RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

SH1 THRU SH8

SURFACE MOUNT HIGH EFFICIENCY RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

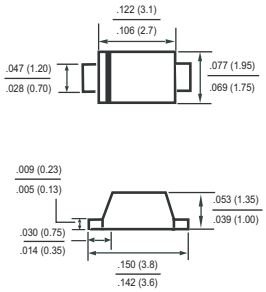
FEATURES

* Low power loss, high efficiency
* Low leakage
* Low forward voltage
* High current capability
* High speed switching
* High surge capability
* High reliability

MECHANICAL DATA

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

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	SH1	SH2	SH3	SH4	SH5	SH6	SH7	SH8	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	300	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	420	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	600	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
Current Squarad Time	I^2t	3.7								A^2/Sec
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	130								°C/W
Typical Thermal Resistance (Note 1)	$R_{\theta JL}$	30								°C/W
Typical Junction Capacitance (Note 2)	C_J	15					12			pF
Operating Temperature Range	T_J	-55 to + 150								°C
Storage Temperature Range	T_{STG}	-55 to + 150								°C

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

CHARACTERISTICS		SYMBOL	SH1	SH2	SH3	SH4	SH5	SH6	SH7	SH8	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC		V_F	1.0			1.3		1.7			Volts
Maximum Average Reverse Current at Rated DC Blocking Voltage	@T_A = 25°C	I_R	5.0								uA
	@T_A = 125°C		1.0								mA
Maximum Reverse Recovery Time (Note 4)		trr	50					75			nSec

NOTES : 1. Thermal Resistance :Mounted on PCB.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. "ROHS compliant"
4. Test Conditions: I_F= 0.5A, I_R= -1.0A, I_{RR}= -0.25A.
5. Available in Halogen-free epoxy by adding suffix -HF after the part nbr.

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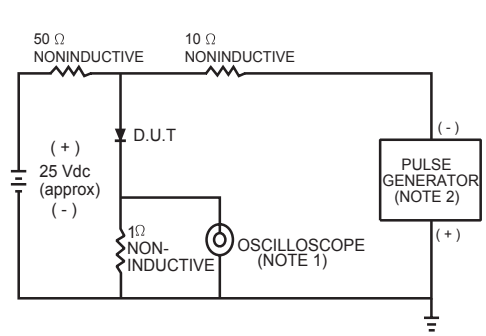
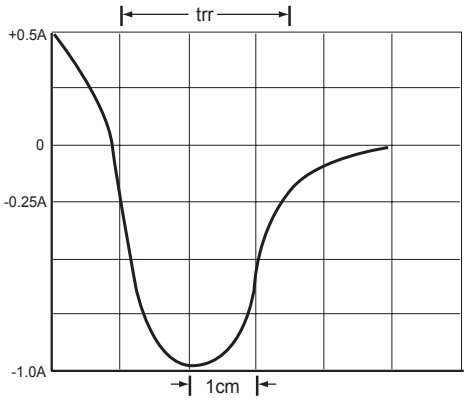
RATING AND CHARACTERISTICS CURVES (SH1 THRU SH8)



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

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



SET TIME BASE FOR 20/1 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

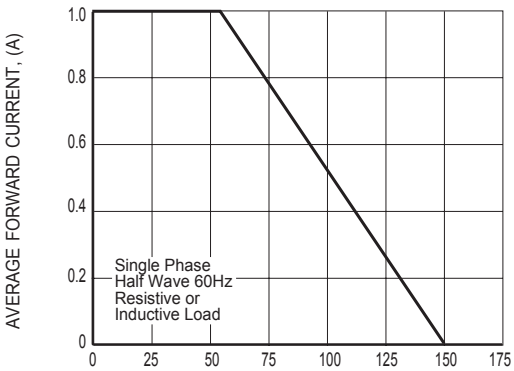


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

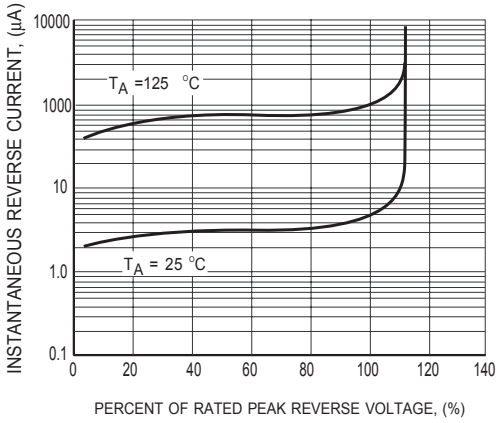


FIG.3 MAXIMUM REVERSE CHARACTERISTICS

RATING AND CHARACTERISTICS CURVES (SH1 THRU SH8)

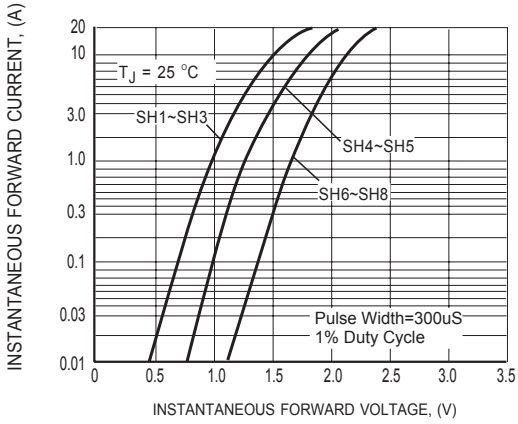


FIG.4 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS

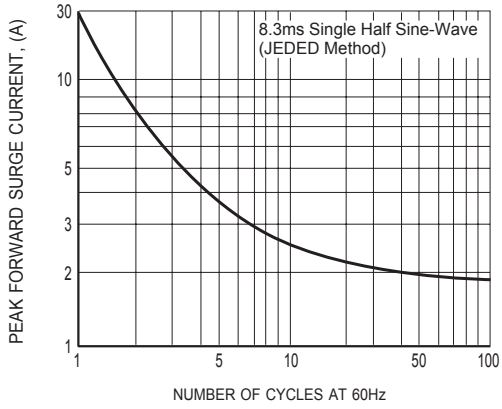


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

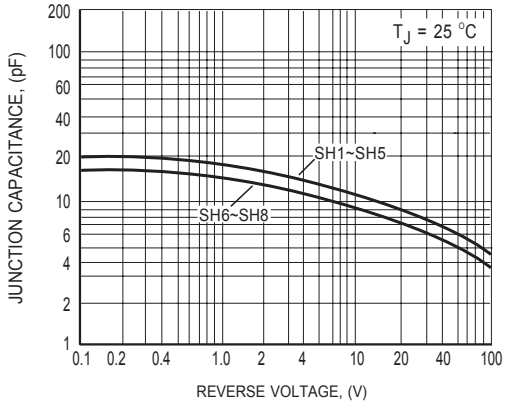
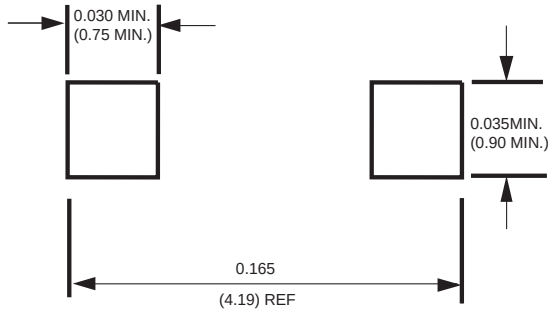


FIG.6 TYPICAL JUNCTION CAPACITANCE

Mounting Pad Layout



Dimensions in inches and (millimeters)

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

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