

**SURFACE MOUNT GLASS PASSIVATED  
 HIGH EFFICIENCY SILICON RECTIFIER**  
**VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere**

**FEATURES**

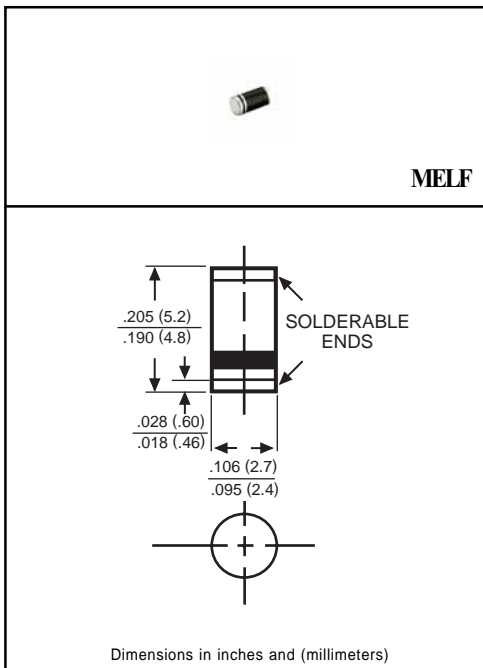
- \* Fast switching
- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Mounting position: Any
- \* Weight: 0.015 gram

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

RATINGS	SYMBOL	HSM101	HSM102	HSM103	HSM104	HSM105	HSM106	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	300	400	600	Volts
Maximum RMS Volts	V <sub>RMS</sub>	35	70	140	210	280	420	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	300	400	600	Volts
Maximum Average Forward Current at TA = 50°C	I <sub>O</sub>	1.0						Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	30						Amps
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	15				12		pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to + 175						°C

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

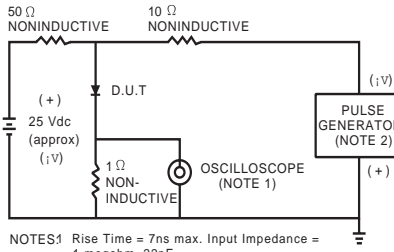
CHARACTERISTICS	SYMBOL	HSM101	HSM102	HSM103	HSM104	HSM105	HSM106	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC	V <sub>F</sub>	1.0			1.3		1.70	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C	I <sub>R</sub>	5.0						uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at TL = 55°C		100						uAmps
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	50				75		nSec

NOTES : 1. Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=-1.0A, I<sub>RR</sub>=-0.25A.

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

# RATING AND CHARACTERISTIC CURVES ( HSM101 THRU HSM106 )

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. Source Impedance = 50 ohms.

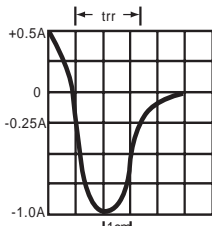


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

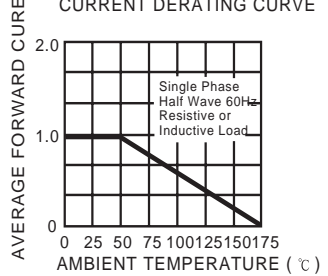


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

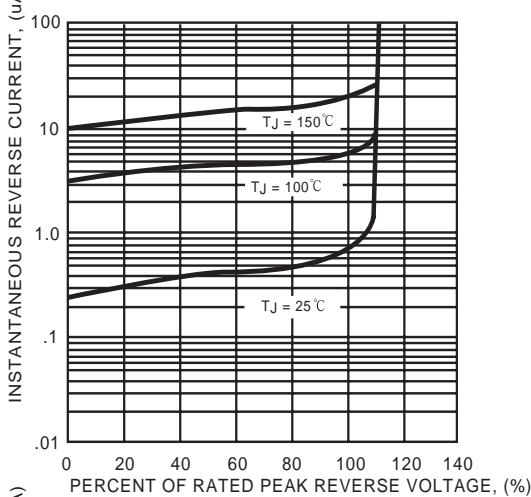


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

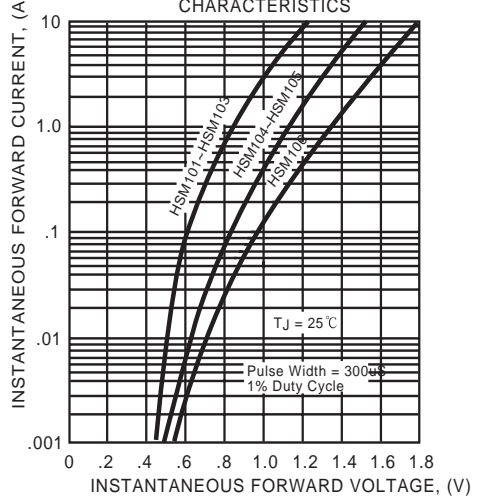


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

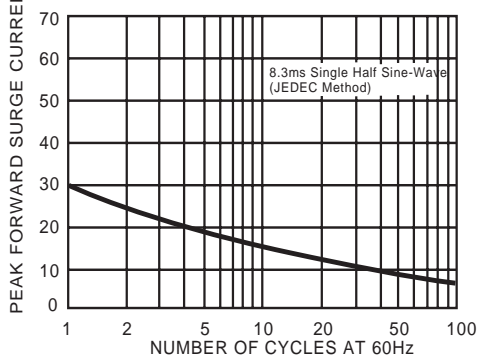
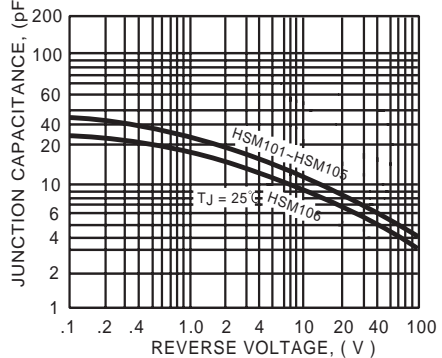
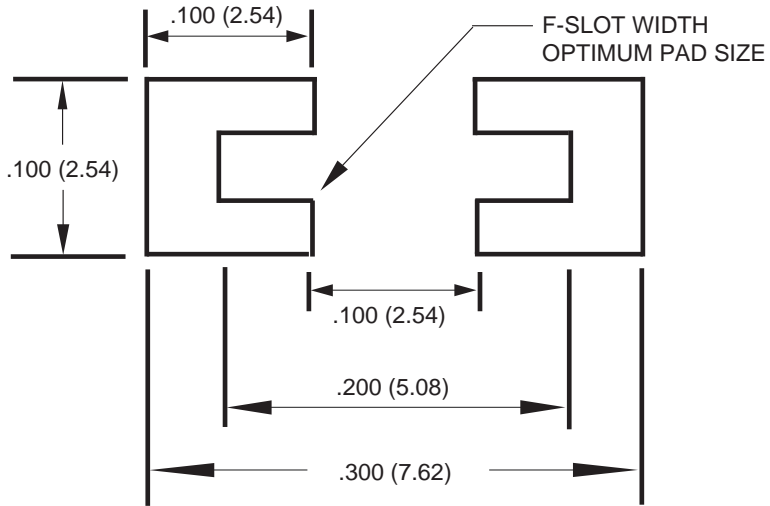


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



## Mounting Pad Layout



Dimensions in inches and (millimeters)