RS1A - RS1M

SURFACE MOUNT
FAST SWITCHING RECTIFIERS

PRV : 50 - 1000 Volts
## Io : 1.0 Ampere

FEATURES :
* Glass passivated chip
* Low profile package
* High forward surge capability
* High reliability
* Low reverse current
* Fast switching for high efficiency
* Pb / RoHS Free

MECHANICAL DATA :
* Case : SMA Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.060 gram (Approximately)

SMA

5.4 ± 0.2 1.8 ± 0.2 2.7 ± 0.2 1.8 ± 0.2 4.4 ± 0.2 1.3 ± 0.2 2.3 ± 0.2

Dimensions in millimeters
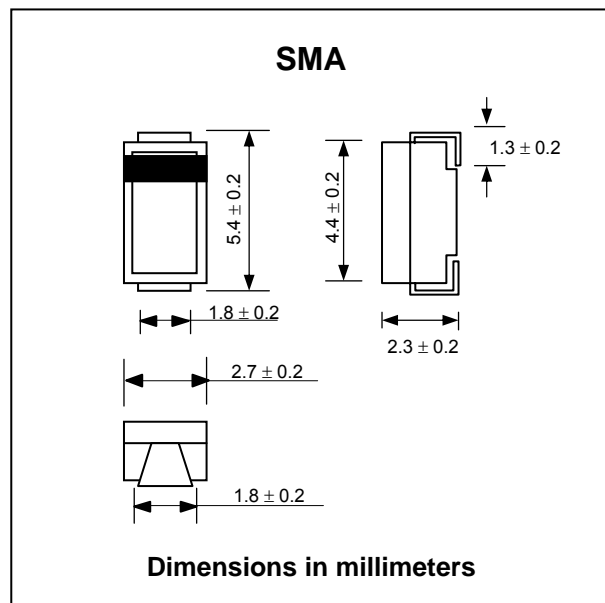
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 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%.

RATING	SYMBOL	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	UNIT
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Current at T_L = 90 °C	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current, 8.3ms Single half sine wave Superimposed on rated load (JEDEC Method)	I_{FSM}	30							A
Maximum Peak Forward Voltage at I_F = 1.0 A	V_F	1.3							V
Maximum DC Reverse Current Ta = 25 °C	I_R	5							μA
at Rated DC Blocking Voltage Ta = 125 °C	$I_{R(H)}$	50							μA
Maximum Reverse Recovery Time (Note 1)	Trr	150				250	500		ns
Typical Junction Capacitance (Note 2)	C_J	10							pF
Thermal Resistance (Junction to Ambient)	$R_{\Theta JA}$	105							°C/W
Thermal Resistance (Junction to Lead)	$R_{\Theta JL}$	32							°C/W
Operating Junction and Storage Temperature Range	T_J , T_{STG}	- 55 to + 150							°C

Notes :
    (1) Reverse Recovery Test Conditions : I_F = 0.5 A, I_R = 1.0 A, Irr = 0.25 A.

    (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 V_{DC}

RATING AND CHARACTERISTIC CURVES (RS1A - RS1M)
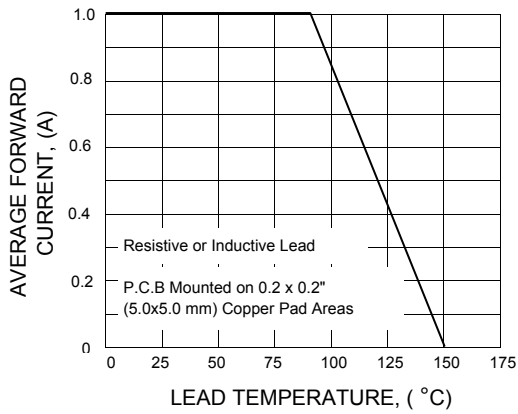
FIG.1 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

AVERAGE FORWARD CURRENT, (A)

Resistive or Inductive Lead

P.C.B Mounted on 0.2 x 0.2"
(5.0x5.0 mm) Copper Pad Areas

LEAD TEMPERATURE, (°C)

FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A)

T_L = 90 °C
8.3 ms SINGLE
HALF SINE WAVE

NUMBER OF CYCLES AT 60Hz
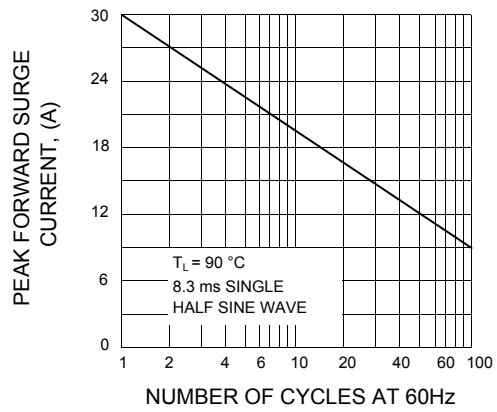
FIG.3 - TYPICAL FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT, (A)

T_J = 125 °C T_J = 25 °C
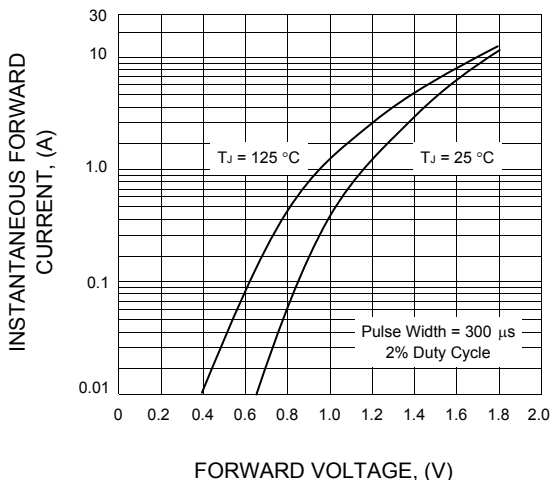
Pulse Width = 300 μs
2% Duty Cycle

FORWARD VOLTAGE, (V)

FIG.4 - TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, (µA)

T_J = 125 °C

T_J = 100 °C

T_J = 25 °C

PERCENT OF RATED REVERSE VOLTAGE, (%)