

**SURFACE MOUNT SUPER FAST RECTIFIER**  
**VOLTAGE RANGE 50 to 400 Volts CURRENT 0.5 Ampere**

**FEATURES**

- \* High reliability
- \* Low leakage
- \* Low forward voltage
- \* High current capability
- \* Super fast switching speed
- \* High surge capability
- \* Good for switching mode circuit

**MECHANICAL DATA**

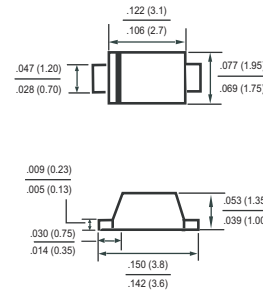
- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-0
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.018 gram

**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%.



**SOD-123F**



Dimensions in inches and (millimeters)

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

RATINGS	SYMBOL	05E1	05E2	05E3	05E4	05E5	05E6	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	Volts
Maximum RMS Volts	V <sub>RMS</sub>	35	70	105	140	210	280	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	Volts
Maximum Average Forward Current at TA = 55°C	I <sub>o</sub>	0.5						Amps
Peak Forward Surge Current I <sub>FM</sub> (surge):8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	15						Amps
Typical Current Squared Time	i <sup>2</sup> t	0.9						A <sup>2</sup> S
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	12				14		pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150						°C

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

CHARACTERISTICS	SYMBOL	05E1	05E2	05E3	05E4	05E5	05E6	UNITS
Maximum Forward Voltage at 0.5A DC	V <sub>F</sub>	0.95				1.25		Volts
Maximum DC Reverse Current @ TA = 25°C	I <sub>R</sub>	5.0						uAmps
at Rated DC Blocking Voltage @ TA = 150°C		2.0						mAmps
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	35						nSec

- NOTES : 1. 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. " ROHS compliant".

## RATING AND CHARACTERISTIC CURVES ( 05E1 THRU 05E6 )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

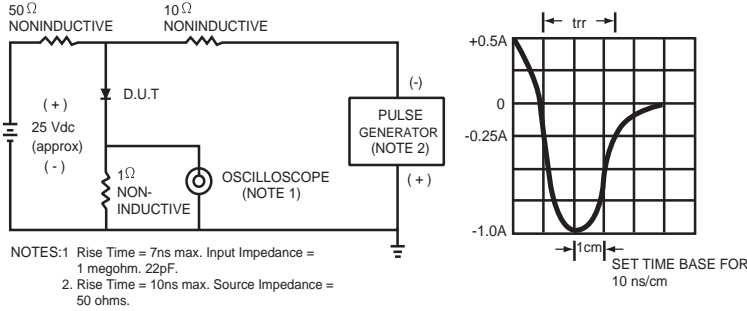


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

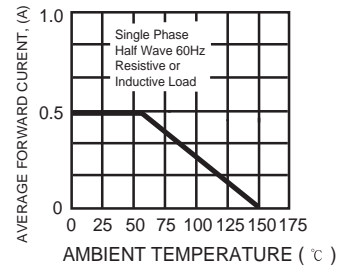


FIG. 3 - MAXIMUM REVERSE CHARACTERISTICS

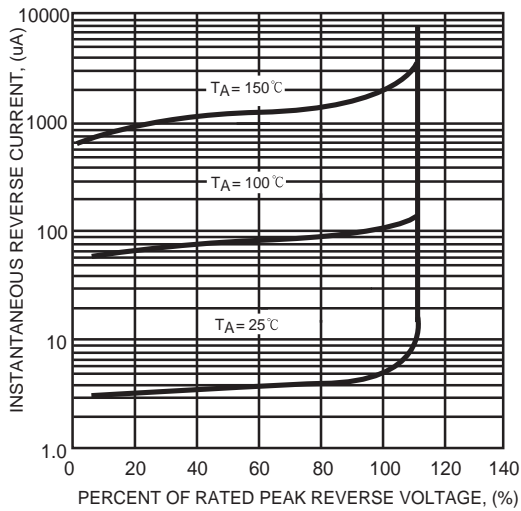


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

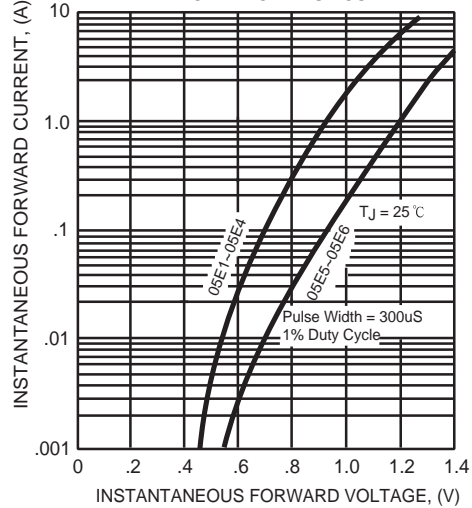


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

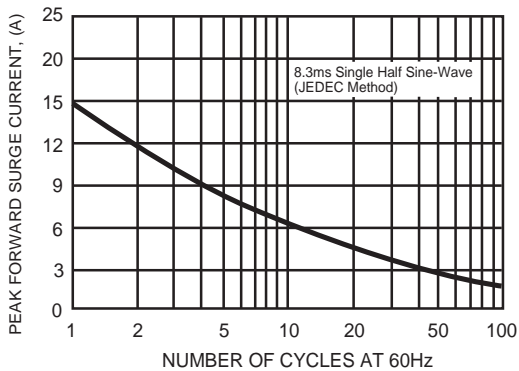
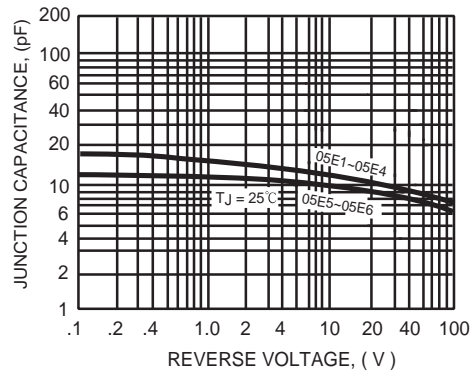
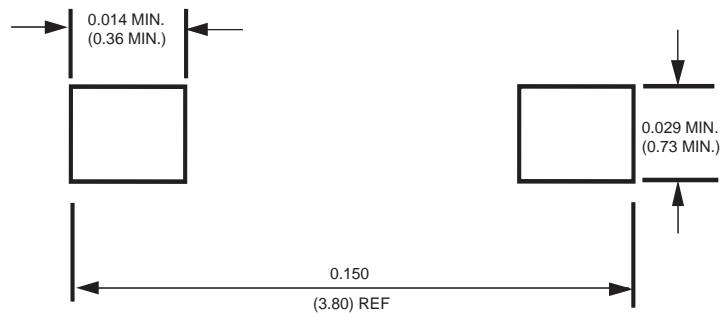


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



### Mounting Pad Layout

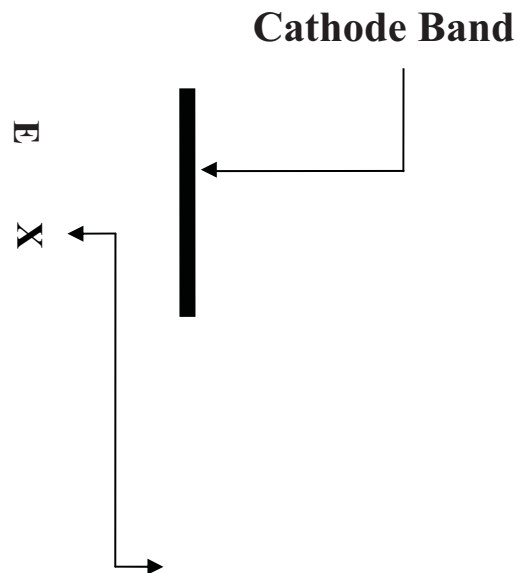


Dimensions in inches and (millimeters)

# Marking Description

**Year- code** ← **X**  
( Last digit of year )

**Voltage-code:** ← **M**  
A week 01~02  
B week 03~04  
C week 05~06  
.....  
Z week 51~52



Voltage code	
1-----	50V
2-----	100V
3-----	150V
4-----	200V
5-----	300V
6-----	400V

## 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

## DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.