

**SURFACE MOUNT  
HIGH EFFICIENCY SILICON RECTIFIER  
VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere**

**FEATURES**

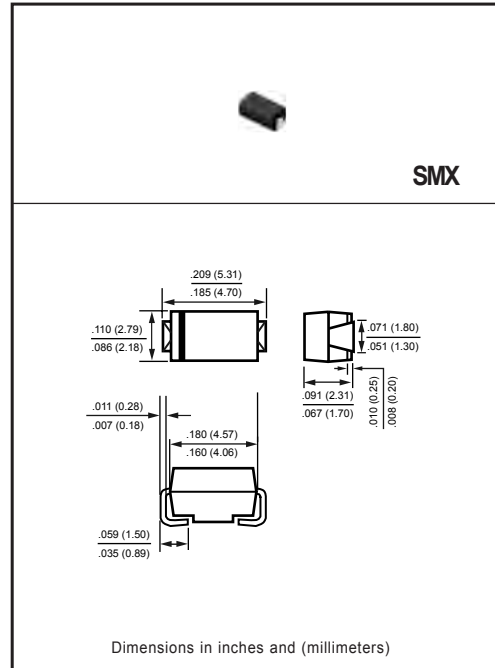
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.078 gram

**MECHANICAL DATA**

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

**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	HFM101W	HFM102W	HFM103W	HFM104W	HFM105W	HFM106W	HFM107W	HFM108W	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 $T_A = 50^\circ\text{C}$	$I_O$	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 Current Squared Time	$I^2t$	3.74								$\text{A}^2\text{S}$	
Typical Thermal Resistance (Note 1)	$R_{\theta JL}$	27								$^\circ\text{C}/\text{W}$	
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	75								$^\circ\text{C}/\text{W}$	
Typical Junction Capacitance (Note 2)	$C_J$	15					12				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	HFM101W	HFM102W	HFM103W	HFM104W	HFM105W	HFM106W	HFM107W	HFM108W	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 $T_A = 55^\circ\text{C}$	$I_R$	50								$\mu\text{A}$	
Maximum Average Reverse Current at Rated DC Blocking Voltage @ $T_A = 25^\circ\text{C}$		5								$\mu\text{A}$	
Maximum Average Reverse Current at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$		100								$\mu\text{A}$	
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 ( HFM101W THRU HFM108W )

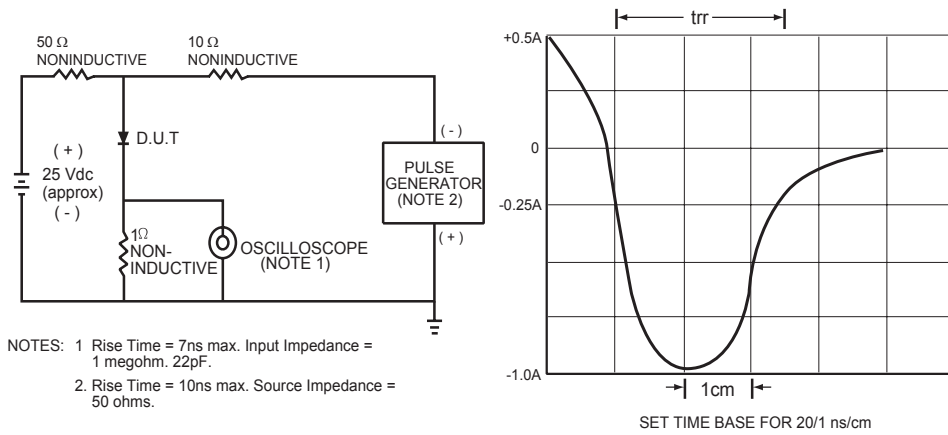


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

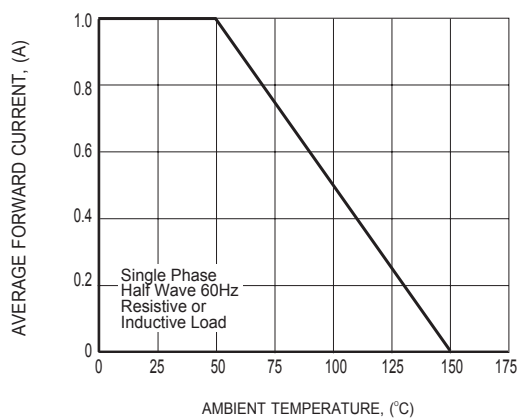


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

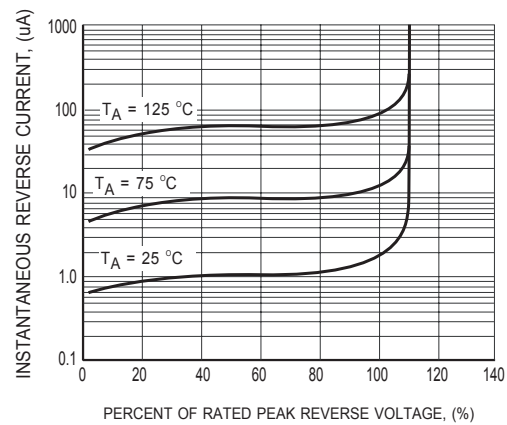
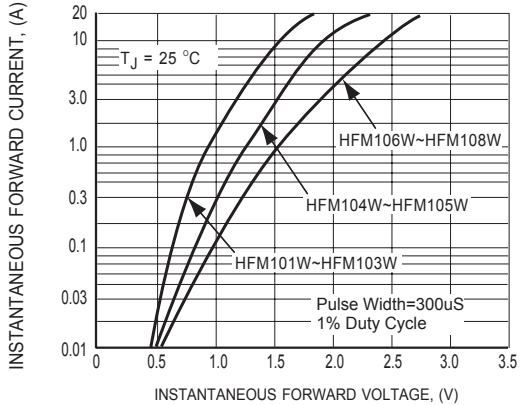
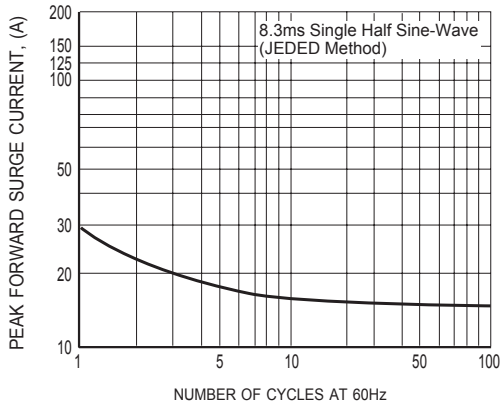


FIG.3 TYPICAL REVERSE CHARACTERISTICS

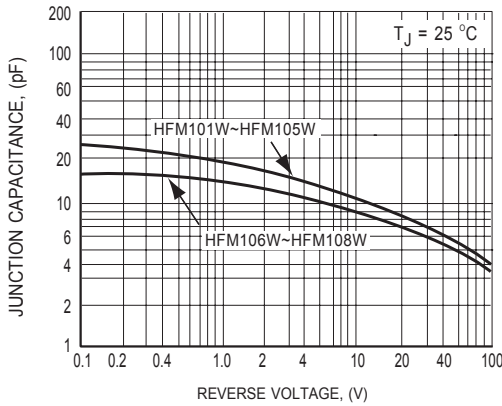
# RATING AND CHARACTERISTICS CURVES ( HFM101W THRU HFM108W )



**FIG.4 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS**

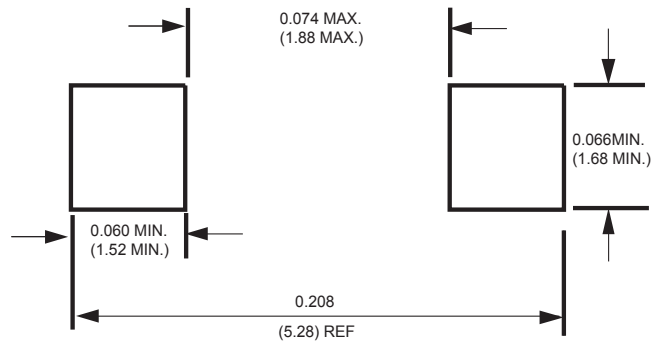


**FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



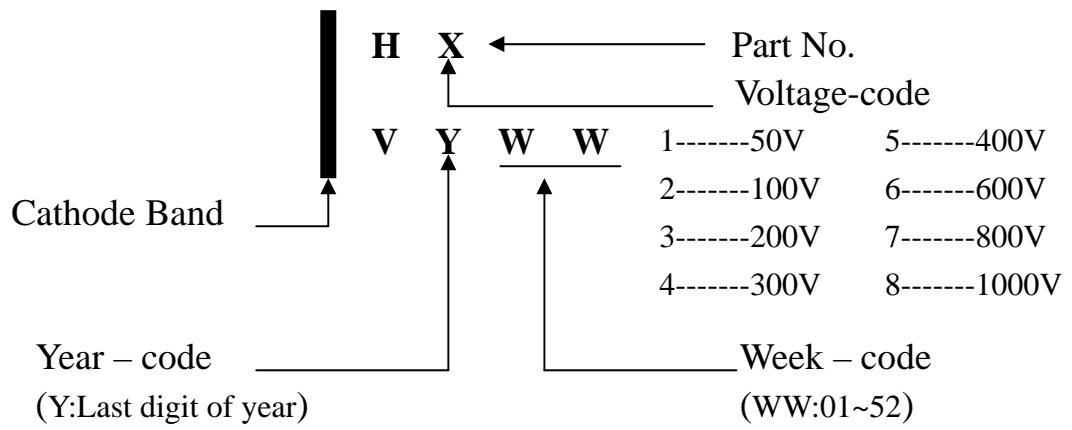
**FIG.6 TYPICAL JUNCTION CAPACITANCE**

## Mounting Pad Layout



Dimensions in inches and (millimeters)

## Marking Description



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMX	-T	1,500	6,000	---	---	178	390*205*310	48,000	---
SMX	-W	5,000	10,000	---	---	330	360*355*360	80,000	15.20

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