

**SURFACE MOUNT GLASS PASSIVATED  
HIGH EFFICIENCY SILICON RECTIFIER  
VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Ampere**

**FEATURES**

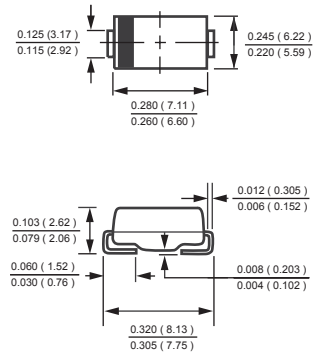
- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.24 gram

**MECHANICAL DATA**

- \* Epoxy: Device has UL flammability classification 94V-0



**DO-214AB**



Dimensions in inches and (millimeters)

**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 (@ TA=25 °C unless otherwise noted)**

| RATINGS   | SYMBOL          | HFM301       | HFM302 | HFM303 | HFM304 | HFM305 | HFM306 | HFM307 | HFM308 | UNITS |                    |
|---|-----------------|--------------|--------|--------|--------|--------|--------|--------|--------|-------|--------------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 50           | 100    | 200    | 300    | 400    | 600    | 800    | 1000   | Volts |                    |
| Maximum RMS Voltage   | $V_{RMS}$       | 35           | 70     | 140    | 210    | 280    | 420    | 490    | 700    | Volts |                    |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 50           | 100    | 200    | 300    | 400    | 600    | 800    | 1000   | Volts |                    |
| Maximum Average Forward Rectified Current at $T_A = 50^\circ\text{C}$                             | $I_O$           | 3.0          |        |        |        |        |        |        |        | Amps  |                    |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       | 200          |        |        |        | 150    |        |        | Amps   |       |                    |
| Typical Thermal Resistance (Note 1)   | $R_{\theta JL}$ | 15           |        |        |        |        |        |        |        |       | $^\circ\text{C/W}$ |
| Typical Thermal Resistance (Note 1)   | $R_{\theta JA}$ | 60           |        |        |        |        |        |        |        |       | $^\circ\text{C/W}$ |
| Typical Junction Capacitance (Note 2)   | $C_J$           | 70           |        |        |        | 50     |        |        |        | pF    |                    |
| Operating Temperature Range   | $T_J$           | 150          |        |        |        |        |        |        |        |       | $^\circ\text{C}$   |
| Storage Temperature Range   | $T_{STG}$       | -55 to + 150 |        |        |        |        |        |        |        |       | $^\circ\text{C}$   |

**ELECTRICAL CHARACTERISTICS (@TA=25 °C unless otherwise noted)**

| CHARACTERISTICS  | SYMBOL   | HFM301 | HFM302 | HFM303 | HFM304 | HFM305 | HFM306 | HFM307 | HFM308 | UNITS |               |
|--|----------|--------|--------|--------|--------|--------|--------|--------|--------|-------|---------------|
| Maximum Instantaneous Forward Voltage at 3.0A DC                               | $V_F$    | 1.0    |        | 1.3    |        | 1.7    |        |        | Volts  |       |               |
| Maximum Full Load Reverse Current, Full cycle Average $T_A = 55^\circ\text{C}$ | $I_R$    | 50     |        |        |        |        |        |        |        |       | $\mu\text{A}$ |
| Maximum Average Reverse Current @ $T_A = 25^\circ\text{C}$                     |          | 5      |        |        |        |        |        |        |        |       | $\mu\text{A}$ |
| at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$                       |          | 150    |        |        |        |        |        |        |        |       | $\mu\text{A}$ |
| Maximum Reverse Recovery Time (Note 4)   | $t_{rr}$ | 50     |        |        |        |        | 75     |        |        | nSec  |               |

- NOTES : 1. Thermal Resistance : Mounted on PCB.  
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".  
4. Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{RR} = -0.25\text{A}$ .

## RATING AND CHARACTERISTICS CURVES ( HFM301 THRU HFM308 )

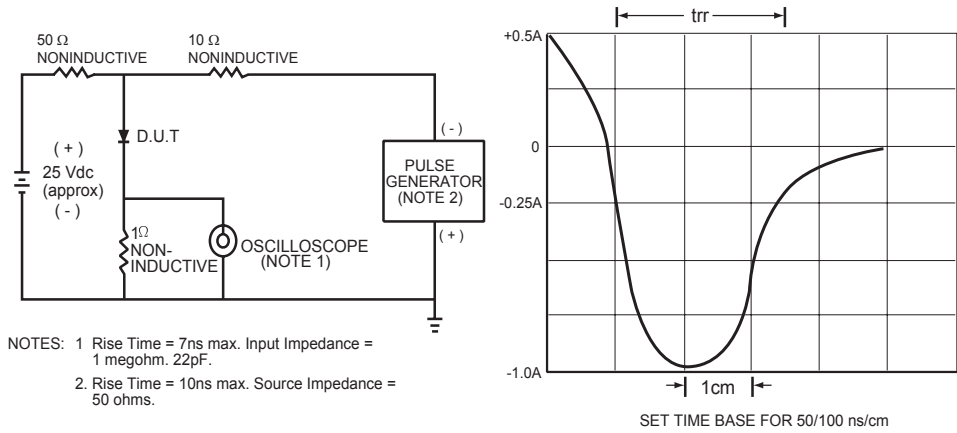


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

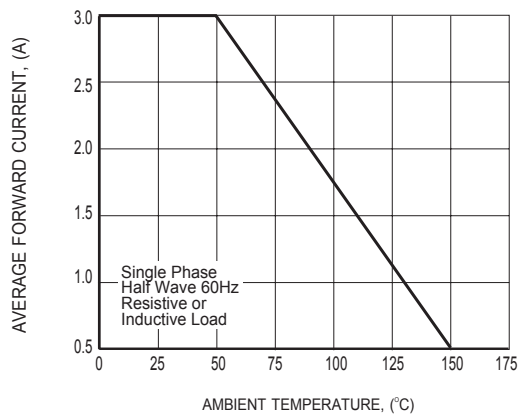


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

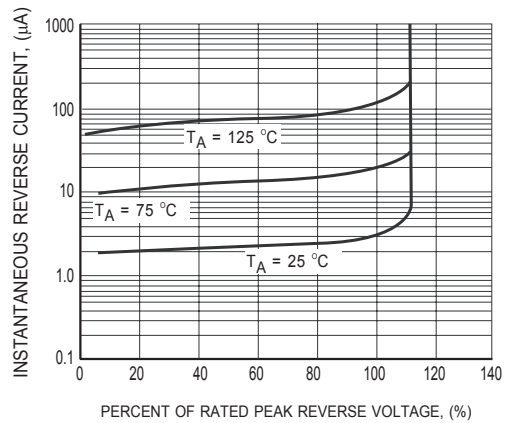
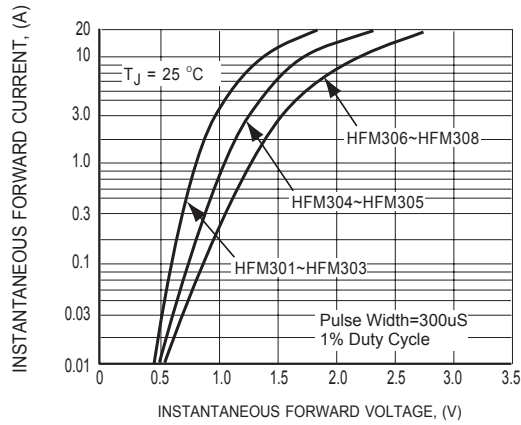
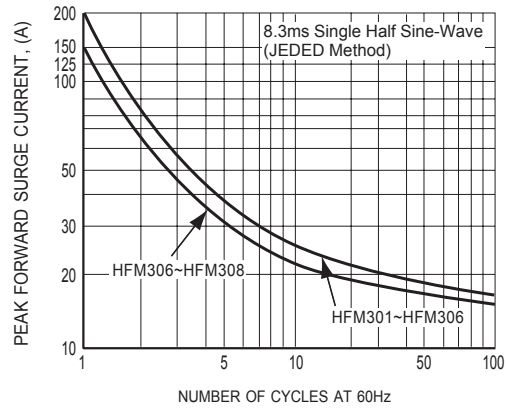


FIG.3 TYPICAL REVERSE CHARACTERISTICS

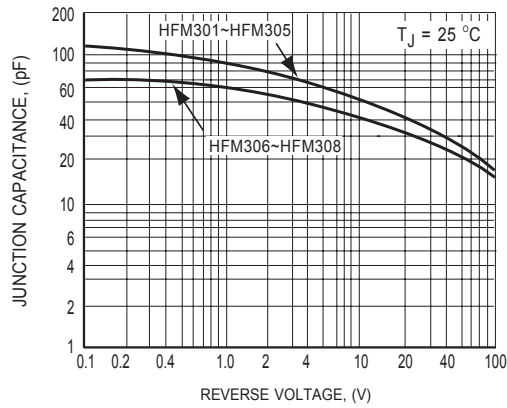
## RATING AND CHARACTERISTICS CURVES ( HFM301 THRU HFM308 )



**FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

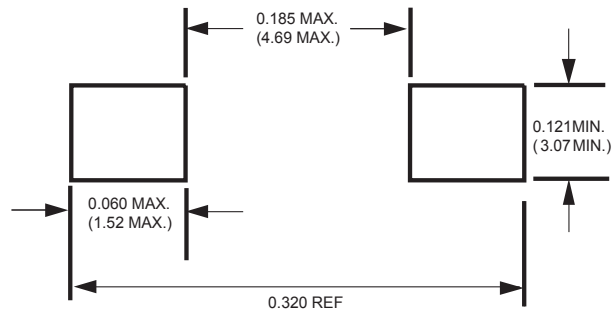


**FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.6 TYPICAL JUNCTION CAPACITANCE**

## Mounting Pad Layout



Dimensions in inches and (millimeters)