

**SINGLE-PHASE GLASS PASSIVATED  
MINI SUPER FAST SURFACE MOUNT BRIDGE RECTIFIER  
VOLTAGE RANGE 50 to 200 Volts CURRENT 0.5 Ampere**

**FEATURES**

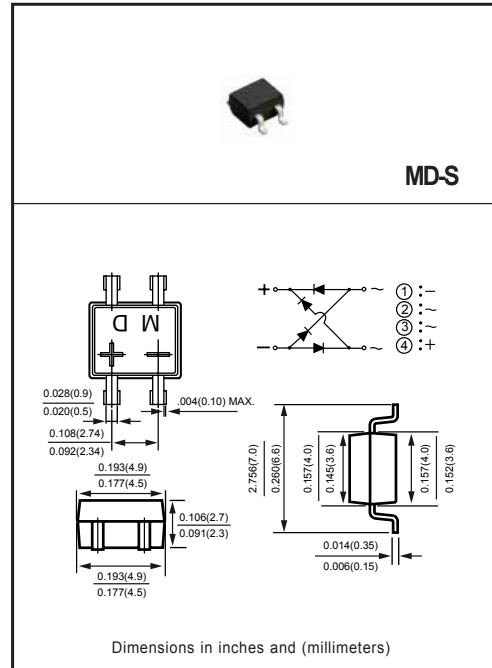
- \* Surge overload rating - 20 amperes peak
- \* Ideal for printed circuit board
- \* Reliable low cost construction utilizing molded
- \* Glass passivated device
- \* Polarity symbols molded on body
- \* Mounting position: Any
- \* Weight: 0.5 gram

**MECHANICAL DATA**

- \* Epoxy: Device has UL flammability classification 94V-O

**MAXIMUM RATINGS AND ELECTRICAL 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%.



**MAXIMUM RATINGS** (At  $T_A = 25^\circ\text{C}$  unless otherwise noted)

RATINGS	SYMBOL	EMD1S	EMD2S	EMD3S	EMD4S	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	Volts
Maximum RMS Bridge Input Voltage	$V_{RMS}$	35	70	105	140	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	Volts
Maximum Average Forward Output Current at $T_A = 30^\circ\text{C}$ -on glass-epoxy P.C.B. (Note 2) -on aluminum substrate (Note 3)	$I_O$	0.5 0.8				Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	20				Amps
Typical Junction Capacitance (Note 4)	$C_J$	15				pF
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150				$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS** (At  $T_A = 25^\circ\text{C}$  unless otherwise noted)

CHARACTERISTICS	SYMBOL	EMD1S	EMD2S	EMD3S	EMD4S	UNITS
Maximum Forward Voltage Drop per Bridge Element at 0.5A DC	$V_F$	1.05				Volts
Maximum Reverse Current at Rated	$I_R$	@ $T_A = 25^\circ\text{C}$ 10				$\mu\text{Amps}$
DC Blocking Voltage per element		@ $T_A = 125^\circ\text{C}$ 0.5				mAmps
Maximum Reverse Recovery Time (Note 5)	$t_{rr}$	50				nS

Note: 1. "Fully ROHS compliant", "100% Sn plating(Pb-free).

2. On glass-epoxy P.C.B. mounted on 0.05 X 0.05" (1.3 X 1.3mm) pads.

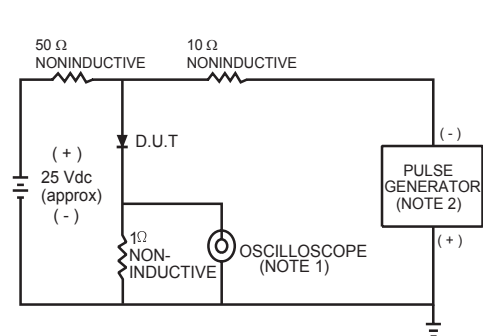
3. On aluminum substrate P.C.B. with an area of 0.8 X 0.8 X 0.25" (20 X 20 X 6.4mm) mounted on 0.05 X 0.05" (1.27 X 1.27mm) solder pad.

4. Measure at 1MHz and applied reverse voltage of 4.0 volts.

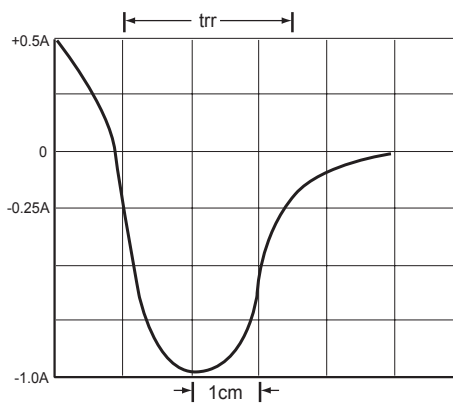
5. Test Condition :  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{RR} = -0.25\text{A}$ .

2007-08

## RATING AND CHARACTERISTICS CURVES ( EMD1S THRU EMD4S )



- NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF.  
 2. Rise Time = 10ns max. Source Impedance = 50 ohms.



SET TIME BASE FOR 20/1 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

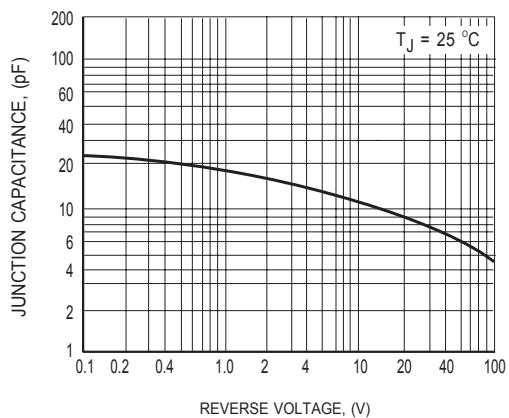


FIG.2 TYPICAL JUNCTION CAPACITANCE

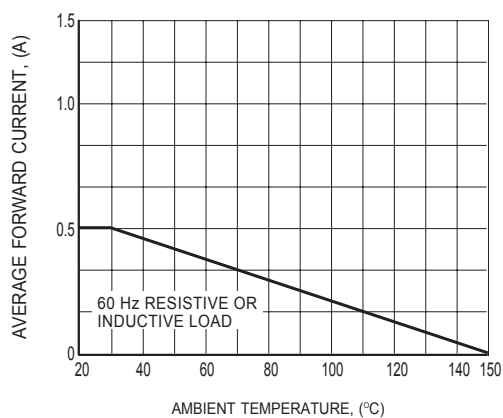
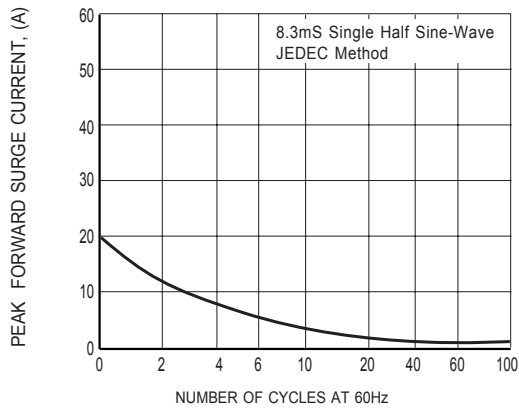
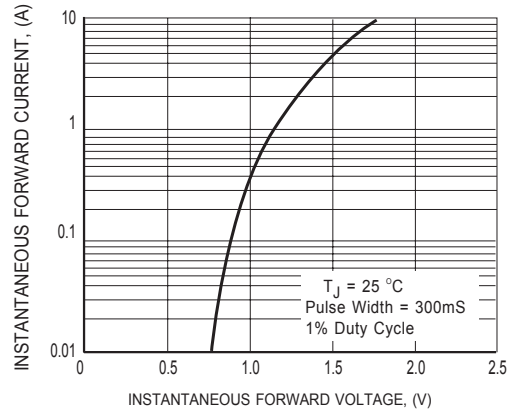


FIG.3 TYPICAL FORWARD CURRENT DERATING CURVE

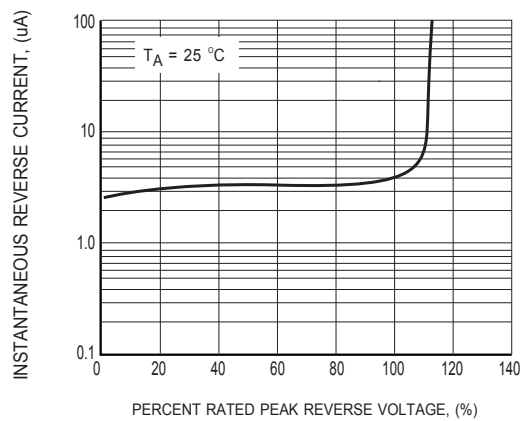
## RATING AND CHARACTERISTICS CURVES ( EMD1S THRU EMD4S )



**FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

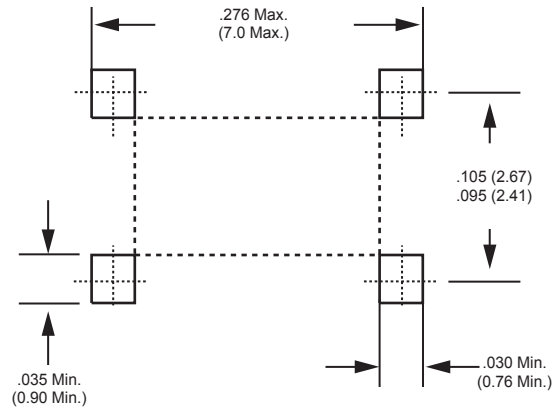


**FIG.5 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG.6 TYPICAL REVERSE CHARACTERISTICS**

## Mounting Pad Layout



Dimensions in inches and (millimeters)

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