RoHS Available

Three Phase Ultrafast Bridge Rectifiers

DESCRIPTION

This series of high-current three-phase bridge rectifiers are constructed with hermetically sealed rectifiers built with the same design and construction techniques used in military applications for the upmost in reliability. These include voidless glass encapsulation and internal "Category 1" metallurgical bonds. These 25 A & 40 A ultrafast rectifier bridges are available with working peak reverse voltage ratings up to 150 V per leg.

(Actual appearance may vary)

ME Package

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

FEATURES

- Current ratings to 40 amps
- V_{RWM} from 50 to 150 volts (see part nomenclature for all options)
- 150 ºC junction temperature
- Surge ratings to 250 amps
- Recovery times to 25 ns
- MIL-PRF-19500 similarity
- RoHS compliant versions available

APPLICATIONS / BENEFITS

- Fused-in voidless glass diodes used in each leg
- Electrically isolated aluminum heat sink case

MAXIMUM RATINGS

Parameters/Test Conditions		Symbol	Value	Unit
Junction and Storage Temperature		T_J and T_{STG}	-65 to +150	ºC
Thermal Resistance Junction-to-Case:	800 801	$R_{\Theta JC}$	1.5 3.0	ºC/W
Thermal Resistance Junction-to-Ambient:		$R_{\Theta JA}$	20	ºC/W
Forward Surge Current (Peak):	800 801	I_{FSM}	250 125	A
Maximum Average DC Output Current: @ T_C = 55 ºC	800 801	I_O	40 25	A
Maximum Average DC Output Current: @ T_C = 100 ºC	800 801	I_O	20 16	A
Solder Temperature @ 10 s			260	°C

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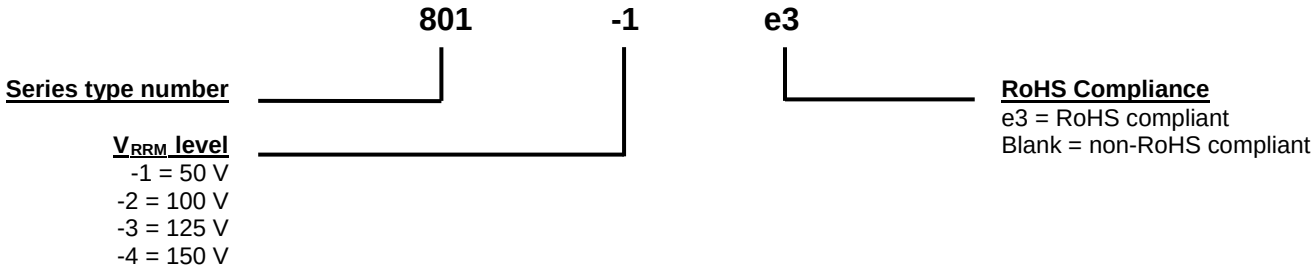
MECHANICAL and PACKAGING

- CASE: Aluminum
- TERMINALS: Tin/lead or RoHS compliant matte tin
- MARKING: Alternating current input: AC
  Cathode positive output: +
  Anode negative: -
  Part number is printed on the body
- WEIGHT: Approximately 30 grams
- See Package Dimensions on last page.

PART NOMENCLATURE



SYMBOLS & DEFINITIONS

Symbol	Definition
I_{FSM}	Surge Peak Forward Current: The forward current including all nonrepetitive transient currents but excluding all repetitive transients (ref JESD282-B)
I_O	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
V_F	Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.
I_R	Maximum Reverse Current: The maximum reverse (leakage) current that will flow at the specified voltage and temperature.
V_{RWM}	Working Peak Reverse Voltage: The peak voltage excluding all transient voltages (ref JESD282-B). Also sometimes known historically as PIV.
t_{rr}	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.

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ELECTRICAL CHARACTERISTICS

PART NUMBER	MAX FORWARD VOLTAGE PER LEG V_F (Note 1)	MAX REVERSE PEAK CURRENT I_R @ V_{RRM}		MAX REVERSE RECOVERY TIME t_{rr} I_F = 0.5 A, I_{RM} = 1.0 A, $I_{R(REC)}$ = 0.250 A
	@ 25 ºC	@ 25 ºC	@ 100 ºC	
	Volts	µA	µA	ns
800	0.95 @ 10 A	20	1000	50
801	0.95 @ 6 A	10	300	50

NOTES: 1. MAX WORKING PEAK REVERSE VOLTAGE (V_{RWM}) numbering:

PART NUMBER		WORKING PEAK REVERSE VOLTAGE V_{RWM}	MINIMUM BREAKDOWN VOLTAGE $V_{(BR)}$
		Volts	Volts
800-1	**801-1**	50	55.0
800-2	**801-2**	100	110.0
800-3	**801-3**	125	137.5
800-4	**801-4**	150	165.0

2. Pulse test: Pulse width 300 µsec, duty cycle 2%.

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GRAPHS

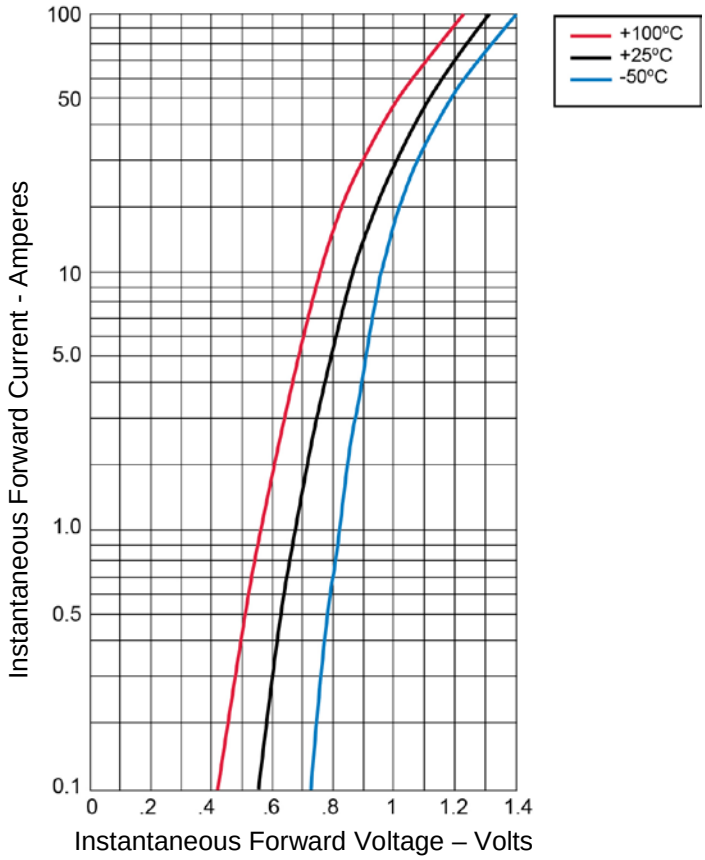

FIGURE 1

Typical Forward Characteristics – **Per Leg 800 Series**

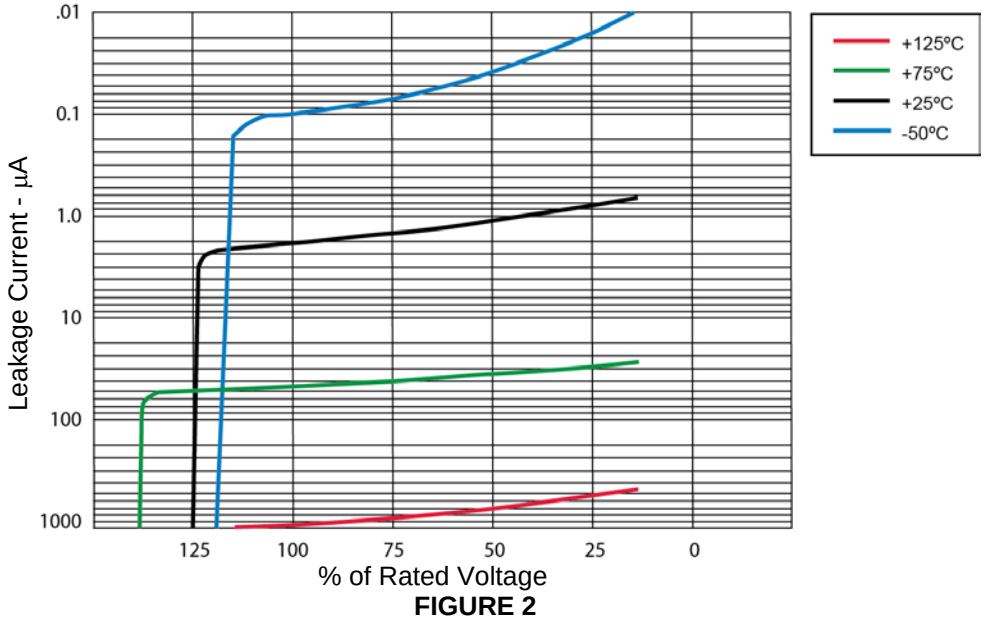

FIGURE 2

Typical Reverse Leakage Current – **Per Leg 800 Series**

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GRAPHS (continued)

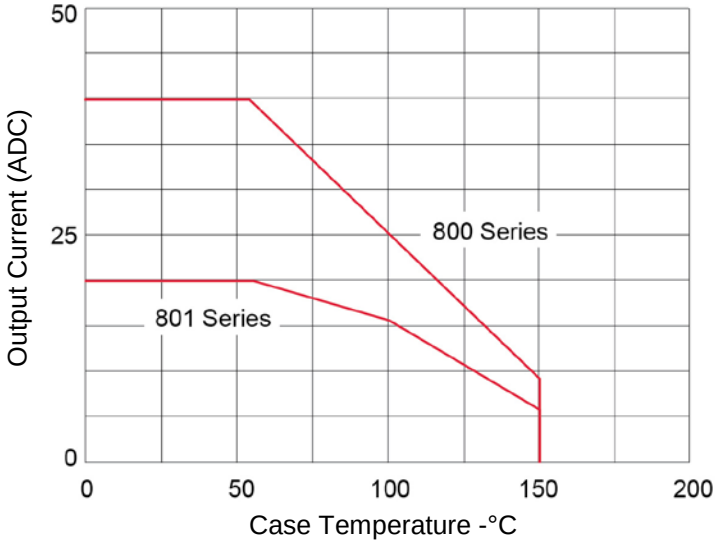

FIGURE 3
Current Derating

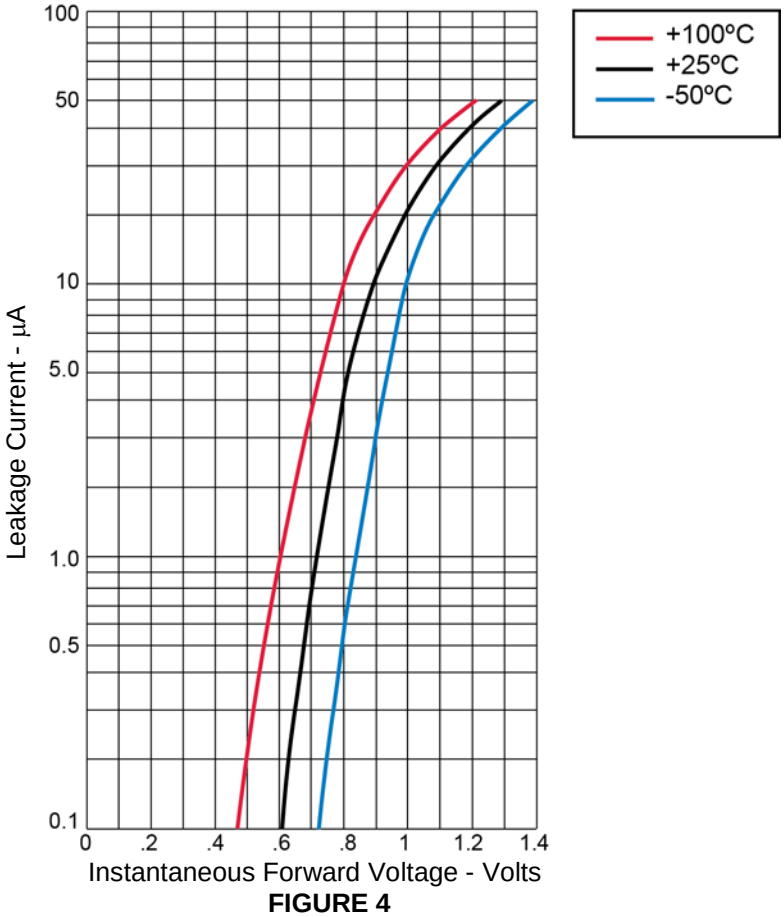

FIGURE 4
Typical Forward Characteristics – **Per Leg 801 Series**

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GRAPHS (continued)

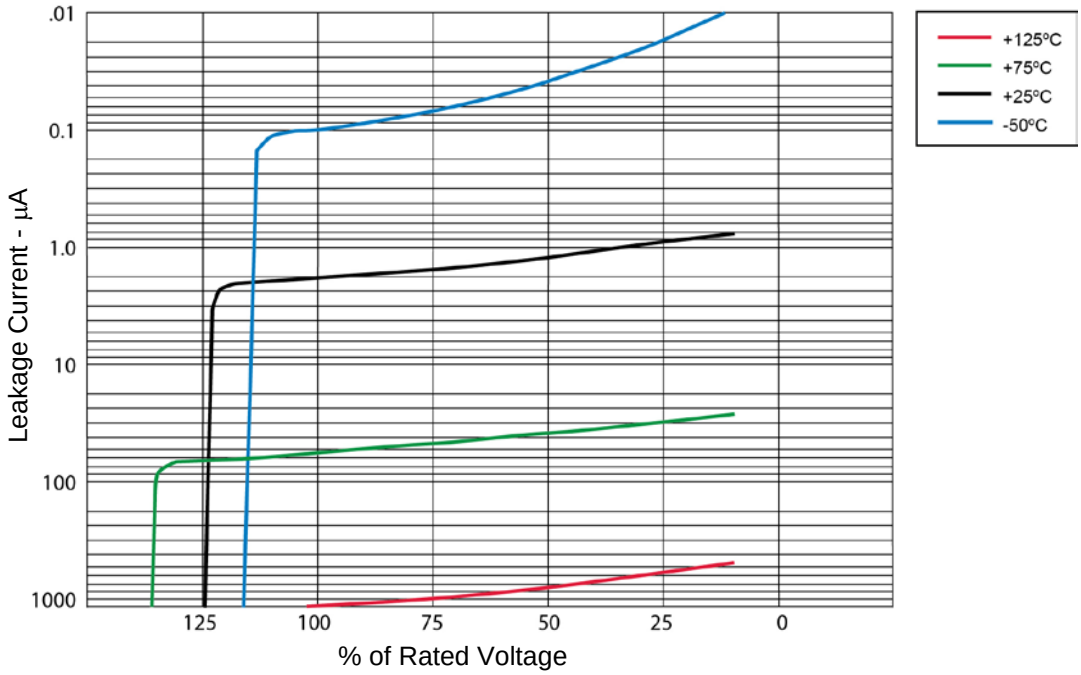

FIGURE 5
Typical Reverse Leakage Current – **Per Leg 801 Series**

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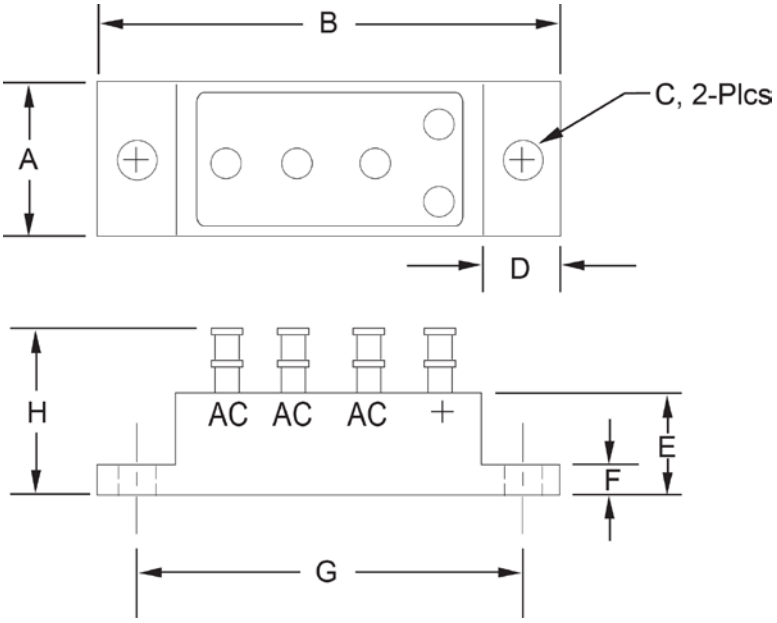
PACKAGE DIMENSIONS



Ltr	Dimensions			
	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.740	0.760	18.80	19.30
B	2.240	2.260	56.90	57.40
C (dia)	0.164	0.174	4.17	4.42
D	0.370	0.390	9.40	9.91
E	0.486	0.506	12.34	12.85
F	0.115	0.135	2.92	3.43
G	1.870	1.880	47.50	47.75
H	-	0.820	-	20.83

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