RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

FSM101
THRU
FSM107

SURFACE MOUNT GLASS PASSIVATED FAST RECOVERY SILICON RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

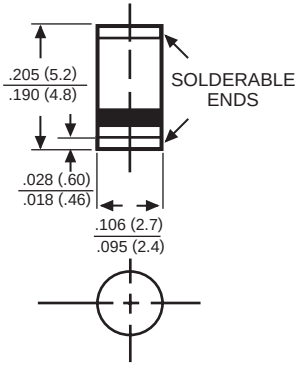
FEATURES

* Fast switching
* Glass passivated device
* Ideal for surface mounted applications
* Low leakage current
* Metallurgically bonded construction
* Mounting position: Any
* Weight: 0.015 gram

MECHANICAL DATA

* Epoxy : Device has UL flammability classification 94V-0

MELF



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 (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	FSM101	FSM102	FSM103	FSM104	FSM105	FSM106	FSM107	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at T_A = 55°C	I_O	1.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30							Amps
Maximum Thermal Resistance	(Note 2) $R\theta_{JL}$	30							°C/W
	(Note 3) $R\theta_{JA}$	75							°C/W
Typical Junction Capacitance (Note 1)	C_J	15							pF
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 175							°C

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

CHARACTERISTICS		SYMBOL	FSM101	FSM102	FSM103	FSM104	FSM105	FSM106	FSM107	UNITS
Maximum Forward Voltage at 1.0A DC		V_F	1.3							Volts
Maximum Full Load Reverse Current,Full cycle Average at T_A=55°C		I_R	50							uAmps
Maximum Average Reverse Current at Rated DC Blocking Voltage	@T_A = 25°C		5.0							uAmps
	@T_A = 125°C		100							uAmps
Maximum Reverse Recovery Time (Note 4)		trr	150				250	500		nSec

NOTES : 1. Measured at 1.0 MHz and applied average voltage of 4.0VDC
2. Thermal resistance junction to terminal 6.0mm² copper pads to each terminal.
3. Thermal resistance junction to ambient, 6.0mm² copper pads to each terminal.
4. Test Conditions: I_F = 0.5A, I_R = -1.0A, I_{RR} = -0.25A

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RATING AND CHARACTERISTIC CURVES (FSM101 THRU FSM107)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

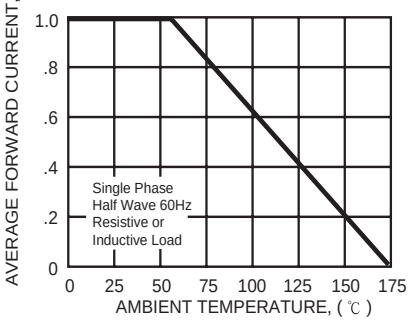


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

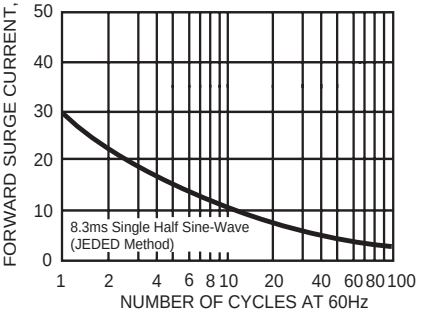


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

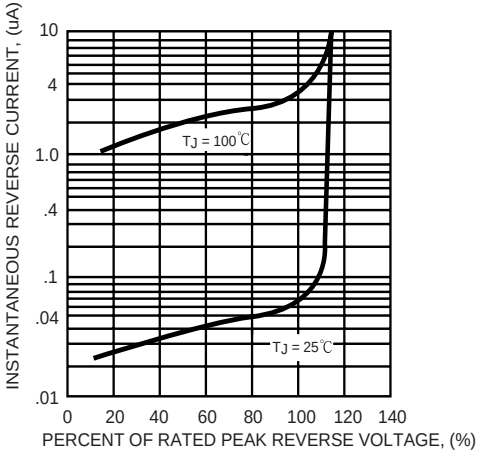


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

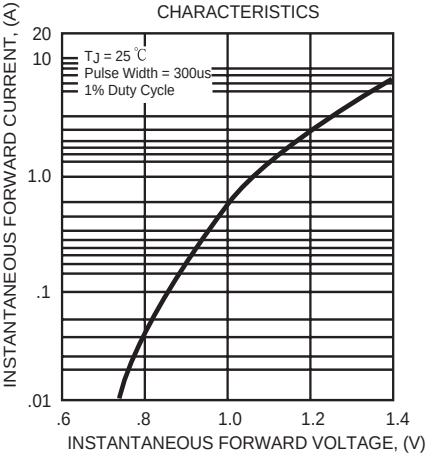
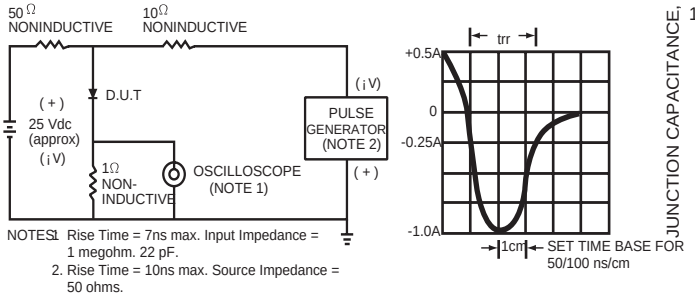


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

FIG. 6 - TYPICAL JUNCTION CAPACITANCE