

**SURFACE MOUNT FAST RECOVERY RECTIFIER**

**VOLTAGE RANGE 50 to 600 Volts CURRENT 0.5 Ampere**

**FEATURES**

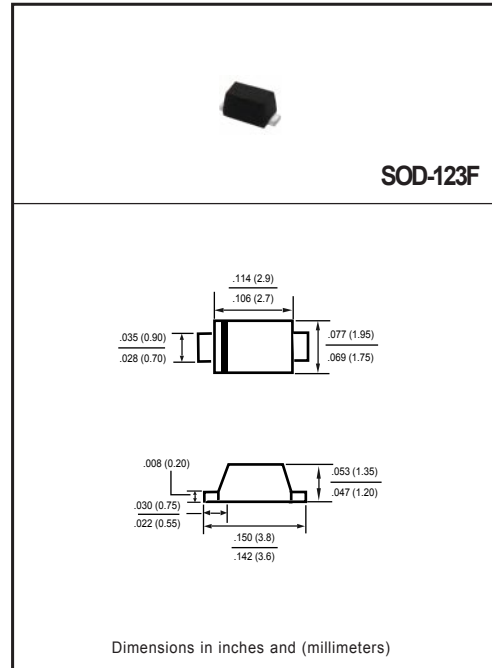
- \* Fast switching
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* High current surge
- \* High reliability

**MECHANICAL DATA**

- \* Epoxy: Device has UL flammability classification 94V-O
- \* Mounting position: Any
- \* Weight: 0.016 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%.



**MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)**

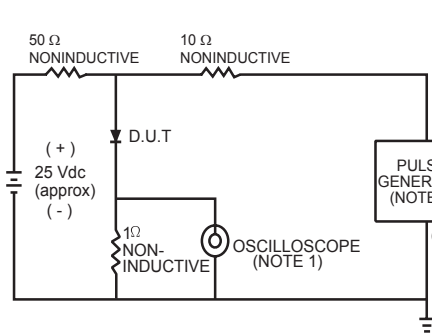
RATINGS	SYMBOL	05F1	05F2	05F3	05F4	05F5	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	Volts
Maximum Average Forward Rectified Current at T <sub>A</sub> = 55°C	I <sub>O</sub>	0.5					Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	15					Amps
Typical Thermal Resistance (Note 4)	R <sub>θJA</sub>	32					°C/W
	R <sub>θJL</sub>	150					
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	15					pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150					°C

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

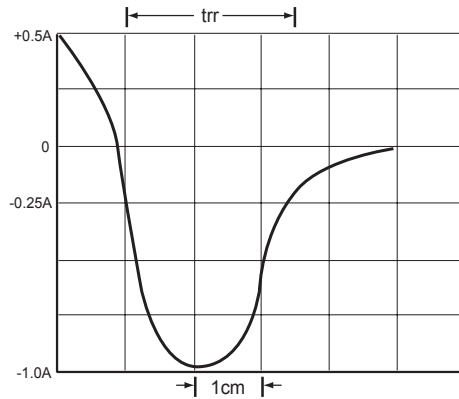
CHARACTERISTICS	SYMBOL	05F1	05F2	05F3	05F4	05F5	UNITS
Maximum Instantaneous Forward Voltage at 0.5ADC	V <sub>F</sub>	1.3					Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T <sub>A</sub> = 25°C	I <sub>R</sub>	2.0					μAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T <sub>L</sub> = 55°C		100					μAmps
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	150				250	nSec

- NOTES : 1. Reverse Recovery 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  
3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".  
4. Thermal Resistance : Mounted on PCB.

## RATING AND CHARACTERISTICS CURVES ( 05F1 THRU 05F5 )



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



SET TIME BASE FOR 50/100 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

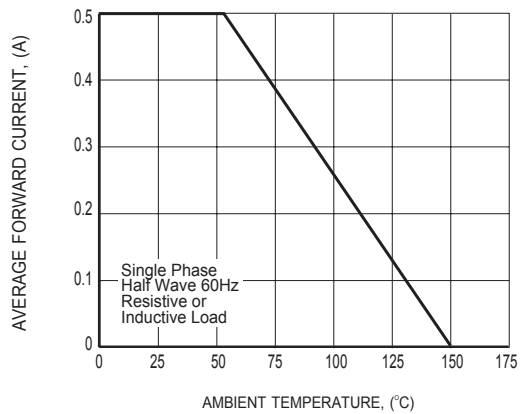


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

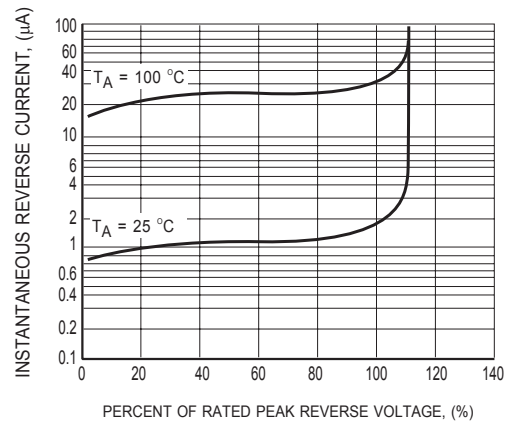
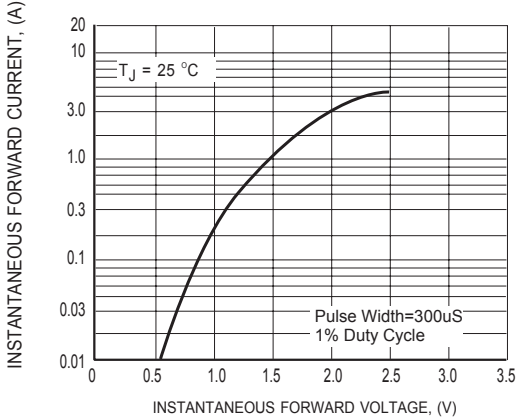
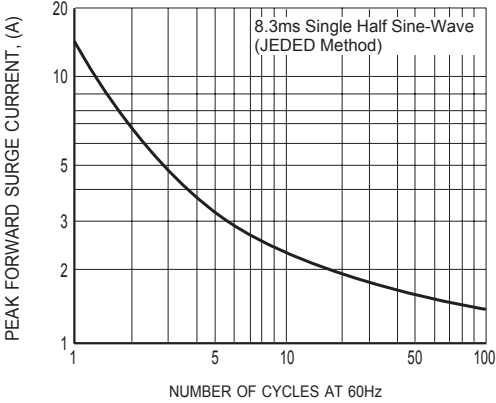


FIG.3 TYPICAL REVERSE CHARACTERISTICS

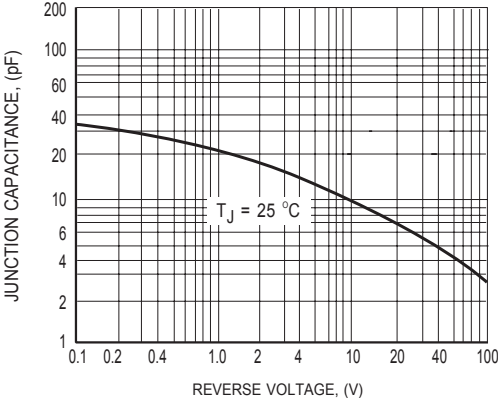
# RATING AND CHARACTERISTICS CURVES ( 05F1 THRU 05F5 )



**FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

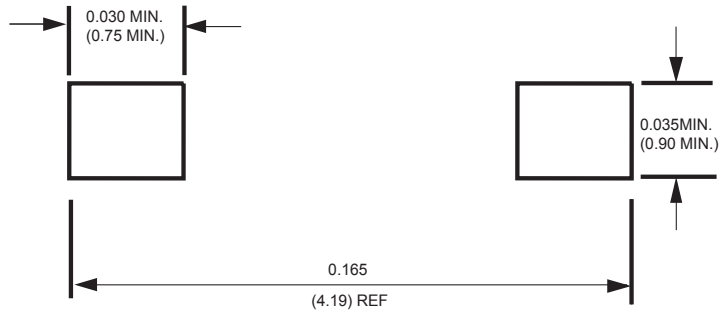


**FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.6 TYPICAL JUNCTION CAPACITANCE**

## Mounting Pad Layout



Dimensions in inches and (millimeters)

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