RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

05F1 THRU 05F5

SURFACE MOUNT FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 600 Volts CURRENT 0.5 Ampere

FEATURES

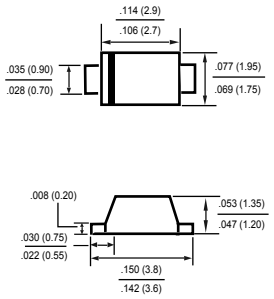
* Fast switching
* Low leakage
* Low forward voltage drop
* High current capability
* High currenf surge
* High reliability

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)

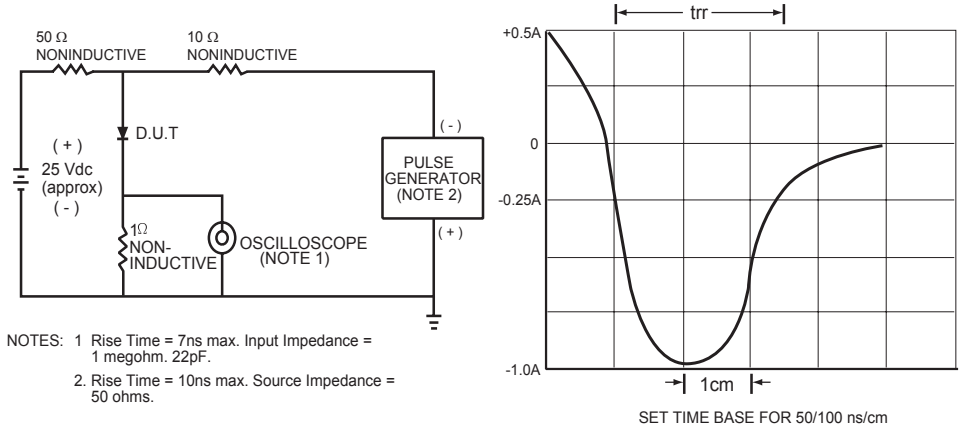
CHARACTERISTICS	SYMBOL	05F1	05F2	05F3	05F4	05F5	UNITS
Maximum Instantaneous Forward Voltage at 0.5A DC	V_F	1.3					Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	2.0					μAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T_L = 55°C		100					μAmps
Maximum Reverse Recovery Time (Note 1)	trr	150				250	nSec

NOTES : 1. Reverse Recovery Test Conditions: IF = 0.5A, IR = -1.0A, IRR = -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

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

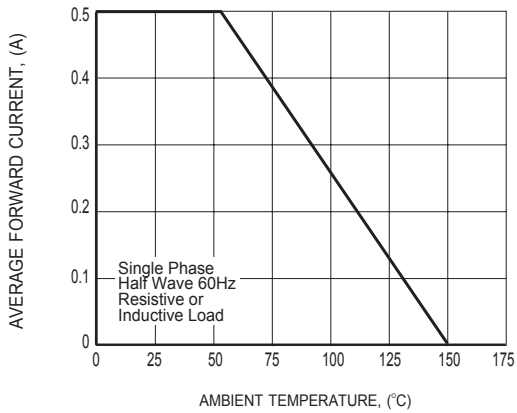


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

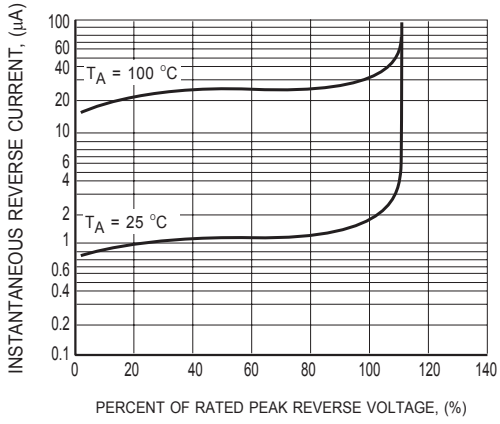


FIG.3 TYPICAL REVERSE CHARACTERISTICS

RATING AND CHARACTERISTICS CURVES (05F1 THRU 05F5)

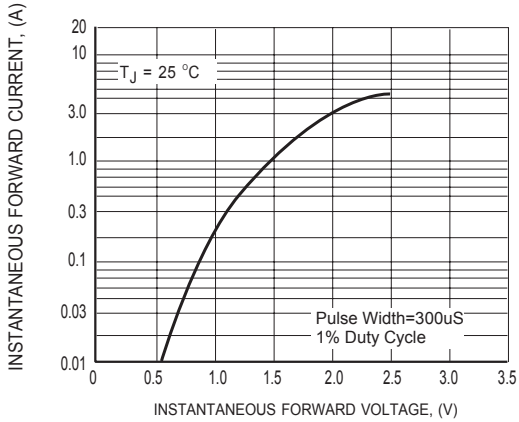


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

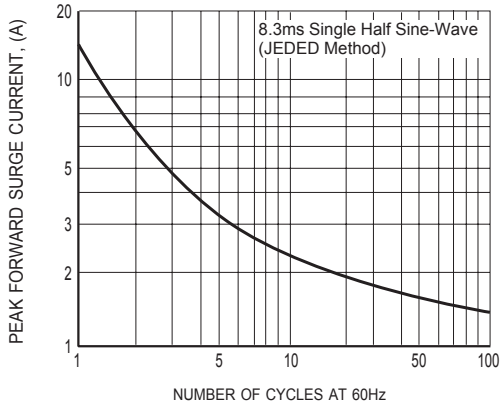


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

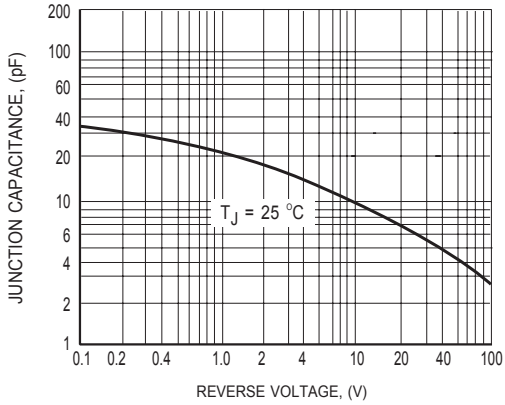
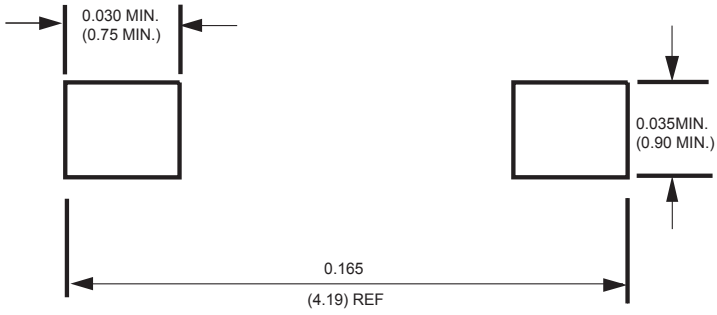


FIG.6 TYPICAL JUNCTION CAPACITANCE

Mounting Pad Layout



Dimensions in inches and (millimeters)

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