RoHS Available

2 Amp To 4 Amp Fast Recovery Rectifiers

DESCRIPTION

Small size and high surge capability make this series of power switching rectifiers desirable for power supplies where size, weight and reliability are important. Microsemi also offers numerous other rectifier products to meet higher and lower current ratings with various recovery time requirements including standard, fast and ultrafast device types in both through-hole and surface mount packages.

Important: For the latest information, visit our website http://www.microsemi.com.

"B" Package

FEATURES

- Miniature voidless hermetically sealed glass package.
- Fast recovery 2 amp to 4 amp rectifier series with a V_{RWM} range from 50 to 600 V.
- Extremely robust construction.
- Internal *"Category 1"* metallurgical bonds.
- RoHS compliant versions available.

APPLICATIONS / BENEFITS

- Surge current rating to 100 amps.
- Low thermal resistance.
- Controlled avalanche with peak reverse power capability.
- Inherently radiation hard as described in Microsemi MicroNote 050.

MAXIMUM RATINGS @ T_A= 25 °C unless otherwise specified

Parameters/Test Conditions		Symbol	Value	Unit
Junction Temperature		T_J	-65 to +175	°C
Storage Temperature		T_{STG}	-65 to +200	°C
Thermal Resistance Junction-to-Lead @ .375 in lead length from body		$R_{\Theta JL}$	See Derating Curves	
Working Peak Reverse Voltage:		V_{RWM}		V
2 Amp, 3 Amp, 4 Amp				
UTR2305, UTR3305, UTR4305			50	
UTR2310, UTR3310, UTR4310			100	
UTR2320, UTR3320, UTR4320			200	
UTR2340, UTR3340, UTR4340			400	
UTR2350, UTR3350, UTR4350			500	
UTR2360, UTR3360, UTR4360			600	
Forward Surge Current (Peak) @ 8.3 ms	2 Amp Series	I_{FSM}	60	A
	3 Amp Series		80	
	4 Amp Series		100	
Average Rectified Output Current @ T_L = +25 °C	2 Amp Series	I_{O1}	2.0	A
	3 Amp Series		3.0	
	4 Amp Series		4.0	
Average Rectified Output-Current @ T_A = +100 °C	2 Amp Series	I_{O2}	1.0	A
	3 Amp Series		1.5	
	4 Amp Series		2.0	
Solder Temperature @ 10 s		T_{SP}	260	°C

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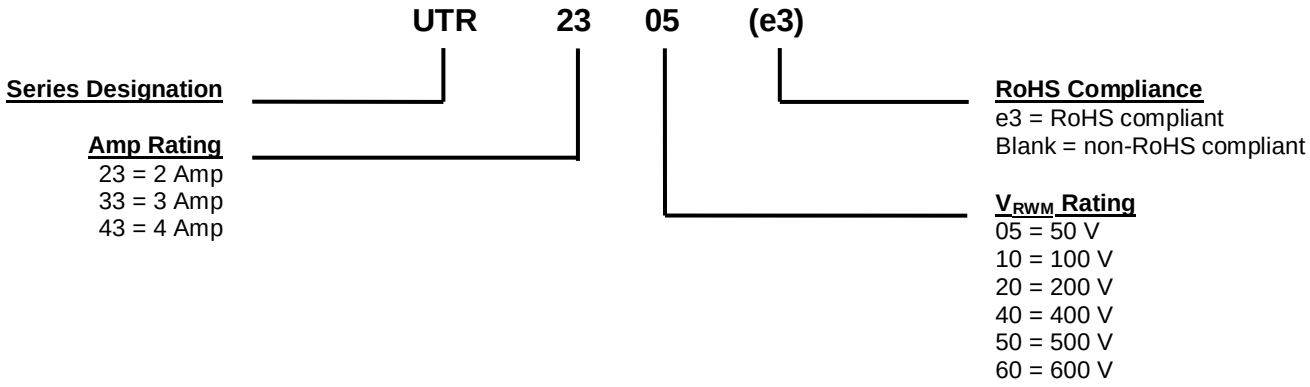
MECHANICAL and PACKAGING

- CASE: Hermetically sealed voidless hard glass with tungsten slugs.
- TERMINALS: Tin/lead or RoHS compliant matte/tin over nickel plated copper.
- MARKING: Green band indicates "UTR", part number printed on body.
- POLARITY: Indicated by green band.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: approximately 0.75 grams.
- See Package Dimensions on last page.

PART NOMENCLATURE



SYMBOLS & DEFINITIONS

Symbol	Definition
I_F	Forward Current: The forward current dc value, no alternating component.
I_{FSM}	Maximum Forward Surge Current: The forward current, surge peak or rated forward surge current.
I_O	Average Rectified Output Current: Output current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
C_J	Junction Capacitance: The junction capacitance in pF at a specified frequency (typically 1 MHz) and specified voltage.
V_F	Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.
V_{RWM}	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range.

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted

TYPE	WORKING PEAK REVERSE VOLTAGE V_{RWM}	MAXIMUM FORWARD VOLTAGE DROP	MAXIMUM LEAKAGE CURRENT @ V_{RWM}		REVERSE RECOVERY TIME (MAX) t_{rr} (Note 1)	MAXIMUM JUNCTION CAPACITANCE C_J @ 25°C	
			µA			pF	
	Volts	Volts	25 °C	100 °C	ns	0 V	-10 V
UTR4305	50	1.1 V @ 4 A	5	100	250	600	240
UTR4310	100				250	400	160
UTR4320	200				250	320	128
UTR4340	400				400	240	96
UTR4350	500				400	200	80
UTR4360	600				400	160	64
UTR3305	50	1.1 V @ 3 A	5	100	250	600	240
UTR3310	100				250	400	160
UTR3320	200				250	320	128
UTR3340	400				300	240	96
UTR3350	500				350	200	80
UTR3360	600				400	160	64
UTR2305	50	1.1 V @ 2 A	5	100	250	600	240
UTR2310	100				250	400	160
UTR2320	200				250	320	128
UTR2340	400				300	240	96
UTR2350	500				350	200	80
UTR2360	600				400	160	64

NOTE: 1. Recovery time is measured from 1A to 1A recovering to 0.5A.

GRAPHS

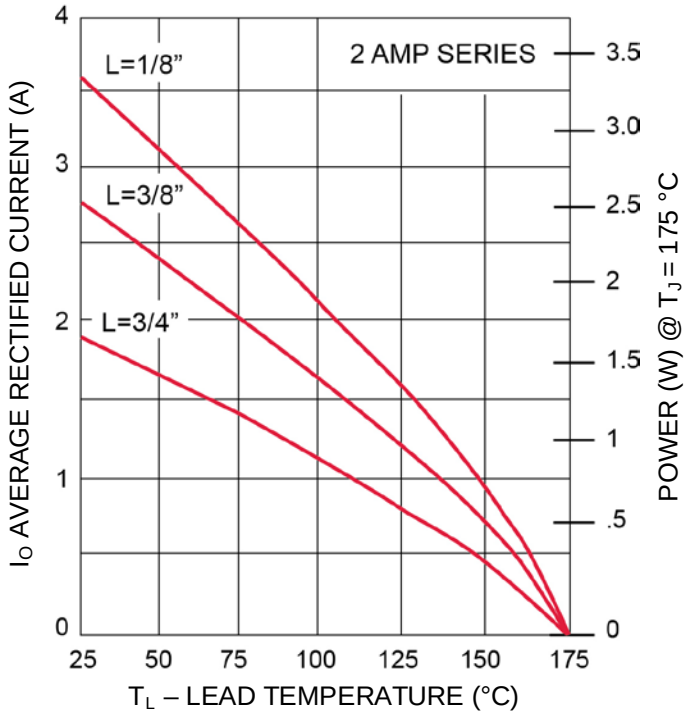


FIGURE 1
Maximum Current vs Lead Temperature

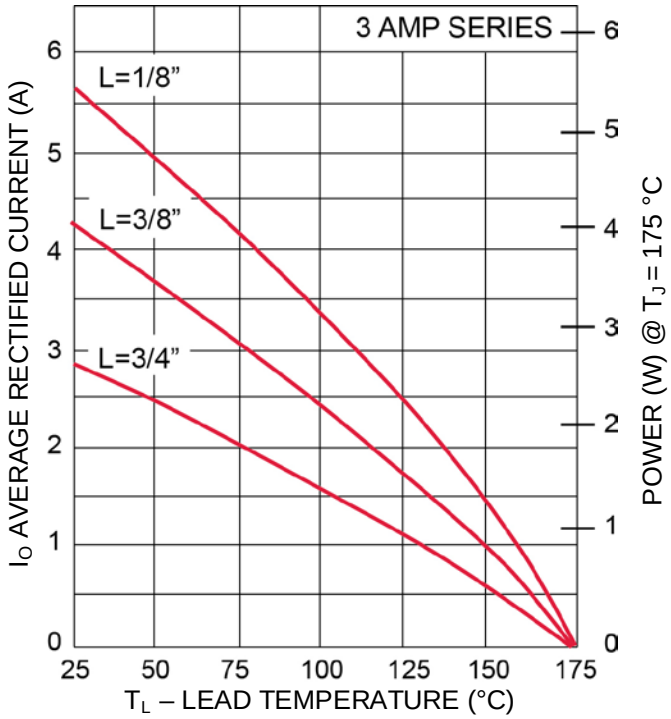


FIGURE 2
Maximum Current vs Lead Temperature

GRAPHS (continued)

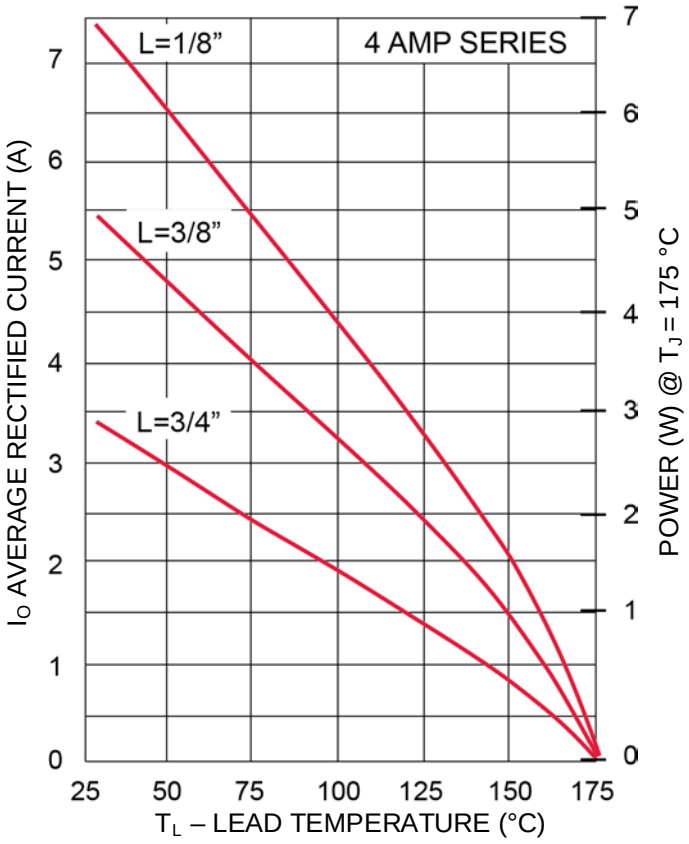


FIGURE 3
Maximum Current vs Lead Temperature

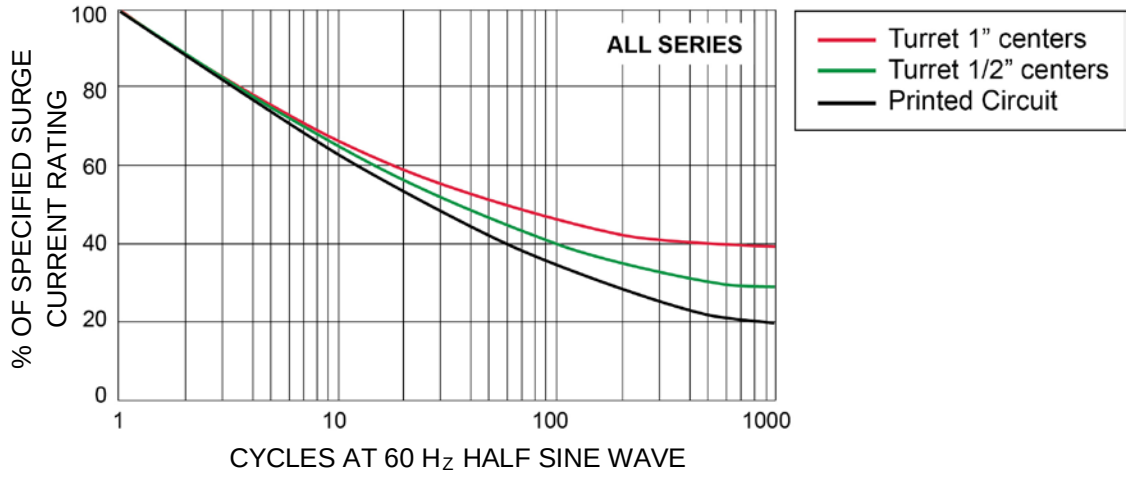


FIGURE 4
Allowable Forward Surge Current vs Number of Cycles

GRAPHS (continued)

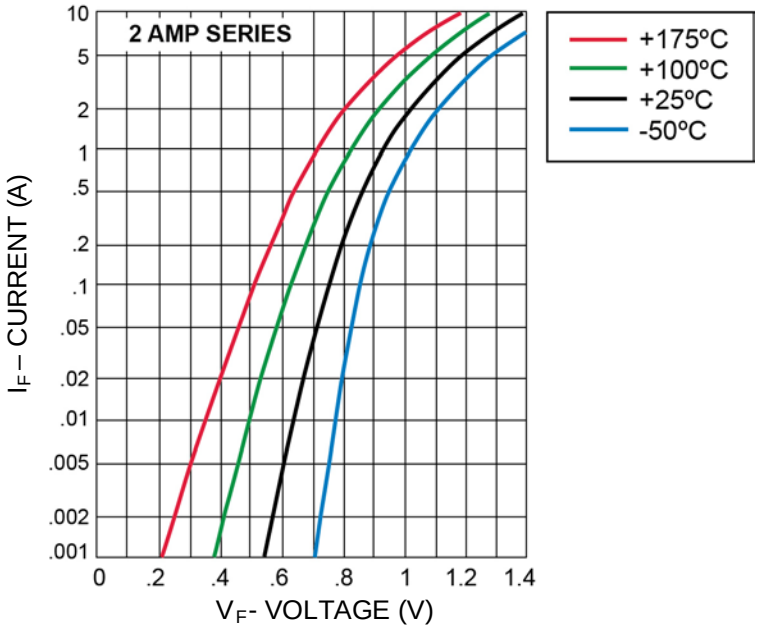


FIGURE 5
Typical Forward Current vs Forward Voltage

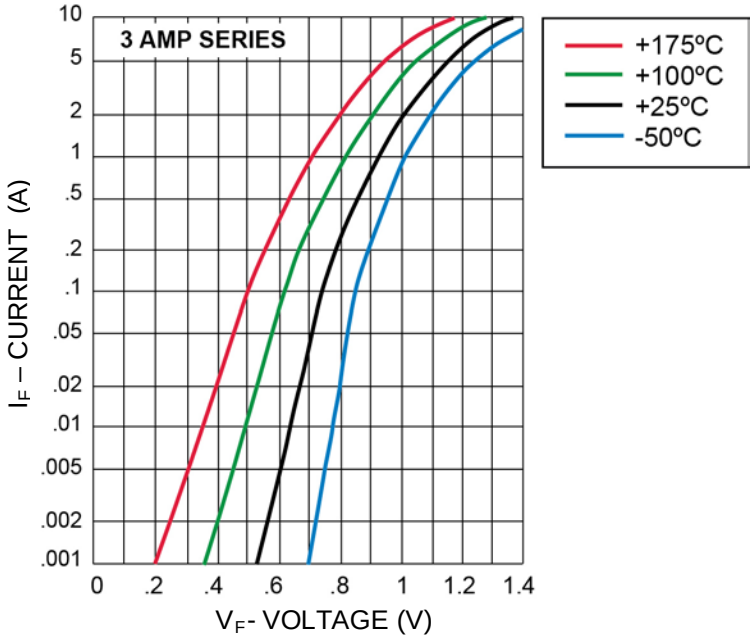


FIGURE 6
Typical Forward Current vs Forward Voltage

GRAPHS (continued)

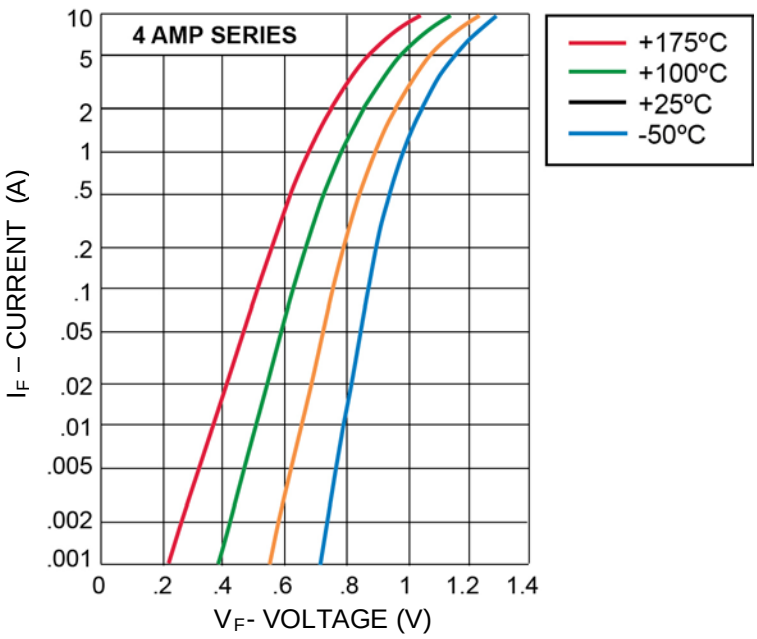


FIGURE 7
Typical Forward Current vs Forward Voltage

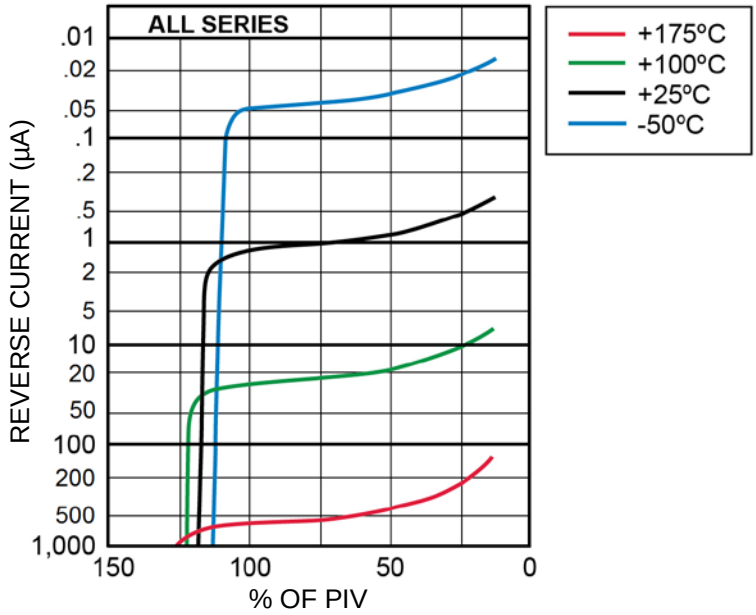


FIGURE 8
Typical Reverse Current vs Working Peak Reverse Voltage

GRAPHS (continued)

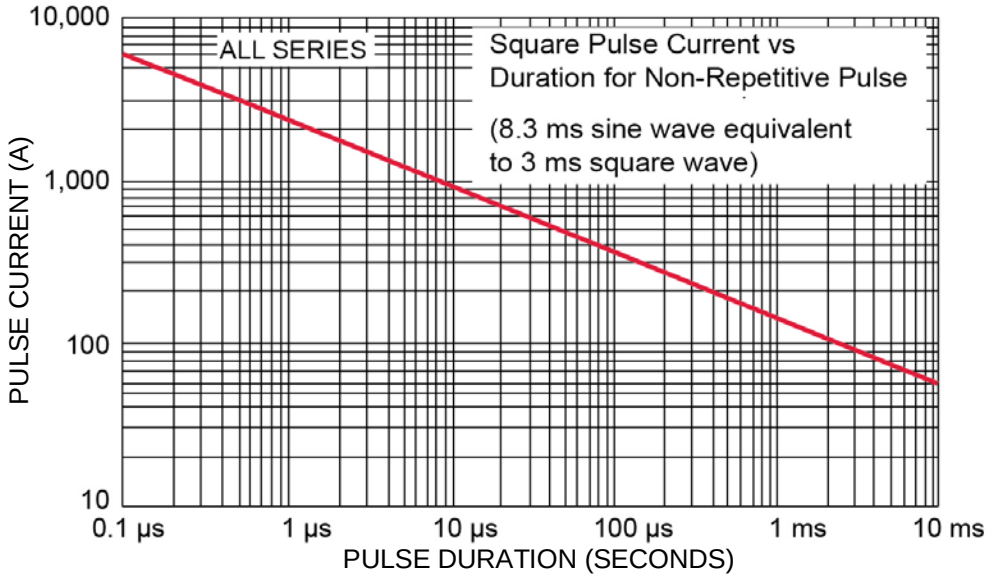


FIGURE 9
Forward Pulse Current vs Pulse Duration

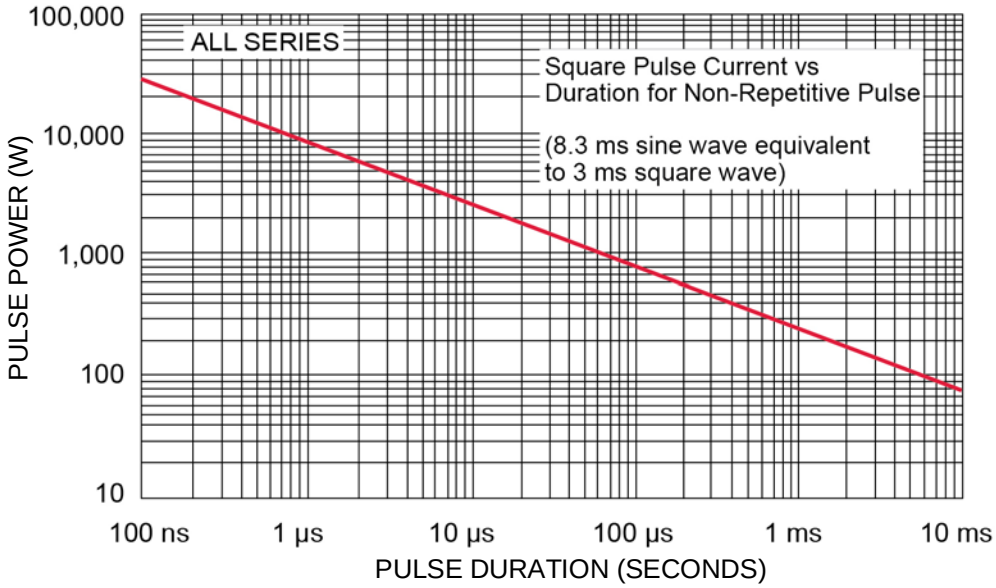


FIGURE 10
Reverse Pulse Power vs Pulse Duration

GRAPHS (continued)

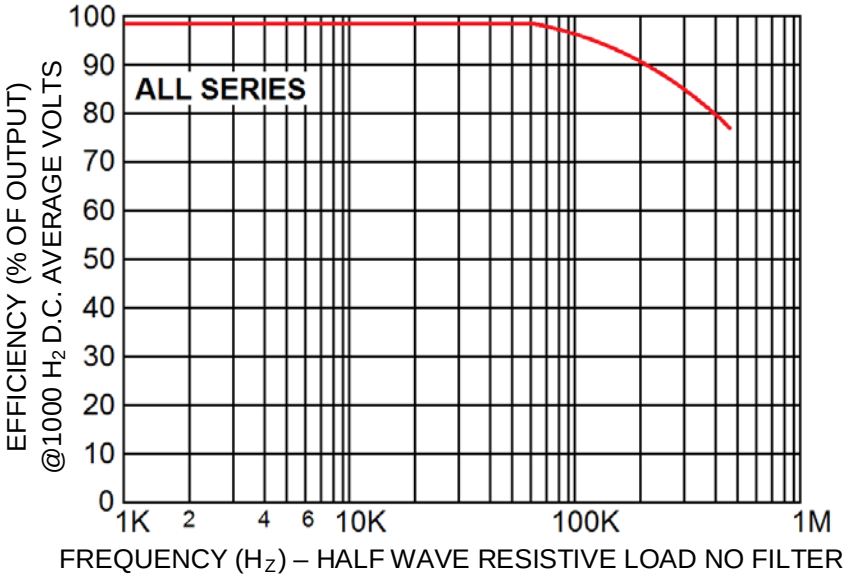
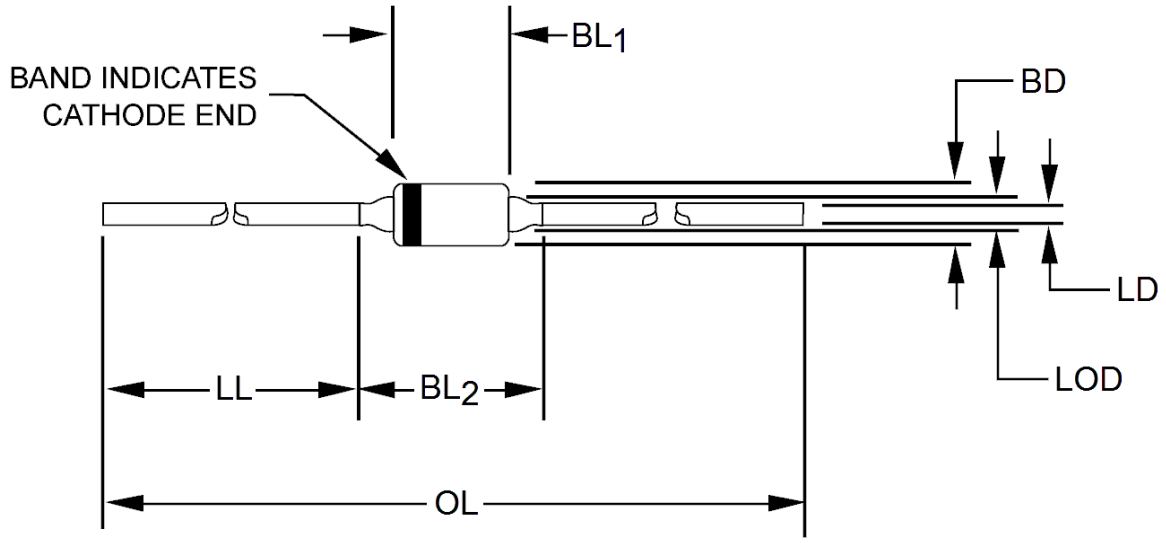


FIGURE 11
Typical Reverse Current vs Working Peak Reverse Voltage

PACKAGE DIMENSIONS



NOTES:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Dimension BL_2 shall include the entire body including slugs and sections of the lead over which the diameter is uncontrolled. This uncontrolled area is defined as the zone between the edge of the diode body and extending .050 inch (1.27 mm) onto the leads.
4. Dimension BD shall be measured at the largest diameter.
5. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

Ltr	DIMENSIONS				Notes
	INCHES		MILLIMETERS		
	Min	Max	Min	Max	
BD	-	.145	-	3.68	4
BL_1	.175 TYP		4.4 TYP		
BL_2	-	.300	-	7.62	3
LD	.039	.041	.99	1.05	3
LL	.975	-	24.8	-	
LOD	.115 TYP		2.9 TYP		
OL	2.30	--	58.4	--	