



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.

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 °C 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	°C
Thermal Resistance Junction-to-Case:	$R_{\theta JC}$	800	°C/W
		801	
Thermal Resistance Junction-to-Ambient:	$R_{\theta JA}$	20	°C/W
Forward Surge Current (Peak):	I_{FSM}	800	A
		801	
Maximum Average DC Output Current:	I_O	800	A
@ $T_C = 55$ °C		801	
Maximum Average DC Output Current:	I_O	800	A
@ $T_C = 100$ °C		801	
Solder Temperature @ 10 s		260	°C



(Actual appearance may vary)

ME Package

MSC – Lawrence

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MSC – Ireland

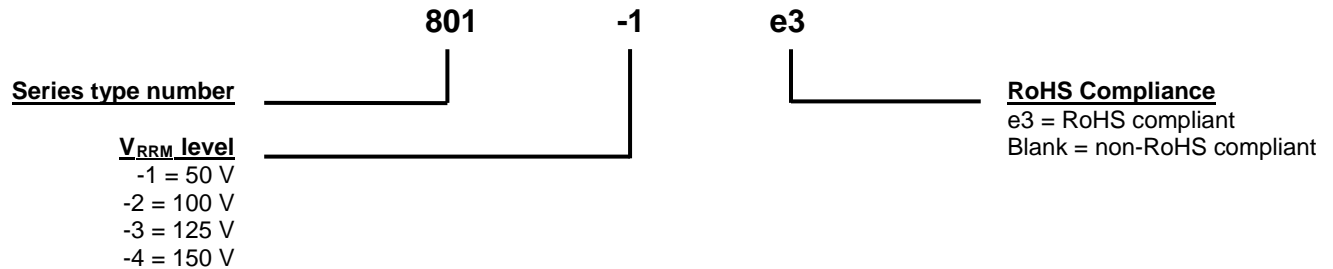
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Ennis, Co. Clare, Ireland
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Website:

www.microsemi.com

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.

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 °C	@ 25 °C	@ 100 °C	
	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 μ sec, duty cycle 2%.

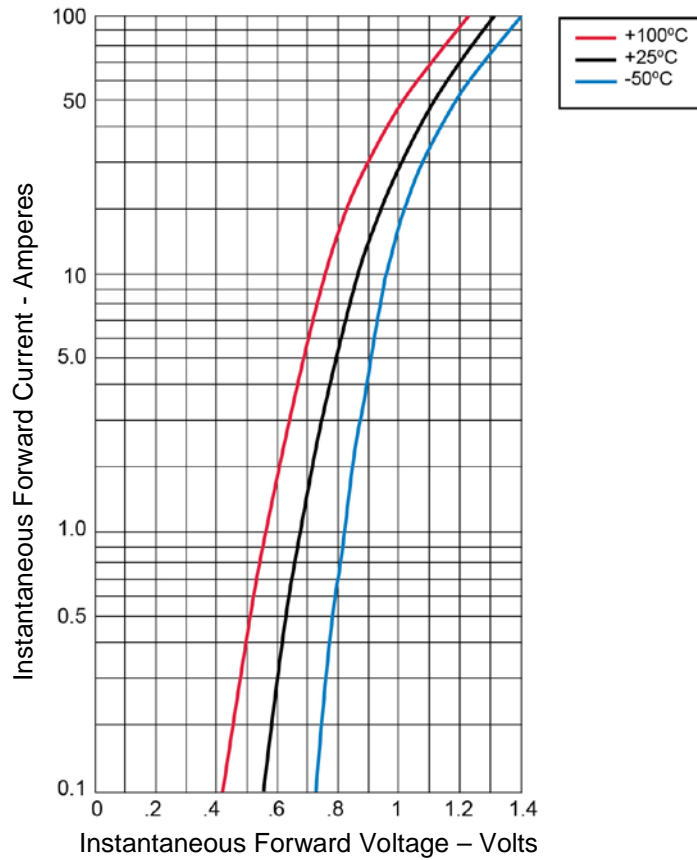
GRAPHS


FIGURE 1
Typical Forward Characteristics – Per Leg 800 Series

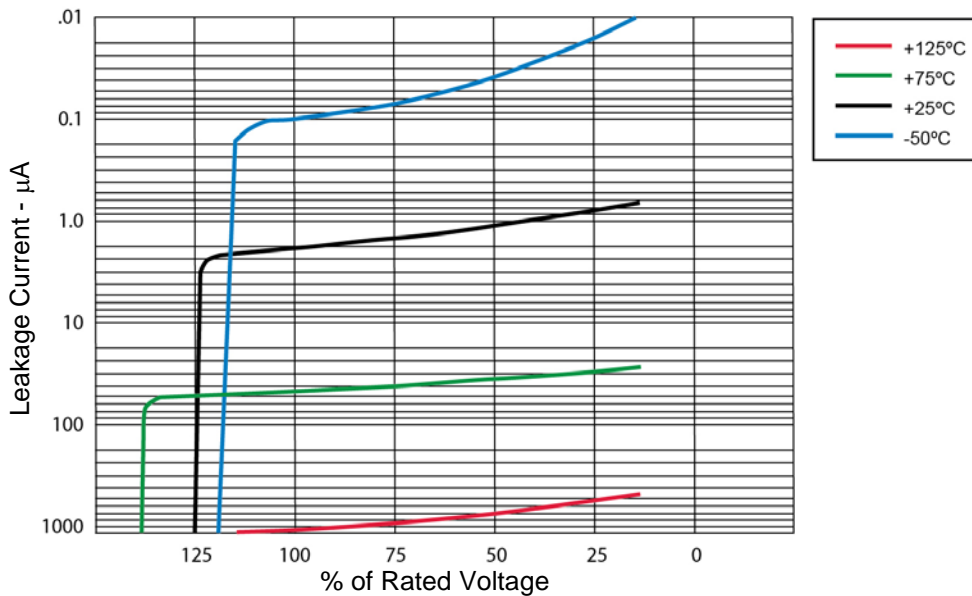


FIGURE 2
Typical Reverse Leakage Current – Per Leg 800 Series

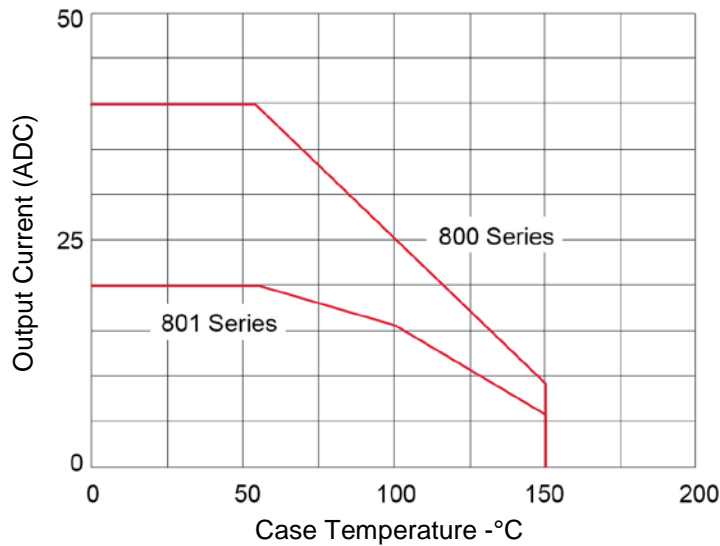
GRAPHS (continued)


FIGURE 3
Current Derating

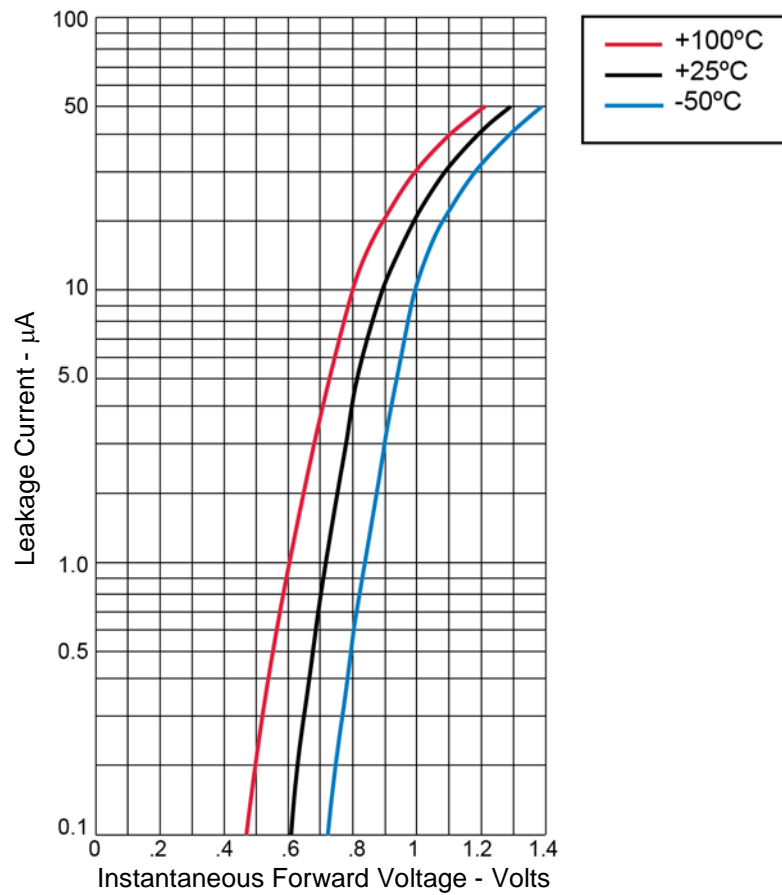


FIGURE 4
Typical Forward Characteristics – Per Leg 801 Series

GRAPHS (continued)

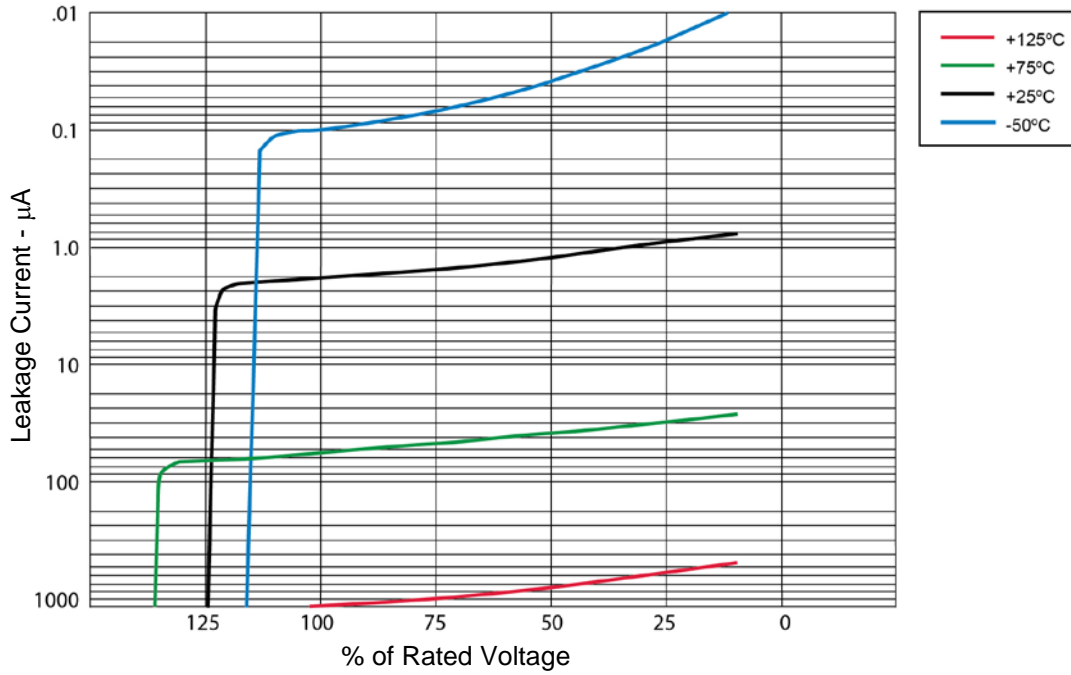
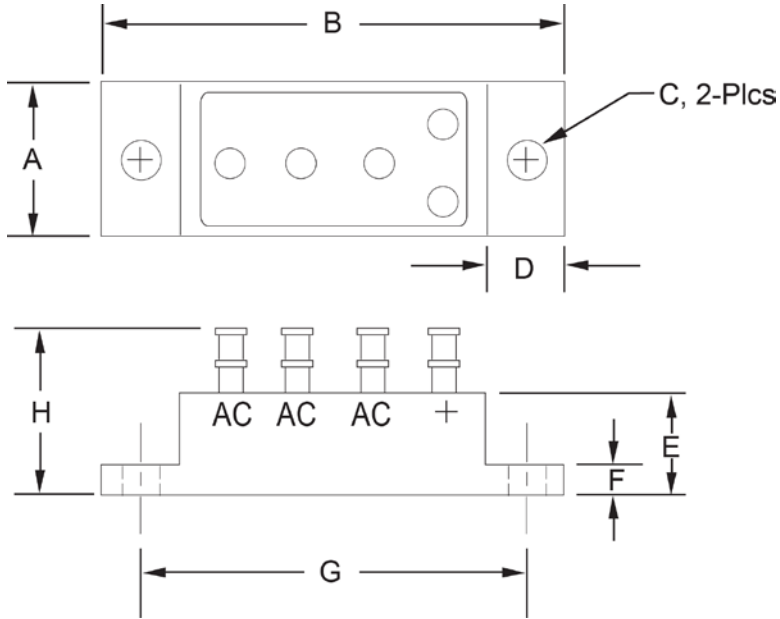


FIGURE 5
Typical Reverse Leakage Current – Per Leg 801 Series

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