TAIWAN SEMICONDUCTOR

Pb **RoHS** COMPLIANCE

Features

✧ For surface mounted application

✧ Glass passivated junction chip

✧ Built-in strain relief, ideal for automated placement

✧ Plastic material used carries Underwriters Laboratory Classification 94V-0

✧ Fast switching for high efficiency

✧ High temperature soldering: 260℃ / 10 seconds at terminals

✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

.062(1.58)
.050(1.27)

.111(2.83)
.090(2.29)

.181(4.60)
.160(4.06)

.098(2.50)
.078(1.99)

.012(.31)
.006(.15)

.008(.20)
.004(.10)

.056(1.41)
.035(0.90)

.210(5.33)
.195(4.95)
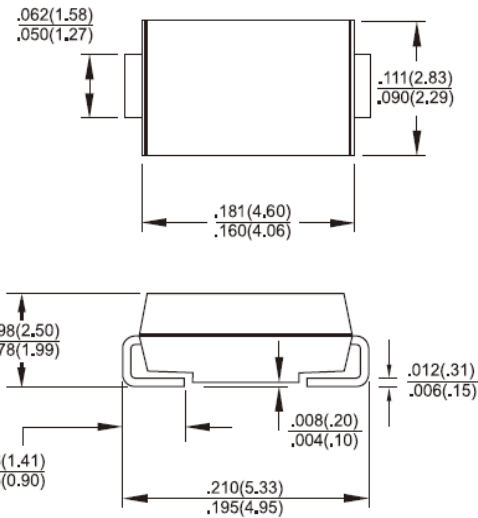
Mechanical Data

✧ Case: Molded plastic

✧ Terminals: Pure tin plated, Lead free

✧ Polarity: Indicated by cathode band

✧ Packing: 12mm tape per EIA STD RS-481

✧ Weight: 0.064 grams

Dimensions in inches and (millimeters)

Marking Diagram

RS2XA
SGYM

RS2X	= Specific Device Code
G	= Green Compound
Y	= Year
M	= Work Month

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	RS 2AA	RS 2BA	RS 2DA	RS 2GA	RS 2JA	RS 2KA	RS 2MA	Unit
Maximum Repetitive 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 Rectified Current @ T_L=100℃	$I_{F(AV)}$				1.5				A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}				50				A
Maximum Instantaneous Forward Voltage (Note 1) @ 1.5 A	V_F				1.3				V
Maximum Reverse Current @ Rated VR T_A=25 ℃ T_A=125 ℃	I_R				5 200				uA
Maximum Reverse Recovery Time (Note 2)	Trr		150			250	500		nS
Typical Junction Capacitance (Note 3)	Cj				50				pF
Typical Thermal Resistance	$R_{\theta jA}$ $R_{\theta jL}$				55 18				℃/W
Operating Temperature Range	T_J				- 55 to + 150				℃
Storage Temperature Range	T_{STG}				- 55 to + 150				℃

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Version:D10

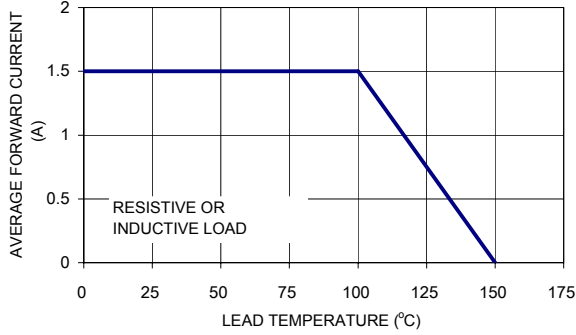## RATINGS AND CHARACTERISTIC CURVES (RS2AA THRU RS2MA)

FIG.1 FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT (A)

RESISTIVE OR INDUCTIVE LOAD

LEAD TEMPERATURE (°C)

FIG. 2 TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT (uA)

TA=125℃

TA=25℃

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)
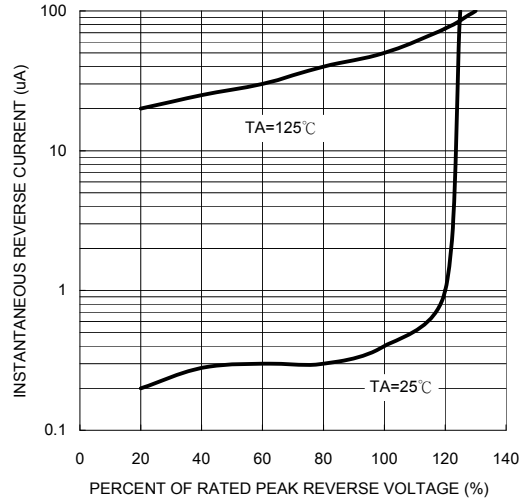
FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT (A)

8.3mS Single Half Sine Wave
JEDEC Method

NUMBER OF CYCLES AT 60 Hz
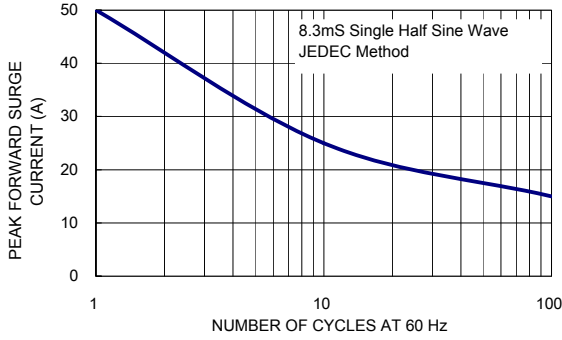
FIG. 5 TYPICAL FORWARD CHARACTERISRICS

INSTANTANEOUS FORWARD CURRENT (A)

Pulse Width=300us
1% Duty Cycle

TA=25℃

FORWARD VOLTAGE (V)

FIG. 4 TYPICAL JUNCTION CAPACITANCE

CAPACITANCE (pF)

TA=25℃
f=1.0MHz
Vsig=50mVp-p

REVERSE VOLTAGE (V)
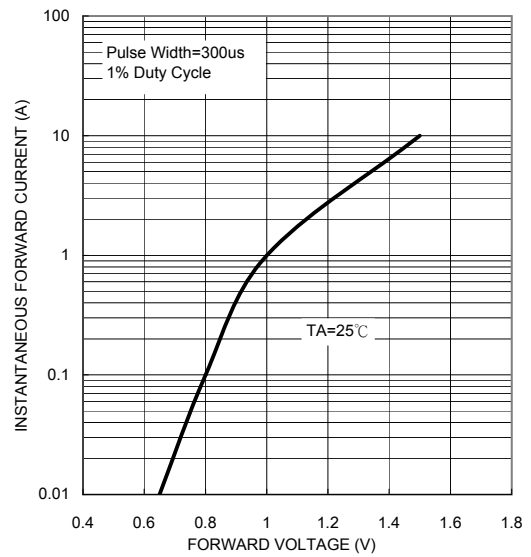
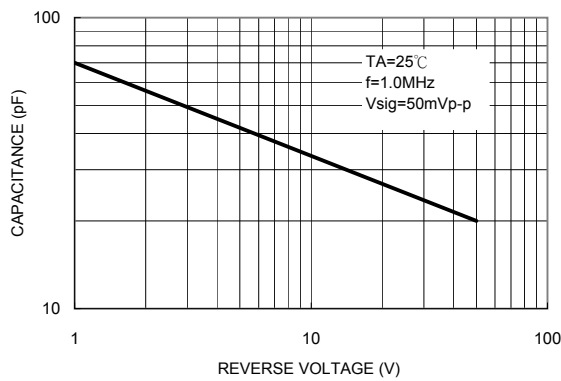### FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

50Ω NONINDUCTIVE

10Ω NONINDUCTIVE

DUT

(+) 50Vdc (approx) (-)

1Ω NON INDUCTIVE

OSCILLOSCOPE (NOTE 1)

PULSE GENERATOR (NOTE 2)

(-)

(+)

+0.5A

0

-0.25A

-1.0A

trr

1cm

SET TIME BASE FOR 5/ 10ns/ cm

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

Version:D10