

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

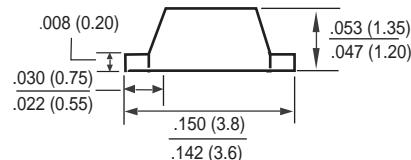
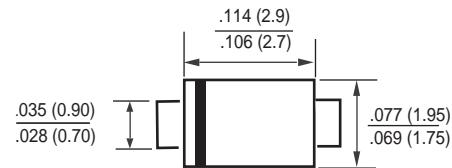
- * Case: Molded plastic
- * Epoxy: Device has UL flammability classification 94V-O
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.016 gram

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%.



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 _{RRM}	50	100	150	200	300	400	Volts
Maximum RMS Volts	V _{RMS}	35	70	105	140	210	280	Volts
Maximum DC Blocking Voltage	V _{dc}	50	100	150	200	300	400	Volts
Maximum Average Forward Current at TA = 55°C	I _o				0.5			Amps
Peak Forward Surge Current IFM (surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I _{FSM}				15			Amps
Typical Junction Capacitance (Note 2)	C _j			15		10		pF
Operating and Storage Temperature Range	T _j , T _{stg}			-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 _F			0.95		1.25		Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	I _R			5.0				uAmps
@ TA = 25°C				100				
@ TA = 100°C								
Maximum Reverse Recovery Time (Note 1)	trr			35				nSec

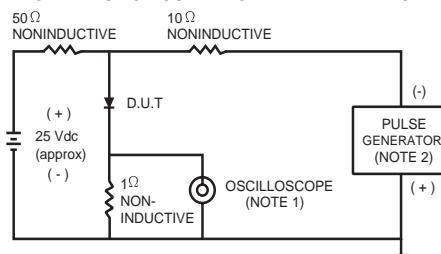
- NOTES : 1. Test Conditions: IF=0.5A, IR=1.0A, IRR=-0.25A.
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
 3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".

2006-3

REV:B

RATING AND CHARACTERISTIC CURVES (05E1 THRU 05E6)

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



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

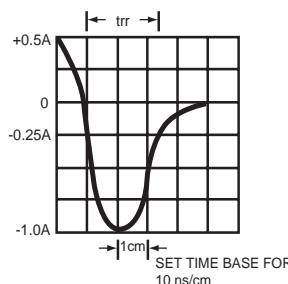


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

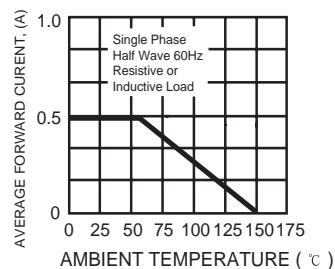


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

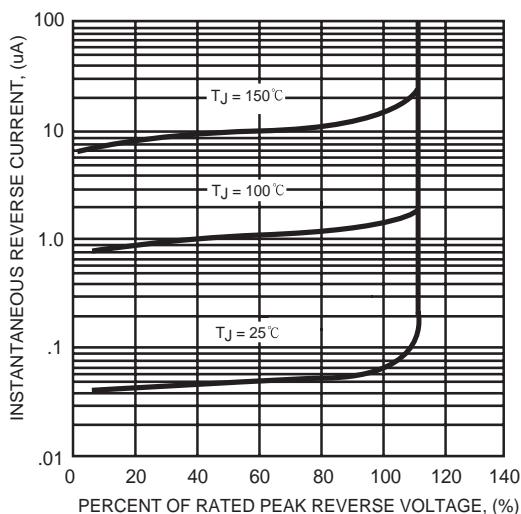


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

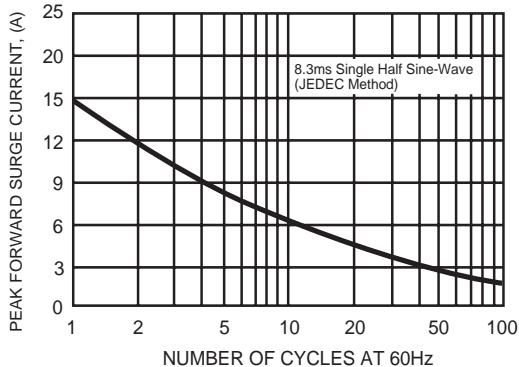


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

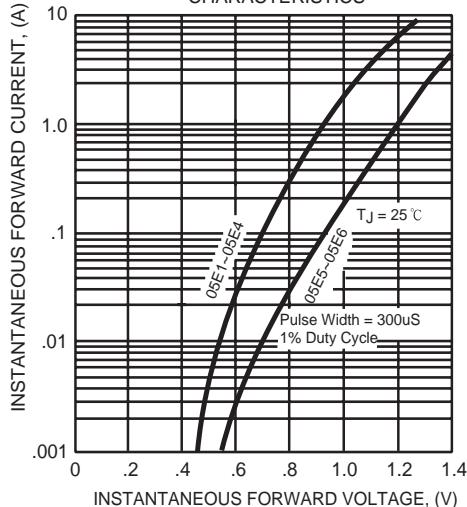
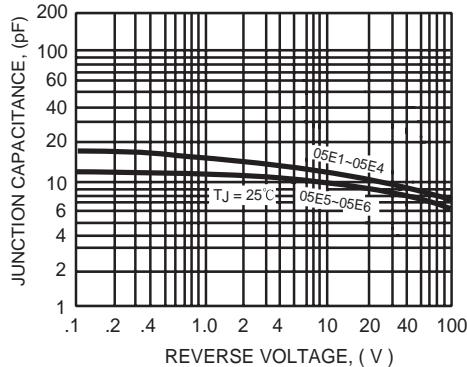
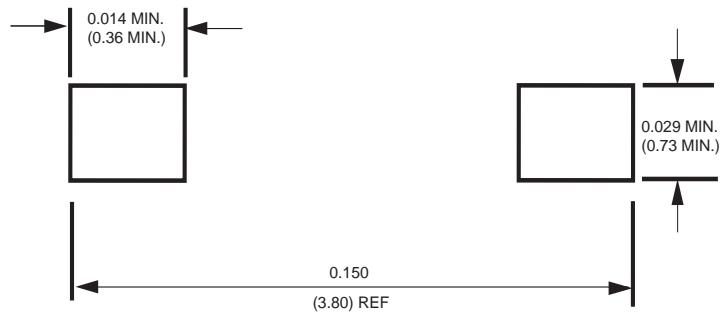


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



Mounting Pad Layout



Dimensions in inches and (millimeters)