SM5391 THRU SM5399

TECHNICAL SPECIFICATIONS OF SURFACE MOUNT SILICON RECTIFIER

HYG

VOLTAGE RANGE - 50 to 1000 Volts

CURRENT - 1.5 Amperes

FEATURES
* Ideal for surface mounted applications
* Low leakage current
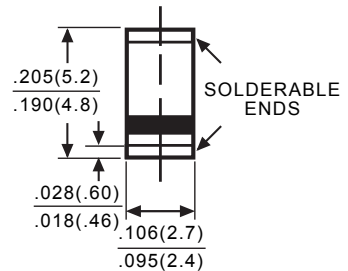* Glass passivated junction

MECHANICAL DATA
* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Terminals: Solder plated solderable per
           MIL-STD-202E, Method 208 guaranteed
* Polarity: Color band denotes cathode end
* Mounting position: Any
* Weight: 0.12 gram

SM-1(DO-213AB)

.205(5.2)
.190(4.8)

SOLDERABLE ENDS

.028(.60)
.018(.46)

.106(2.7)
.095(2.4)

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

		SYMBOL	SM5391	SM5392	SM5393	SM5395	SM5397	SM5398	SM5399	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 T_A = 75°C		I_O				1.5				Amps
Peak Forward Surge Current I_{FM}(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)		I_{FSM}				50				Amps
Maximum Forward Voltage at 1.5A DC		V_F				1.4				Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@T_A = 25°C	I_R				5.0				μAmps
	@T_A = 125°C					100				
Typical Thermal Resistance (Note 2)		$R_{\theta JC}$				60				°C/W
Typical Junction Capacitance (Note 1)		C_J				30				pF
Operating and Storage Temperature Range		T_J, T_{STG}				-65 to +150				°C

NOTES : 1. Measured at 1.0 MHz and applied reverse voltage of 4.0VDC
         2. Thermal resistance (Junction to Ambient),.24in^2 (6.0mm^2) coppeer pads to each terminal.

FIG. 1 - TYPICAL FORWARD CURRENT
DERATING CURVE
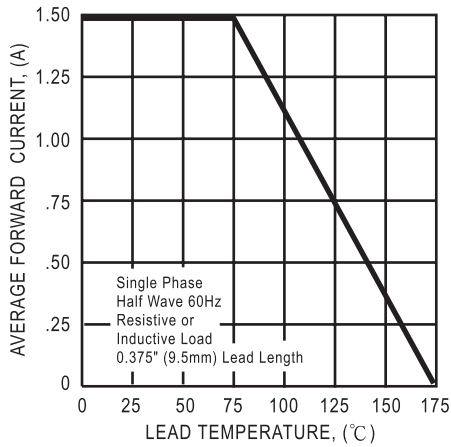
AVERAGE FORWARD CURRENT, (A)

LEAD TEMPERATURE, (℃)

Single Phase
Half Wave 60Hz
Resistive or
Inductive Load
0.375" (9.5mm) Lead Length

FIG. 2 - TYPICAL INSTANTANEOUS FORWARD
CHARACTERISTICS

INSTANTEOUS FORWARD CURRENT, (A)

INSTANTANEOUS FORWARD VOLTAGE, (V)

T J = 25℃
Pulse Width=300 μ s
1% Duty Cycle
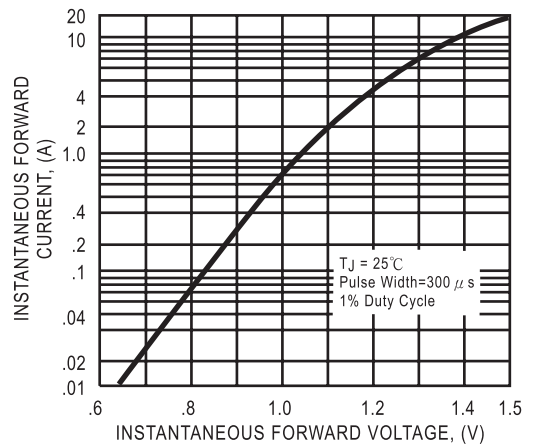
FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD
SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A)

NUMBER OF CYCLES AT 60Hz

8.3ms Single Half Sine-Wave
(JEDEC Method)

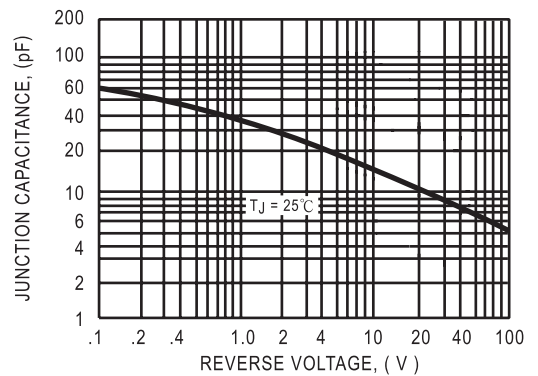FIG. 4 - TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, (pF)

REVERSE VOLTAGE, (V)

T J = 25℃
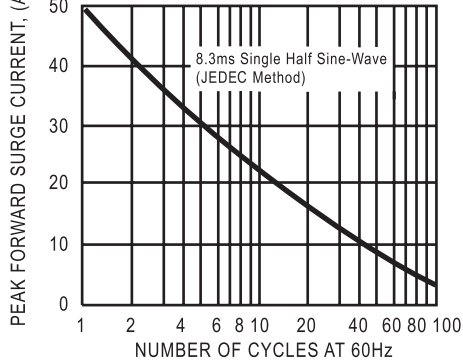
FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, (uA)

PERCENT OF RATED PEAK
REVERSE VOLTAGE, (%)

T J = 25℃