# WILLAS

**HFM101 THRU HFM108**

## *SURFACE MOUNT GLASS PASSIVATED HIGH EFFICIENCY SILICON RECTIFIER*

***VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere***

### FEATURES

* Glass passivated device
* Ideal for surface mounted applications
* Low leakage current
* Metallurgically bonded construction
* Mounting position: Any
* Weight: 0.066 gram
* RoHS product for packing code suffix "G"
  Halogen free product for packing code suffix "H"

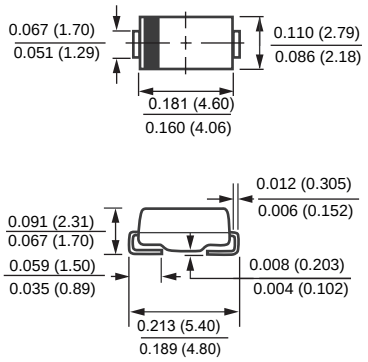
### MECHANICAL DATA

* 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%.

**SMA/DO-214AC**




Dimensions in inches and (millimeters)

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

| RATINGS | SYMBOL | HFM101 | HFM102 | HFM103 | HFM104 | HFM105 | HFM106 | HFM107 | HFM108 | 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°C | $I_O$ | 1.0 | | | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 30 | | | | | | | | Amps |
| Typical Thermal Resistance (Note 1) | $R_{\theta JL}$ | 27 | | | | | | | | °C/W |
| Typical Thermal Resistance (Note 1) | $R_{\theta JA}$ | 75 | | | | | | | | °C/W |
| Typical Junction Capacitance (Note 2) | $C_J$ | 15 | | | | | 12 | | | pF |
| Operating Temperature Range | $T_J$ | -65 to + 175 | | | | | | | | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to + 175 | | | | | | | | °C |

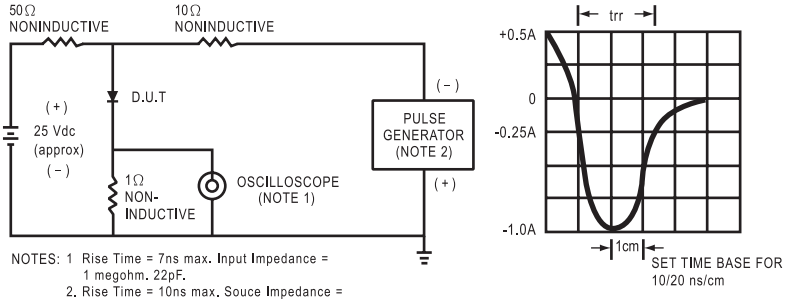
**ELECTRICAL CHARACTERISTICS**(@TA=25 °C unless otherwise noted)

| CHARACTERISTICS | | SYMBOL | HFM101 | HFM102 | HFM103 | HFM104 | HFM105 | HFM106 | HFM107 | HFM108 | UNITS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage at 1.0A DC | | $V_F$ | 1.0 | | | 1.3 | | 1.7 | | | Volts |
| Maximum Full Load Reverse Current, Full cycle Average $T_A$ =55°C | | $I_R$ | 50 | | | | | | | | μA |
| Maximum Average Reverse Current | @$T_A$ = 25°C | | 5 | | | | | | | | μA |
| at Rated DC Blocking Voltage | @$T_A$ = 125°C | | 100 | | | | | | | | μA |
| Maximum Reverse Recovery Time (Note 4) | | trr | 50 | | | | | 75 | | | nSec |

NOTES : 1. Thermal Resistance : Mounted on PCB.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Test Conditions: $I_F$= 0.5A, $I_R$= -1.0A, $I_{RR}$= -0.25A.

# RATING AND CHARACTERISTIC CURVES ( HFM101 THRU HFM108 )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC




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

FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

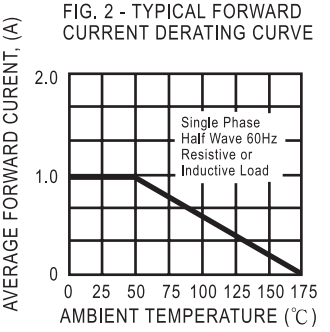



FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

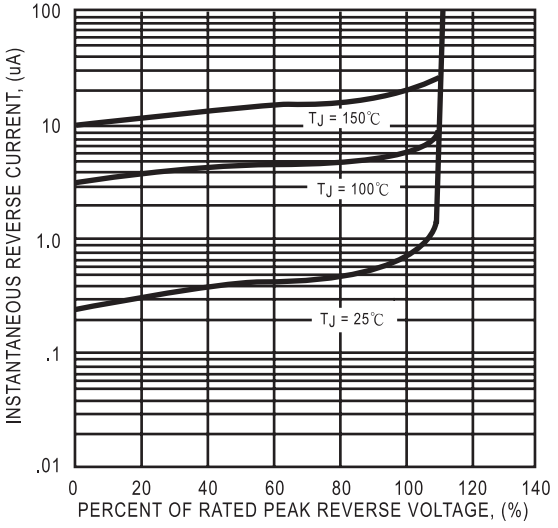



FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

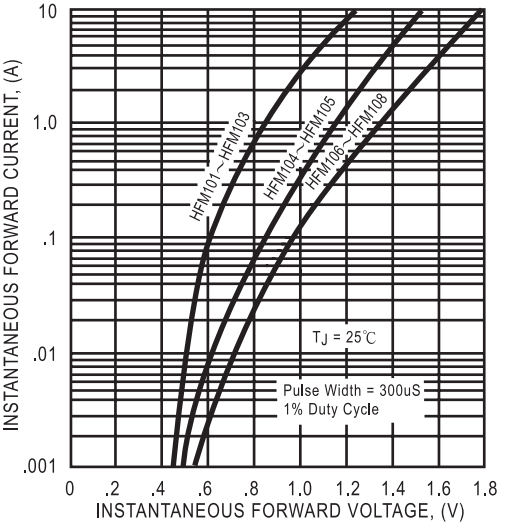



FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

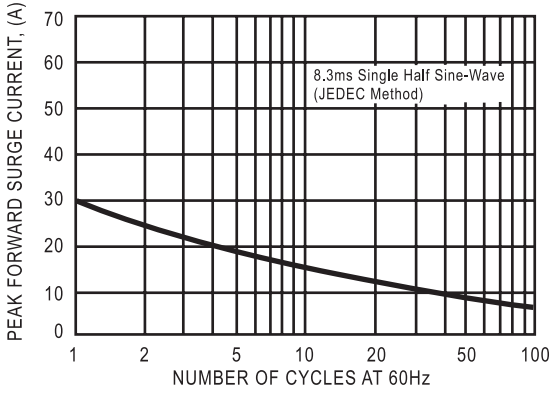



FIG. 6 - TYPICAL JUNCTION CAPACITANCE