RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

05F1 THRU 05F5

SURFACE MOUNT FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 600 Volts CURRENT 0.5 Ampere

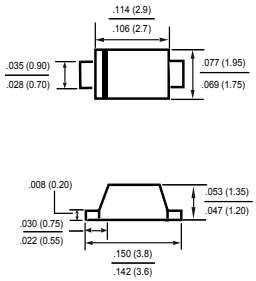
FEATURES

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

MECHANICAL DATA

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

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	05F1	05F2	05F3	05F4	05F5	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	Volts
Maximum Average Forward Rectified Current at T_A = 55°C	I_O	0.5					Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	15					Amps
Typical Thermal Resistance (Note 4)	$R_{\theta JA}$	32					°C/W
	$R_{\theta JL}$	150					
Typical Junction Capacitance (Note 2)	C_J	15					pF
Operating and Storage Temperature Range	T_J, T_{STG}	-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 0.5A DC	V_F	1.3					Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	2.0					µAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T_L = 55°C		100					µAmps
Maximum Reverse Recovery Time (Note 1)	trr	150				250	nSec

NOTES : 1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = -1.0A, I_{RR} = -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.

2006-12

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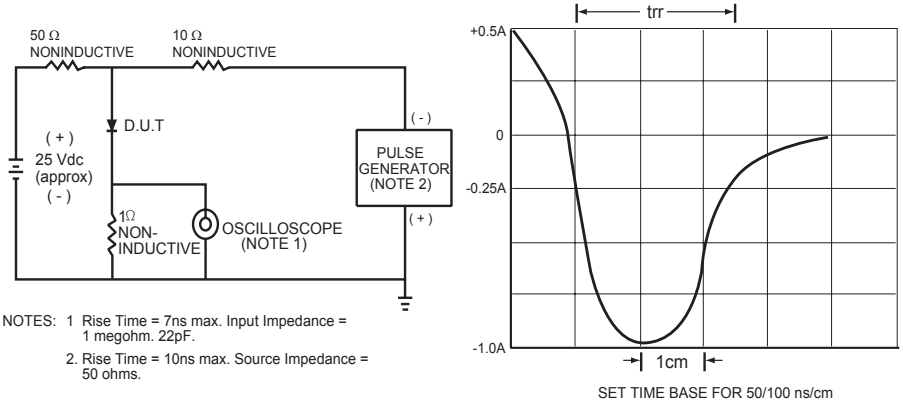
RATING AND CHARACTERISTICS CURVES (05F1 THRU 05F5)



NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF.

2. Rise Time = 10ns max. Source Impedance = 50 ohms.

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

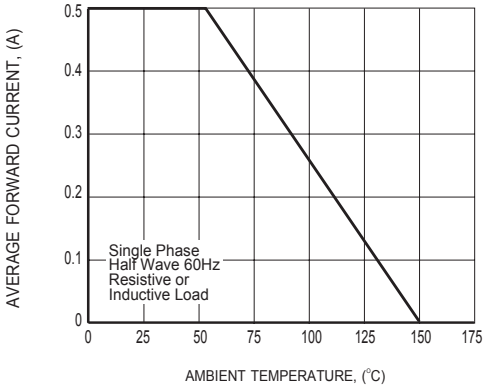


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

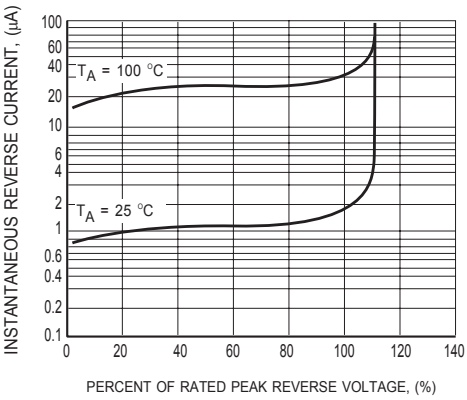


FIG.3 TYPICAL REVERSE CHARACTERISTICS

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RATING AND CHARACTERISTICS CURVES (05F1 THRU 05F5)

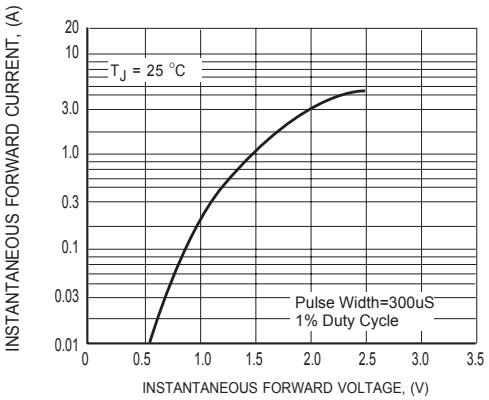

FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

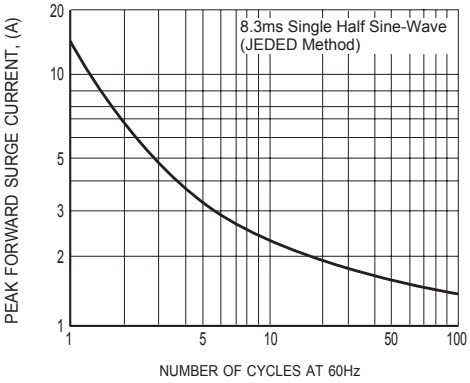

FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

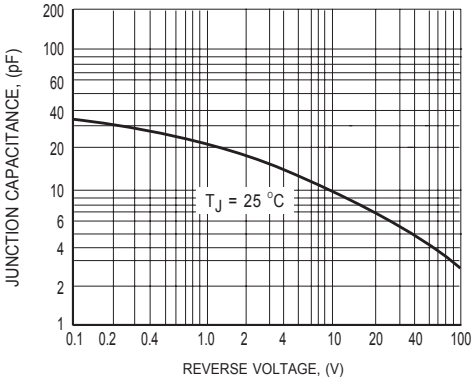

FIG.6 TYPICAL JUNCTION CAPACITANCE

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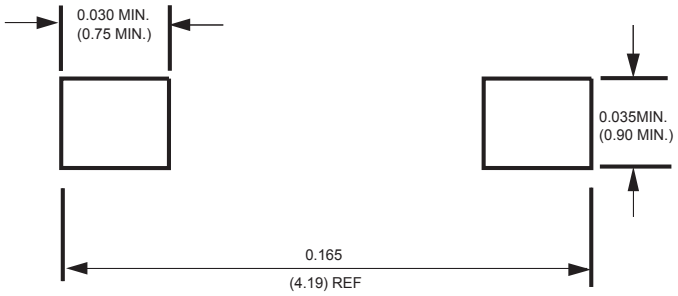
Mounting Pad Layout



Dimensions in inches and (millimeters)

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