## SINGLE-PHASE GLASS PASSIVATED SILICON BRIDGE RECTIFIER

Reverse Voltage - 50 to 1000 V Forward Current - 1 A

#### **Features**

- Glass passivated chip junction
- Low forward voltage drop
- High surge overload rating of 50 A peak
- · Ideal for printed circuit board

#### **Mechanical Data**

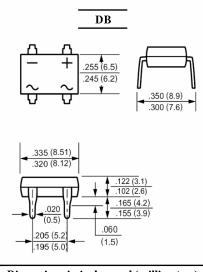
Case: Molded plastic, DB

• Epoxy: UL 94V-0 rate flame retardant

• Terminals: Leads solderable per MIL-STD-202,

method 208 guaranteed

Mounting position: Any



Dimensions in inches and (millimeters)

### **Absolute Maximum Ratings and Characteristics**

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter		Symbols	DB101	DB102	DB103	DB104	DB105	DB106	DB107	Units
Maximum Recurrent Peak Reverse Voltage		$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage		$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T <sub>A</sub> = 40 °C		I <sub>(AV)</sub>	1							Α
Peak Forward Surge Current 8.3 ms Single Half-sine-wave Superimposed on Rated Load (JEDEC Method)		I <sub>FSM</sub>	50						Α	
Maximum Forward Voltage at 1 A		$V_{F}$	1.1						V	
Maximum Reverse Current at Rated DC Blocking Voltage	at $T_A = 25$ °C at $T_A = 125$ °C	- I <sub>R</sub>	5 500				μA			
Typical Junction Capacitance 1)		CJ	25						pF	
Typical Thermal Resistance <sup>2)</sup>		$R_{\theta JA}$	40						°C/W	
Typical Thermal Resistance 2)		$R_{\theta JL}$	15						°C/W	
Operating and Storage Temperature Range		T <sub>J</sub> ,T <sub>S</sub>	-55 to +150						οС	

<sup>1)</sup> Measured at 1 MHz and applied reverse voltage of 4 V

<sup>&</sup>lt;sup>2)</sup> Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B with 0.5 X 0.5" (13 X 13 mm) copper pads.













Fig. 1 - Derating Curve Output Rectified Current Average Forward Output Current (A) 60 Hz Resistive or Inductive Load 0.5 0.51 x 0.51" (13 x 13mm) Copper pads with 0.06" (1.5mm) lead length 60 100 120 140 150 Ambient Temperature (°C)

Forward Surge Current Per Leg T<sub>J</sub> = 150°C Single Sine-Wave (JEDEC Method) 50 40 30

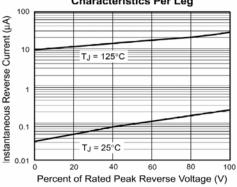
Fig. 2 - Maximum Non-Repetitive Peak

Average Forward Output Current (A) 20 10 0 10 Number of Cycles at 60 Hz

Fig. 3 - Typical Forward Characteristics Per Leg Instantaneous Forward Current (A) T<sub>J</sub> = 25°C Pulse width = 300μs 1% Duty Cycle 8.0 0.4 1.0 Instantaneous Forward Voltage (V)

Fig. 4 - Typical Reverse Leakage Characteristics Per Leg

100



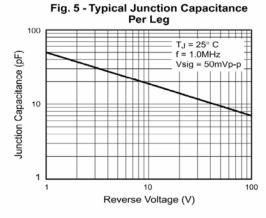
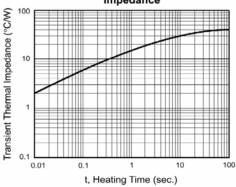


Fig. 6 - Typical Transient Thermal Impedance





# SEMTECH ELECTRONICS LTD.

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ISO/TS 16949 : 2002 ISO Certificate No. 05103 Certi