



# CHENMKO ENTERPRISE CO.,LTD

## SURFACE MOUNT GLASS PASSIVATED HIGH EFFICIENCY SILICON RECTIFIER

VOLTAGE RANGE 50 - 1000 Volts CURRENT 3.0 Amperes

**HBM31PT**

**THRU**

**HBM38PT**

Lead free devices

### FEATURES

- \* For surface mounted applications
- \* Low forward voltage, high current capability
- \* Low leakage current
- \* Metallurgically bonded construction
- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* Glass passivated junction
- \* High temperature soldering guaranteed : 260°C/10 seconds at terminals

### MECHANICAL DATA

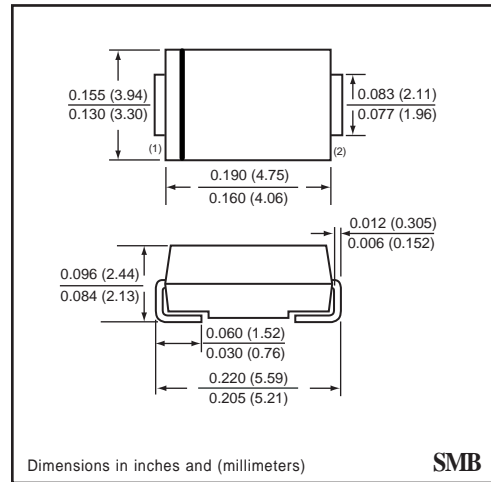
**Case:** JEDEC SMB molded plastic  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity:** Indicated by cathode band  
**Weight:** 0.003 ounces, 0.093 gram

### 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%.



SMB



Dimensions in inches and (millimeters)

SMB

### MAXIMUM RATINGS ( At TA = 25°C unless otherwise noted )

RATINGS	SYMBOL	HBM31PT	HBM32PT	HBM33PT	HBM34PT	HBM35PT	HBM36PT	HBM37PT	HBM38PT	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	300	400	600	800	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	210	280	420	560	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	300	400	600	800	1000	Volts
Maximum Average Forward Rectified Current T <sub>L</sub> = 90°C	I <sub>o</sub>	3.0								Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	90								Amps
Typical Junction Capacitance (Note 1)	C <sub>J</sub>	70				50				pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150								°C

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

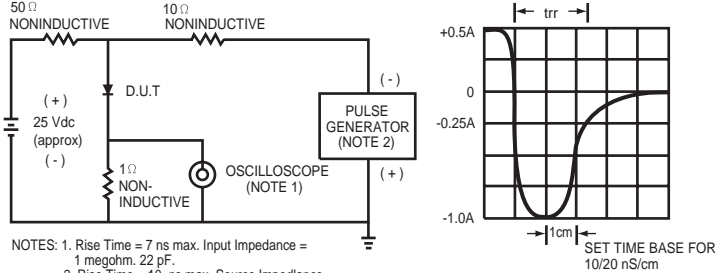
CHARACTERISTICS	SYMBOL	HBM31PT	HBM32PT	HBM33PT	HBM34PT	HBM35PT	HBM36PT	HBM37PT	HBM38PT	UNITS
Maximum Instantaneous Forward Voltage at 3.0 A DC	V <sub>F</sub>	1.0		1.3		1.5		1.7		Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage at TA = 25°C	I <sub>R</sub>	5.0								uAmps
Maximum Full Load Reverse Current Average, Full Cycle at TA = 55°C		100								uAmps
Maximum Reverse Recovery Time (Note 2)	t <sub>rr</sub>	50				70				nSec

NOTES : 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts  
 2. Test Conditions : I<sub>F</sub> = 0.5 A, I<sub>R</sub> = -1.0 A, I<sub>RR</sub> = -0.25 A

2002-5

# RATING CHARACTERISTIC CURVES ( HBM31PT THRU HBM38PT )

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



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

FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

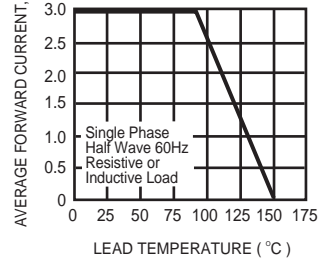


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

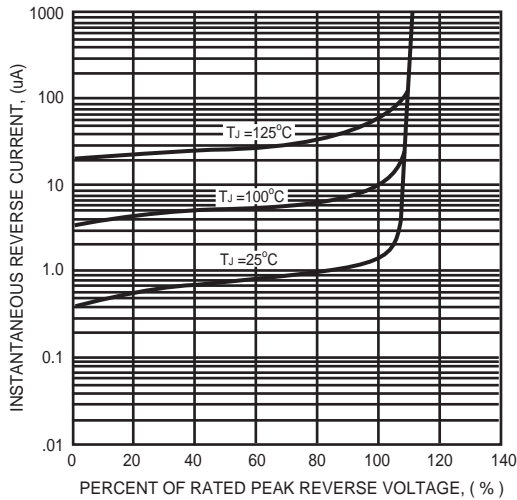


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

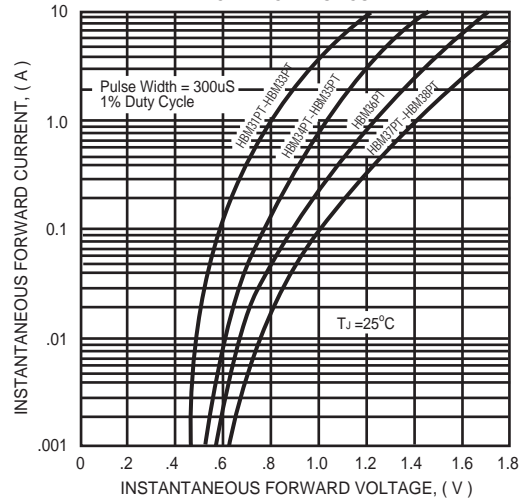


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

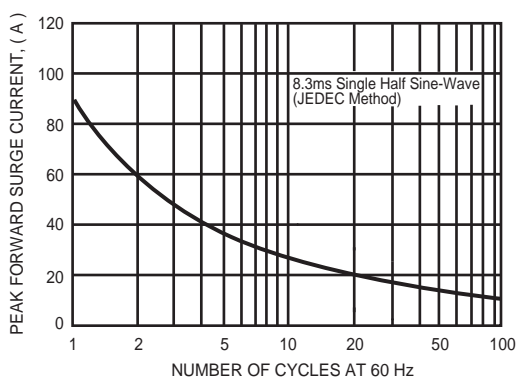


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

