

**SURFACE MOUNT  
HIGH EFFICIENCY RECTIFIER  
VOLTAGE RANGE 1200 Volts CURRENT 1.0 Ampere**

**FEATURES**

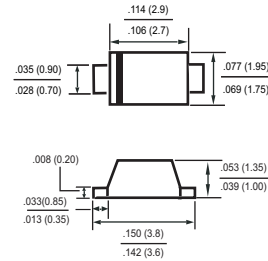
- \* Low power loss, high efficiency
- \* Low leakage
- \* Low forward voltage
- \* High current capability
- \* High speed switching
- \* High surge capability
- \* High reliability

**MECHANICAL DATA**

- \* Epoxy: Device has UL flammability classification 94V-O
- \* Mounting position: Any



SOD-123F



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	SH9	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1200	Volts
Maximum RMS Voltage	$V_{RMS}$	840	Volts
Maximum DC Blocking Voltage	$V_{DC}$	1200	Volts
Maximum Average Forward Rectified Current at $T_A = 75^\circ\text{C}$	$I_O$	1.0	Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	25	Amps
Current Squarad Time	$I^2t$	2.6	$\text{A}^2/\text{Sec}$
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	180	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance (Note 1)	$R_{\theta JC}$	20	$^\circ\text{C}/\text{W}$
Typical Junction Capacitance (Note 2)	$C_J$	10	pF
Operating Temperature Range	$T_J$	-55 to + 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	SH9	UNITS	
Maximum Instantaneous Forward Voltage at 1.0A DC	$V_F$	1.7	Volts	
Maximum Average Reverse Current at Rated DC Blocking Voltage	$I_R$	@ $T_A = 25^\circ\text{C}$	5	$\mu\text{A}$
		@ $T_A = 125^\circ\text{C}$	100	$\mu\text{A}$
Maximum Reverse Recovery Time (Note 3)	$t_{rr}$	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:  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{RR} = -0.25\text{A}$ .

## RATING AND CHARACTERISTICS CURVES (SH9)

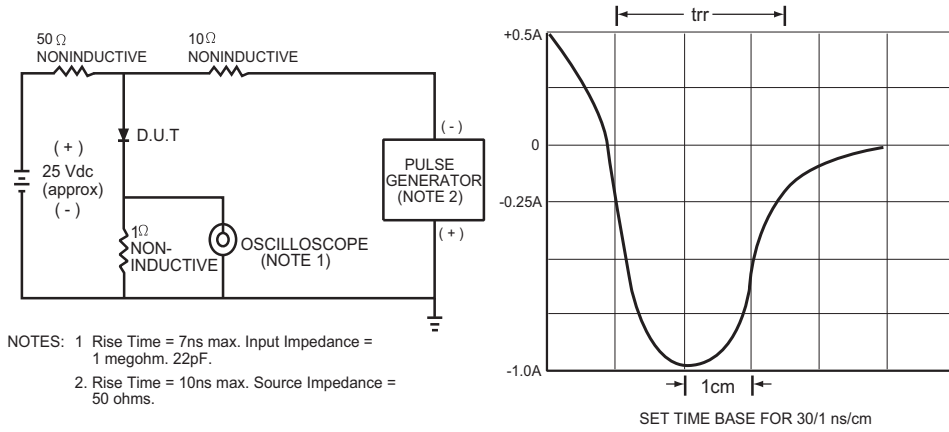


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

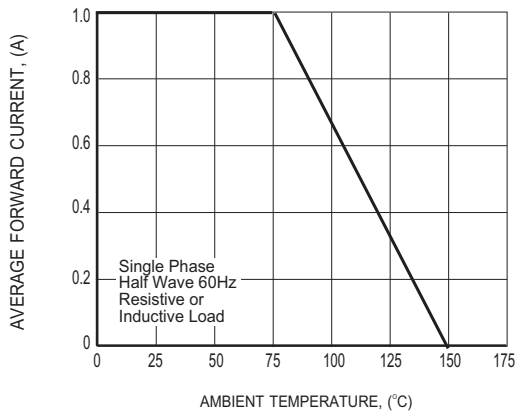


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

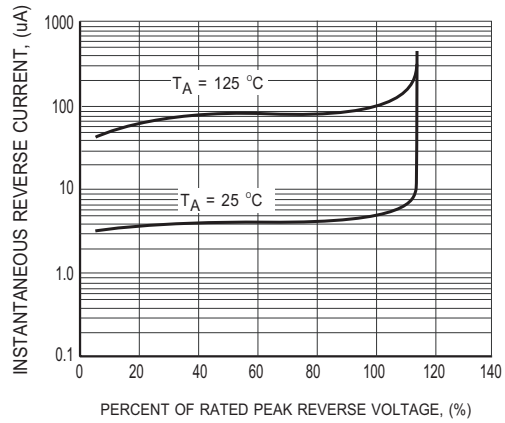
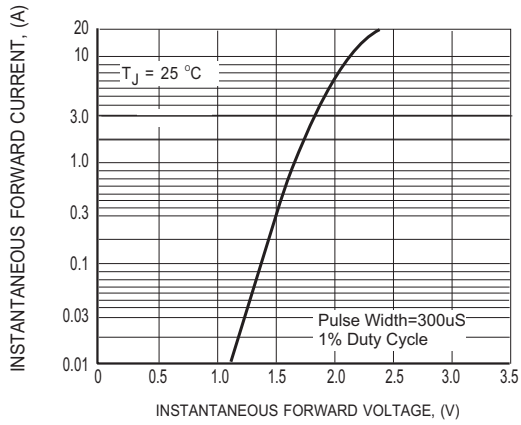
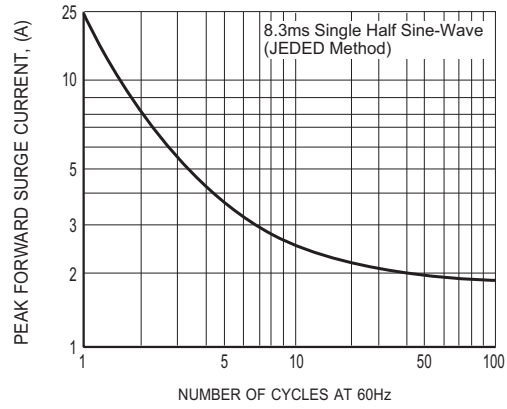


FIG.3 MAXIMUM REVERSE CHARACTERISTICS

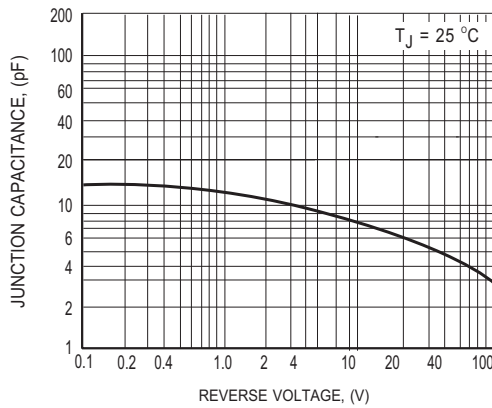
## RATING AND CHARACTERISTICS CURVES (SH9)



**FIG.4 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS**

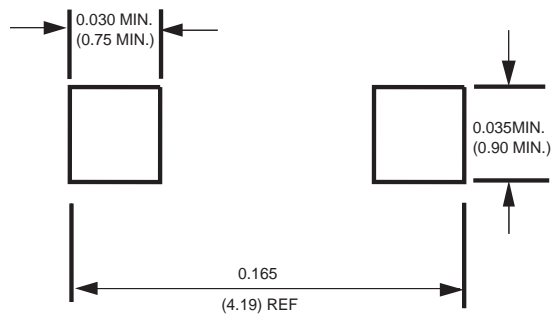


**FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.6 TYPICAL JUNCTION CAPACITANCE**

## Mounting Pad Layout



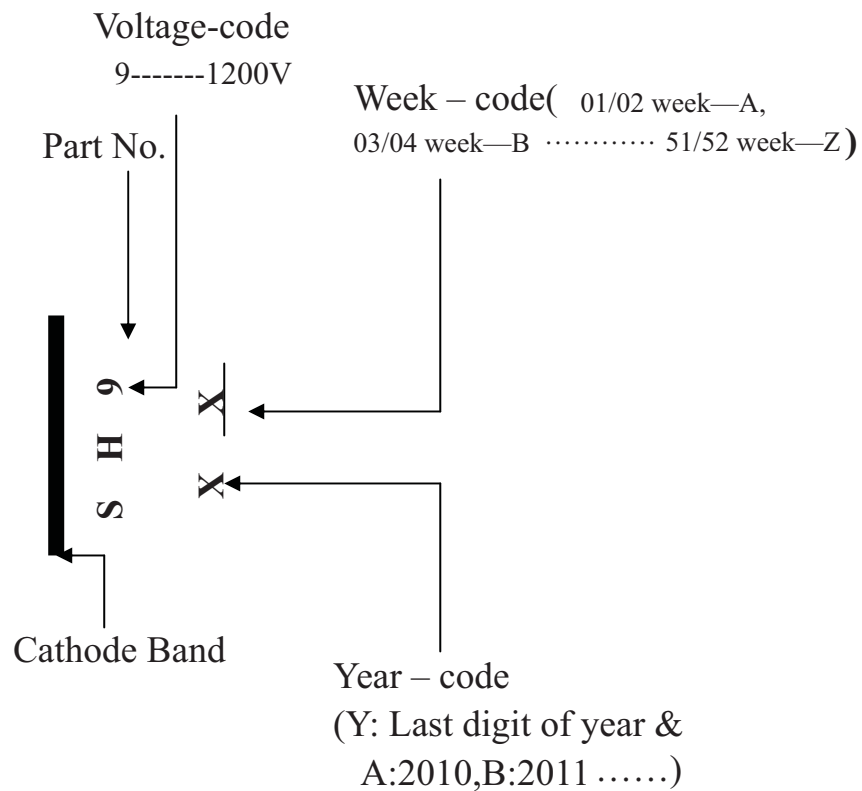
Dimensions in inches and (millimeters)



## 1. Internal Circuit



## 2. Marking on the body



## 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)
SOD-123F/ SOD-123FL	-W	3,000	15,000	---	---	178	390*205*31	120,000	6.964

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