

**SURFACE MOUNT HIGH EFFICIENCY RECTIFIER**

VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere

**FEATURES**

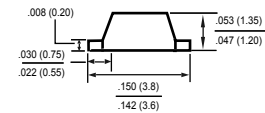
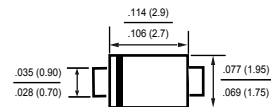
- \* Low power loss, high efficiency
- \* Low leakage
- \* Low forward voltage
- \* High current capability
- \* High speed switching
- \* High surge capability
- \* High reliability

**MECHANICAL DATA**

- \* Epoxy: Device has UL flammability classification 94V-0
- \* Mounting position: Any
- \* Weight: 0.016 gram

NEW RELEASE

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	SH1	SH2	SH3	SH4	SH5	SH6	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	300	400	600	Volts
Maximum RMS Voltage	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 Rectified Current at T <sub>A</sub> = 55°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>	20						Amps
Typical Thermal Resistance (Note 1)	R <sub>θJA</sub>	130						°C/W
Typical Thermal Resistance (Note 1)	R <sub>θJL</sub>	30						°C/W
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	15					12	pF
Operating Temperature Range	T <sub>J</sub>	150						°C
Storage Temperature Range	T <sub>STG</sub>	-55 to + 150						°C

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

CHARACTERISTICS	SYMBOL	SH1	SH2	SH3	SH4	SH5	SH6	UNITS	
Maximum Instantaneous Forward Voltage at 1.0A DC	V <sub>F</sub>	1.0			1.3		1.7	Volts	
Maximum Average Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>	@ T <sub>A</sub> = 25°C	5						μA
		@ T <sub>A</sub> = 100°C	100						μA
Maximum Reverse Recovery Time (Note 4)	t <sub>rr</sub>	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<sub>F</sub>= 0.5A, I<sub>R</sub>= -1.0A, I<sub>RR</sub>= -0.25A.

## RATING AND CHARACTERISTICS CURVES ( SH1 THRU SH6 )

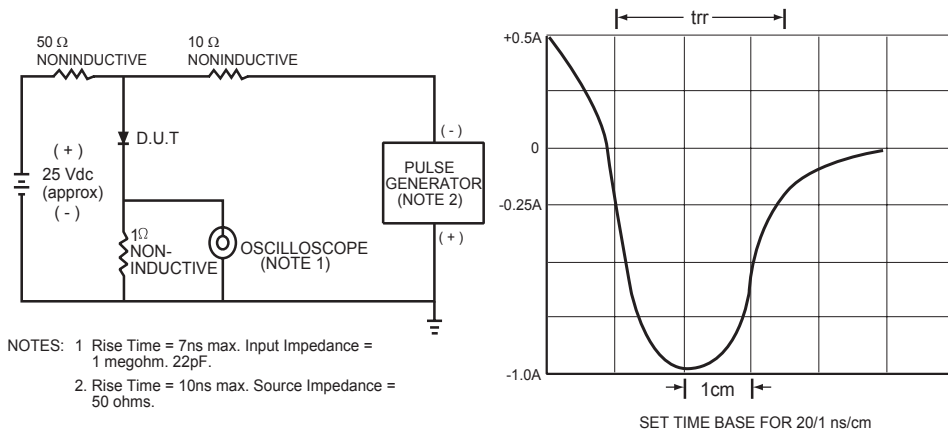


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

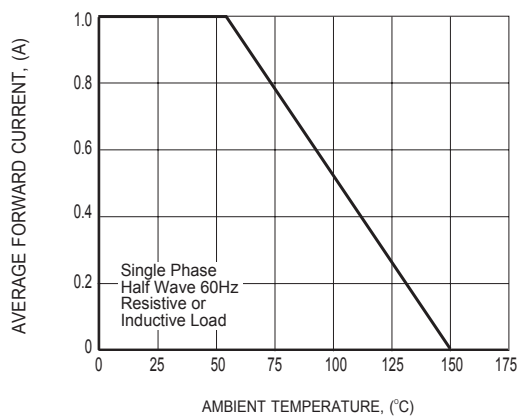


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

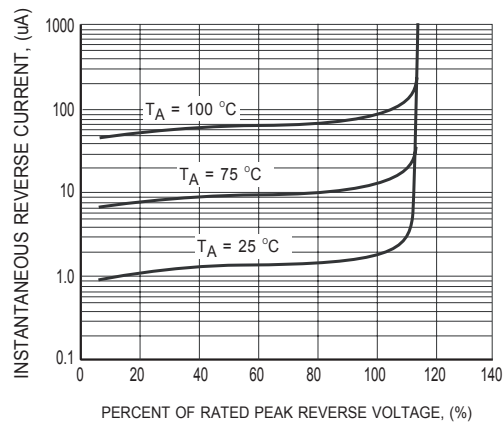


FIG.3 TYPICAL REVERSE CHARACTERISTICS

## RATING AND CHARACTERISTICS CURVES ( SH1 THRU SH6 )

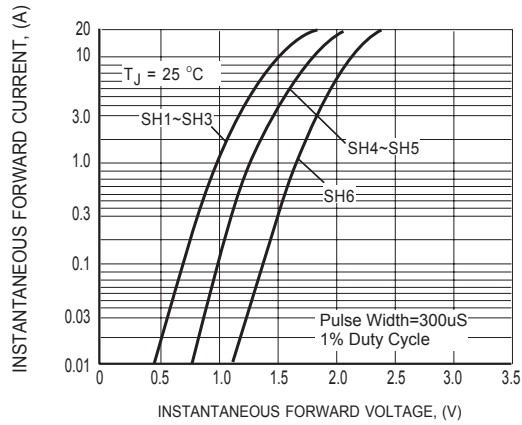


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

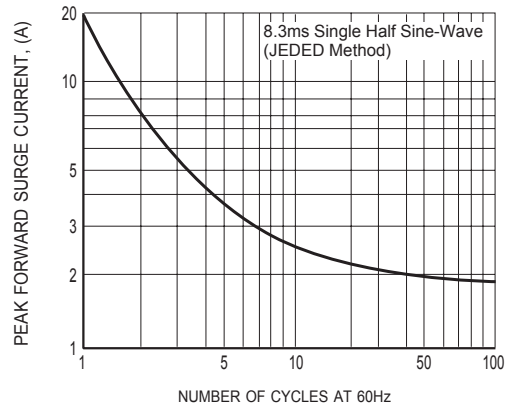


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

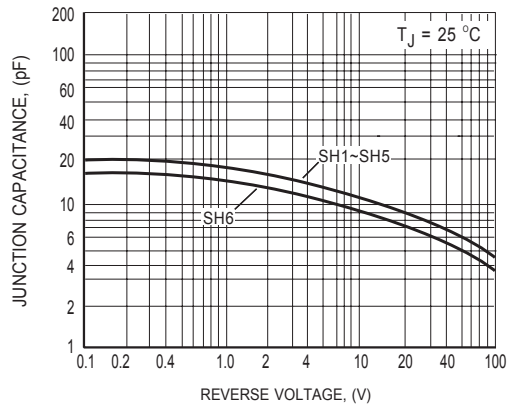
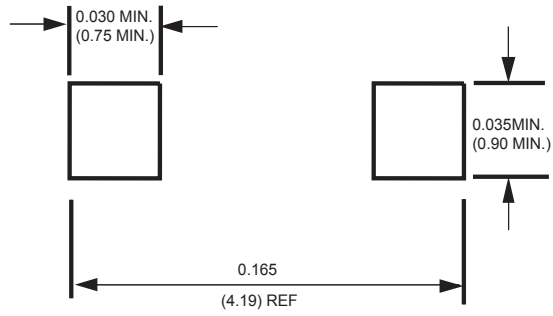


FIG.6 TYPICAL JUNCTION CAPACITANCE

## Mounting Pad Layout



Dimensions in inches and (millimeters)

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