RoHS Available

2 Amp To 4 Amp Standard Recovery Rectifiers

DESCRIPTION

High average power and surge capability make these series of devices attractive in many high-reliability applications. All Microsemi rectifiers have a sleeve of pure hard glass fused to the silicon junction. Since the silicon sees only this glass, electrical characteristics are permanently stable. This voidless, monolithic package is totally unaffected by the most severe moisture or temperature testing. Consult factory for surface mount option.

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

"B" Package

FEATURES

- Miniature voidless hermetically sealed glass package.
- Continuous current ratings up to 4 amps.
- Extremely robust construction.
- Internal *"Category 1"* metallurgical bonds.
- RoHS compliant versions available.

APPLICATIONS / BENEFITS

- Standard recovery 2 amp to 4 amp rectifier series with a V_{RWM} range from 50 to 600 V.
- Surge current rating to 100 amps.
- Low thermal resistance.
- Controlled avalanche breakdown 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 (1)		$R_{\Theta JL}$	See Derating Curves	
Working Peak Reverse Voltage:	**2 Amp / 3 Amp / 4 Amp**	V_{RWM}		V
	UT2005, UT3005, UT4005		50	
	UT2010, UT3010, UT4010		100	
	UT2020, UT3020, UT4020		200	
	UT2040, UT3040, UT4040		400	
	UT2060, UT3060, UT4060		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

NOTE: 1. At 0.375 inch (9.53 mm) lead length from body.

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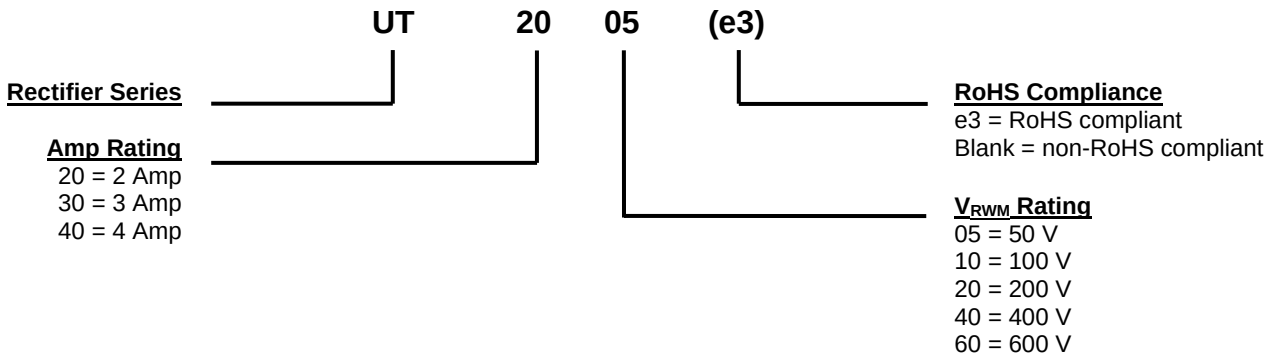
MECHANICAL and PACKAGING

- CASE: Hermetically sealed voidless hard glass with tungsten slugs.
- TERMINALS: Tin/lead or RoHS compliant matte/tin over nickel plate over copper.
- MARKING: Orange band indicates "UT", part number printed on body.
- POLARITY: Indicated by orange band.
- TAPE & REEL option: Standard per EIA-296. Consult factory for quantities.
- WEIGHT: 0.75 grams approximate.
- 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.
T_J	Junction Temperature: The temperature of a semiconductor junction.
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 @ 25ºC unless otherwise noted

	WORKING PEAK REVERSE VOLTAGE V_{RWM}	MAXIMUM FORWARD VOLTAGE DROP	MAXIMUM LEAKAGE CURRENT @ V_{RWM}	
TYPE	Volts	Volts	µA	
			25 °C	125 °C
UT4005 UT4010 UT4020 UT4040 UT4060	50 100 200 400 600	1 V @ 3 A	5	100
UT3005 UT3010 UT3020 UT3040 UT3060	50 100 200 400 600	1 V @ 2 A	5	100
UT2005 UT2010 UT2020 UT2040 UT2060	50 100 200 400 600	1 V @ 1 A	5	100

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GRAPHS

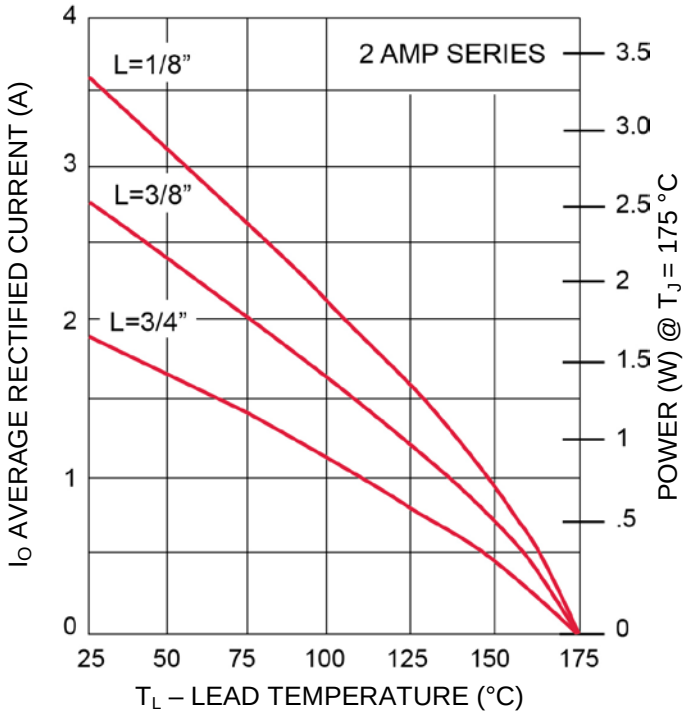


FIGURE 1
Maximum Current vs Lead Temperature

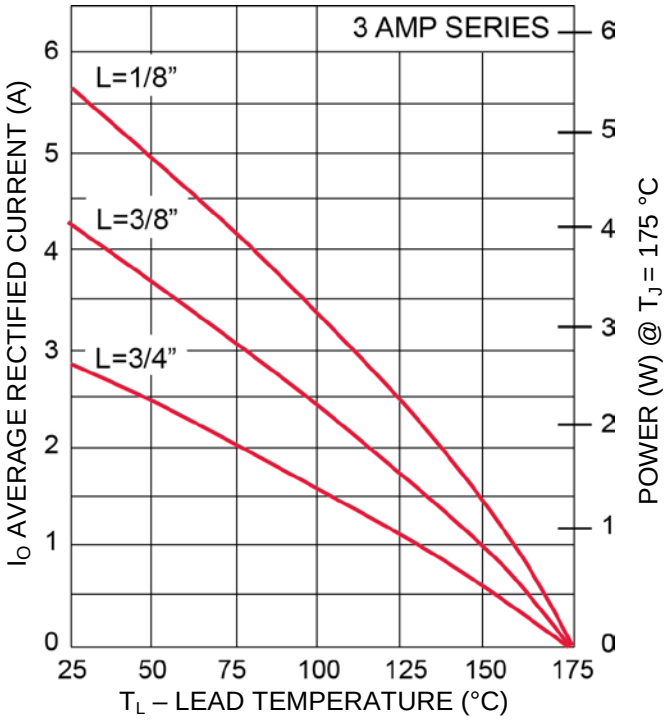


FIGURE 2
Maximum Current vs Lead Temperature

GRAPHS

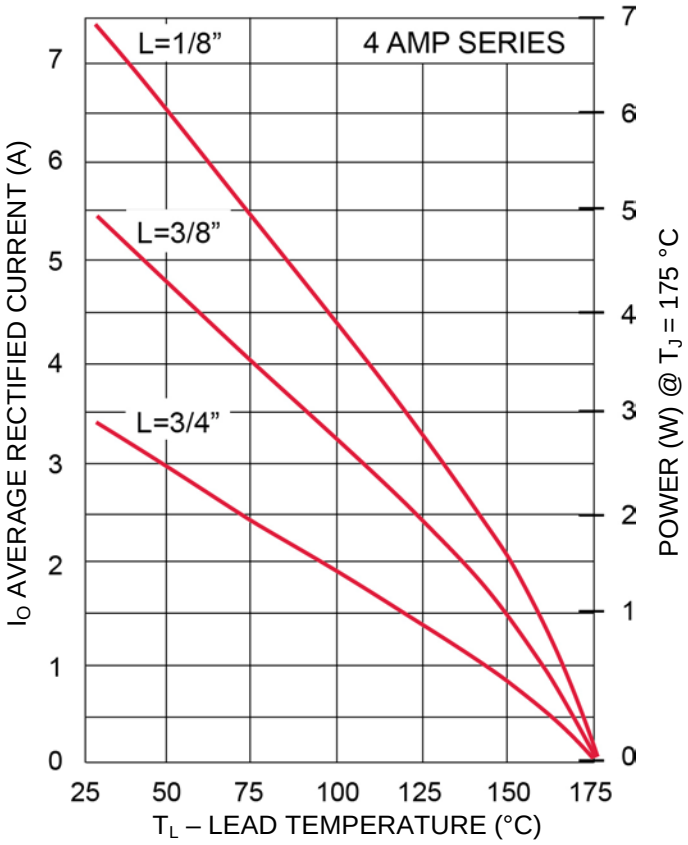


FIGURE 3
Maximum Current vs Lead Temperature

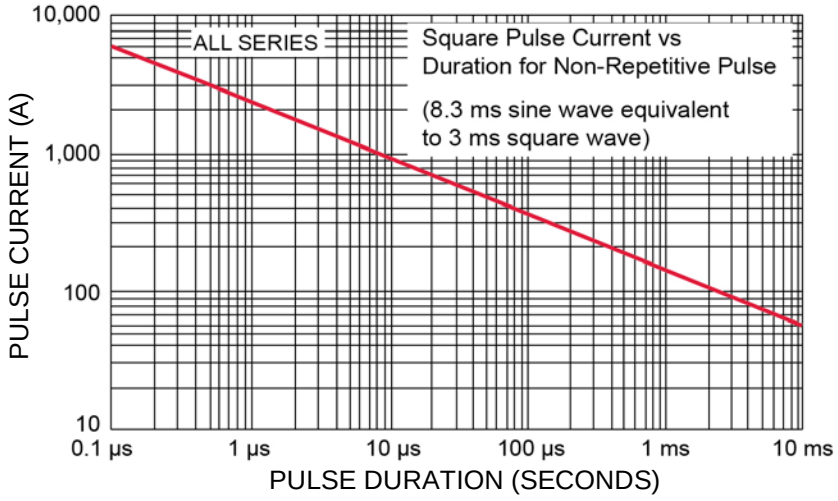


FIGURE 4
Forward Pulse Current vs Pulse Duration

GRAPHS

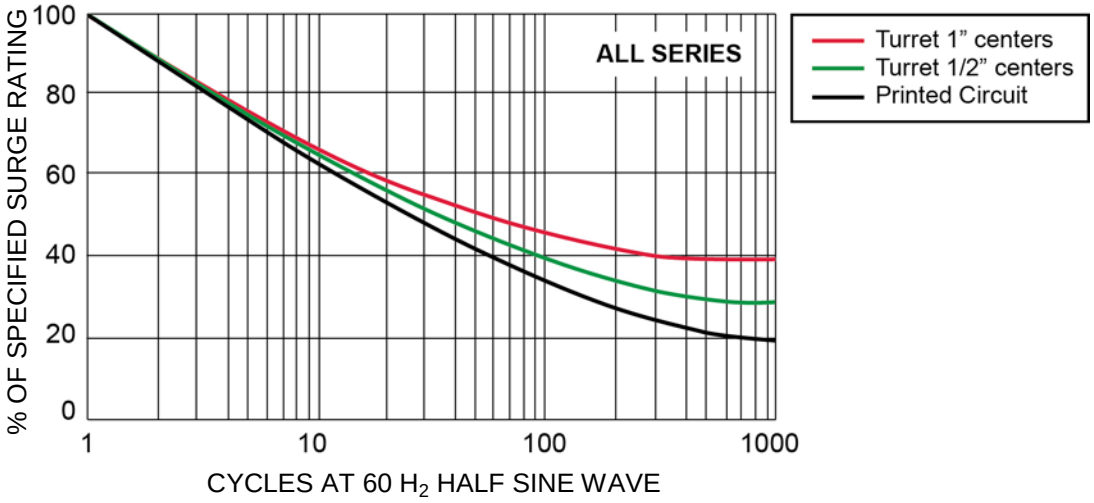


FIGURE 5
Allowable Forward Surge vs Number of Cycles

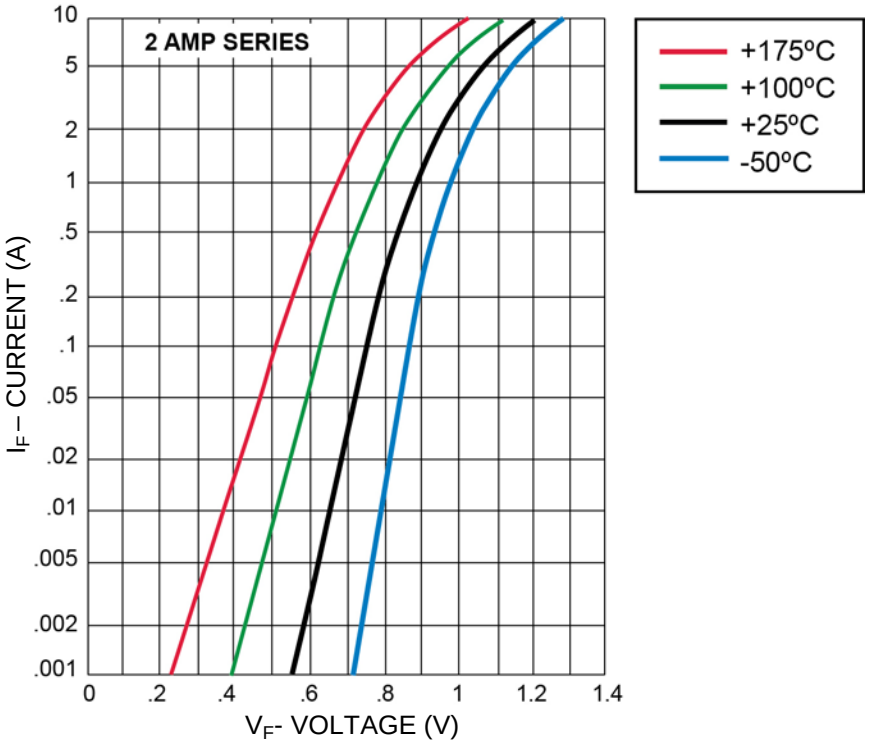


FIGURE 6
Typical Forward Current vs Forward Voltage

GRAPHS

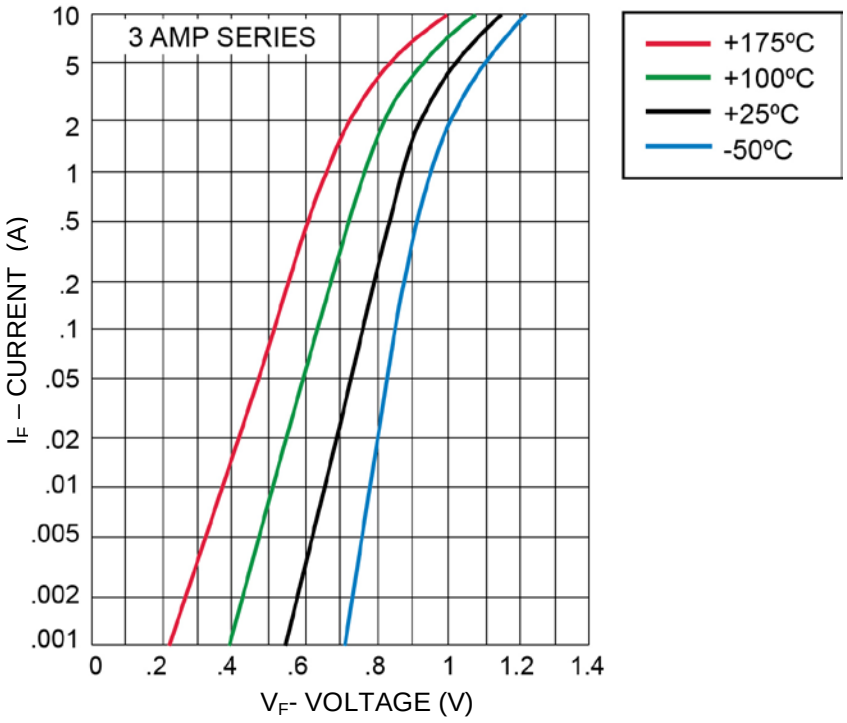


FIGURE 7
Typical Forward Current vs Forward Voltage

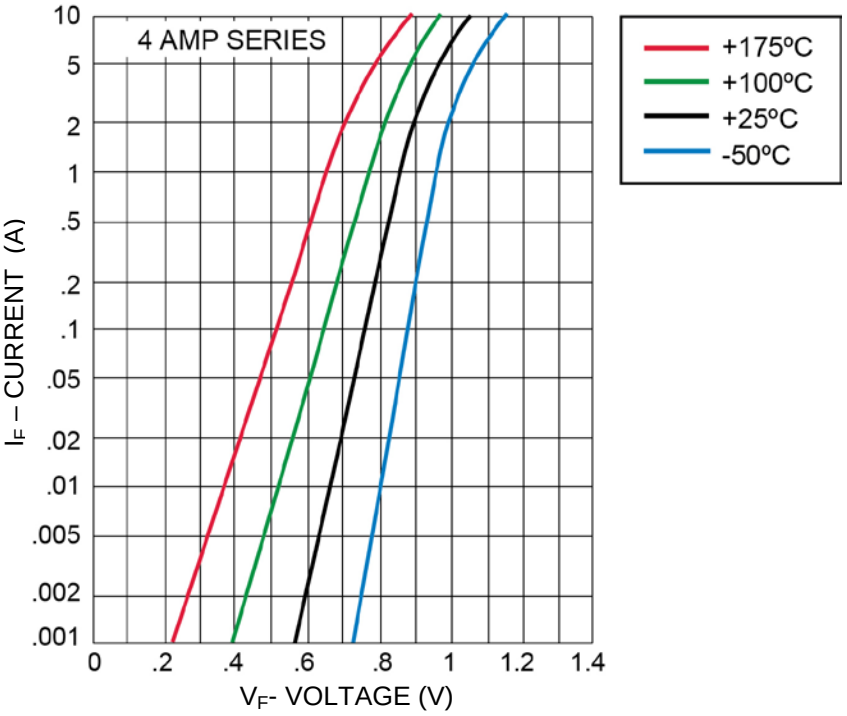


FIGURE 8
Typical Forward Current vs Forward Voltage

GRAPHS

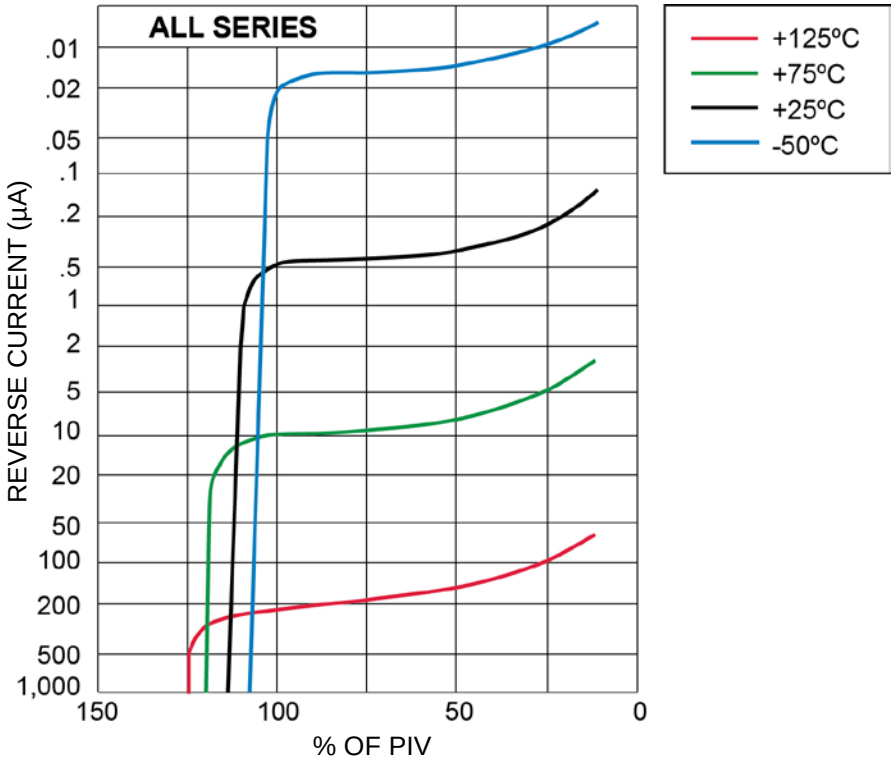


FIGURE 9
Typical Reverse Current vs Working Peak Reverse Voltage

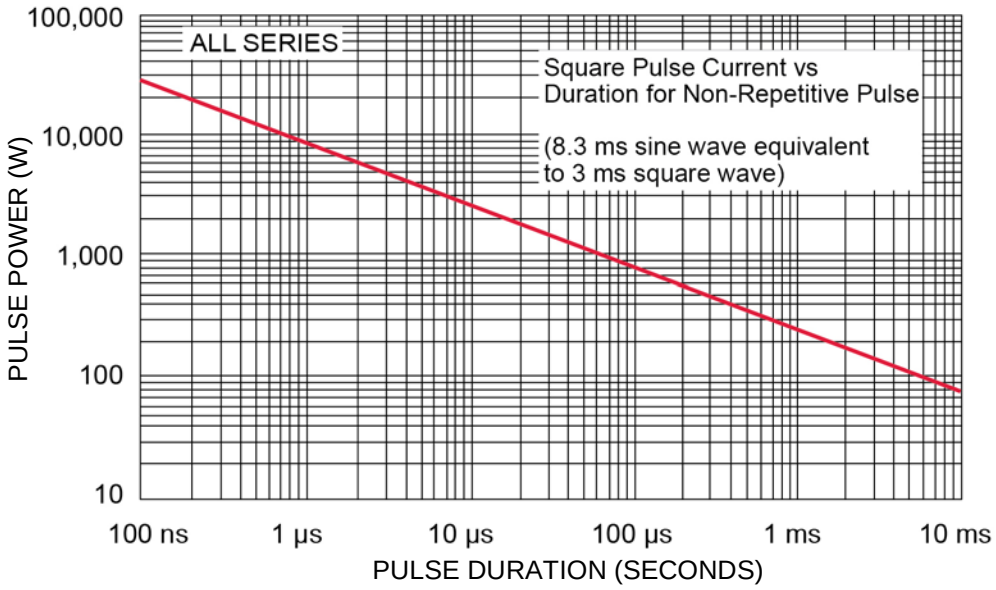
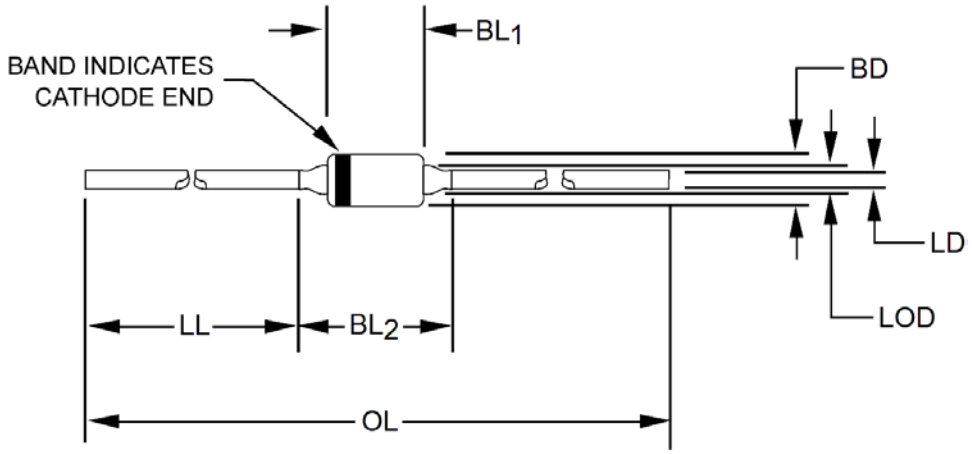


FIGURE 10
Reverse Pulse Power vs Pulse Duration

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
	INCH		MILLIMETERS		
	Min	Max	Min	Max	
BD	0.115	0.145	2.92	3.68	4
BL_1	.175 TYP		4.4 TYP		
BL_2	0.150	0.300	3.81	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	--	