS

Fast Recovery, 6 Amp to 9 Amp

UTR4405-UTR4440
 UTR5405-UTR5440
 UTR6405-UTR6440
 UTR4405HR2-UTR4440HR2
 UTR5405HR2-UTR5440HR2
 UTR6405HR2-UTR6440HR2

FEATURES

- Continuous Rating: to 9A
- Controlled Avalanche
- Surge Rating: to 150A
- Fast Recovery, 40kHz Operation
- PIV: to 400V
- Miniature Package

DESCRIPTION

The same basic construction as all Microsemi diodes, but using a miniature stud mounting and larger junction area, provides a 9 Amp continuous and 150 Amp surge rating in a package only one fifth the weight and one quarter the volume of conventional types.

ABSOLUTE MAXIMUM RATINGS

Peak Inverse Voltage	6 Amp Series	7.5 Amp Series	9 Amp Series
50V	UTR4405/4405HR2	UTR5405/5405HR2	UTR6405/6405HR2
100V	UTR4410/4410HR2	UTR5410/5410HR2	UTR6410/6410HR2
200V	UTR4420/4420HR2	UTR5420/5420HR2	UTR6420/6420HR2
400V	UTR4440/4440HR2	UTR5440/5440HR2	UTR6440/6440HR2

	6 Amp Series	7.5 Amp Series	9.0 Amp Series
Maximum Average D.C. Output Current @ $T_C = 100^\circ\text{C}$	6.0A	7.5A	9.0A
Non Repetitive Sinusoidal Surge Current (8.3ms)	120A	135A	150A
Operating Temperature Range	-195°C to +175°C		
Storage Temperature Range	-195°C to +200°C		
Thermal Resistance	7.5°C/W		

MECHANICAL SPECIFICATIONS

UTR4405-UTR4440 UTR5405-UTR5440 UTR6405-UTR6440
 UTR4405HR2-UTR4440HR2 UTR5405HR2-UTR5440HR2 UTR6405HR2-UTR6440HR2

Part Identification: Numerals and polarity letter indicate UTR type number, e.g., UTR 4400.
Polarity: Cathode to Stud is standard. Reverse polarity denoted by "R" suffix.
Finish: Metal parts gold plated per MIL-G-45204, Type II.
Weight: 1.5 grams, typical.
 Also available with insulated stud. Reference Design Note 17.

Installation
 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.

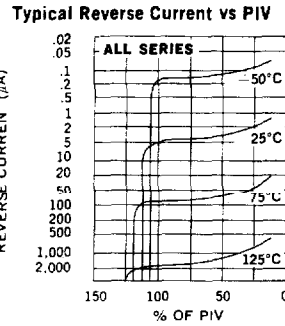
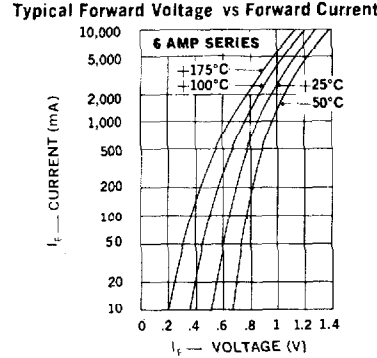
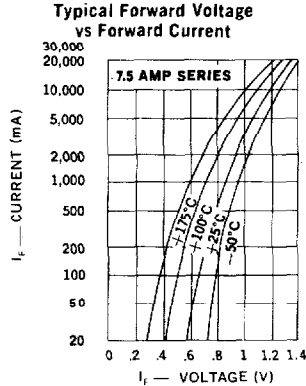
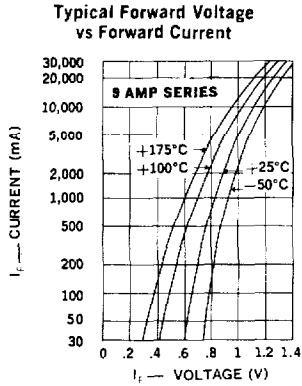
BODY C — Stud Mount

Microsemi Corp.
Watertown
 The diode experts

ELECTRICAL SPECIFICATIONS (at 25°C unless noted)

Type	PIV	Maximum Forward Voltage Drop	Maximum Reverse Current @ PIV		Maximum Reverse Recovery Time*
			25°C	100°C	
UTR6405/6405HR2 UTR6410/6410HR2 UTR6420/6420HR2 UTR6440/6440HR2	50V 100V 200V 400V	1.1V @ 6.0A	10 μ A	300 μ A	300ns 300ns 400ns 500ns
UTR5405/5405HR2 UTR5410/5410HR2 UTR5420/5420HR2 UTR5440/5440HR2	50V 100V 200V 400V	1.1V @ 5.0A	10 μ A	300 μ A	300ns 300ns 400ns 500ns
UTR4405/4405HR2 UTR4410/4410HR2 UTR4420/4420HR2 UTR4440/4440HR2	50V 100V 200V 400V	1.1V @ 4.0A	10 μ A	300 μ A	300ns 300ns 400ns 500ns

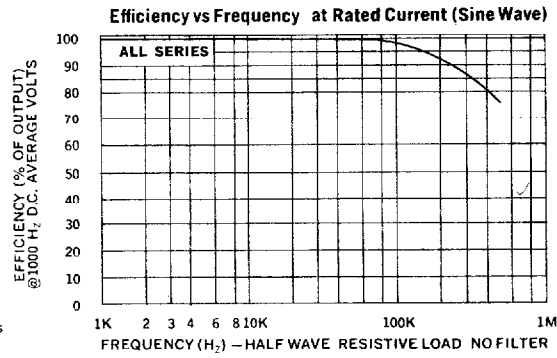
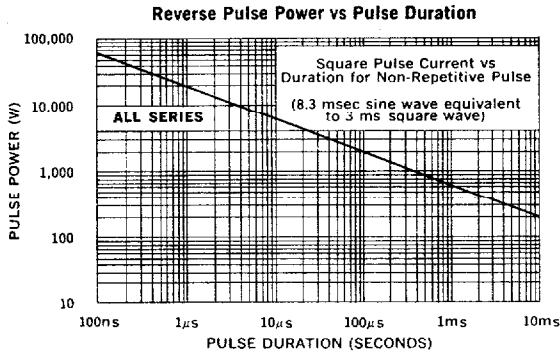
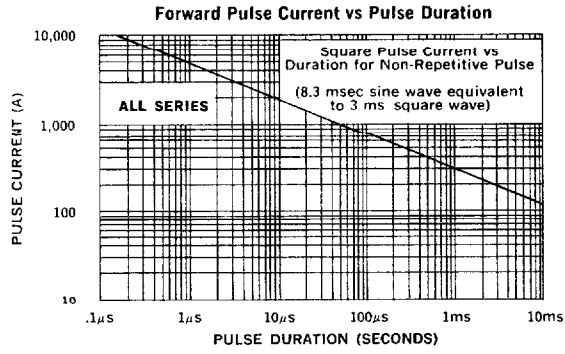
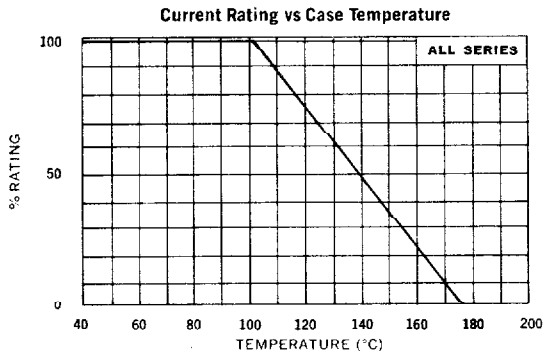
*Recovery time is measured from 1A to 1A, recovering to 0.5A.



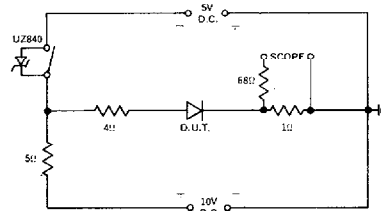
OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices specified UTR4405HR2 through UTR6440HR2.

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 ≥ min. extremes
3. Hermetic Seal a. Gross Leak	1071	E, ZYGLO
4. High Temperature Reverse Bias (HTRB)	1038	A, T _A = 150°C, V _R = 80% of rating, 48 hours
5. Interim Electrical Parameters	GO/NO GO	V _F + I _R @ 25°C
6. Power Burn-in	1038	B, T _A = 25°C, 96 Hours, I _O adjusted 150°C, ≤ I _F ≤ 175°C
7. Final Electrical Parameters	GO/NO GO	V _F + I _R @ 25°C PDA = 10% (Final Electricals)



Reverse Recovery Circuit



MECHANICAL SPECIFICATIONS

