**新芯微电子**
*NewChip*
*Microelectronics*

# RS1A THRU RS1M

## FAST RECOVERY RECTIFIER
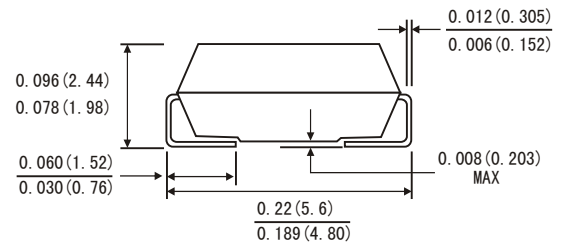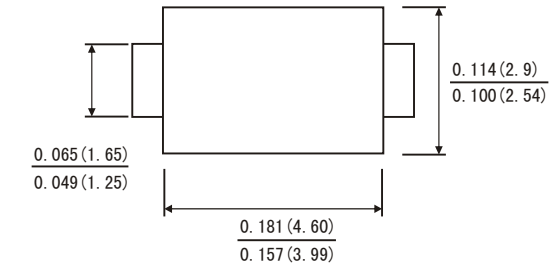Reverse Voltage: 50 to 1000 Volts
Forward Current:1.0Ampere

## FEATURES

- Fast switching for high efficiency
- Low cost
- Diffused junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- The plastic material carries UL recognition 94V-0

### SMA(DO-214AC)

XH

0.114 (2.9) / 0.100 (2.54)

0.065 (1.65) / 0.049 (1.25)

0.181 (4.60) / 0.157 (3.99)

0.012 (0.305) / 0.006 (0.152)

0.096 (2.44) / 0.078 (1.98)

0.060 (1.52) / 0.030 (0.76)

0.008 (0.203) MAX

0.22 (5.6) / 0.189 (4.80)

Dimensions in inches and (millimeters)

## MECHANICAL DATA

- Case： Molded Plastic
- Polarity: Indicated by cathode band
- Weight: 0.002 ounces,0.064 grams
- Mounting position: Any

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ ambient temperature unless otherwise specified.

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

For capacitive load, derate current by 20%

| CHARACTERISTICS | 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 Rectified Current  @$T_A$=75 ℃ | $I_{(AV)}$ | 1.0 | | | | | | | A |
| Peak Forward Surage Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load(JEDEC Method) | $I_{FSM}$ | 30 | | | | | | | A |
| Peak Forward Voltage at 1.0A DC | $V_F$ | 1.3 | | | | | | | V |
| Maximum DC Reverse Current  @$T_J$=25℃ at Rated DC Blocking Voltage  @$T_J$=100℃ | $I_R$ | 5.0 100 | | | | | | | uA |
| Maximum Reverse Recovery Time (Note 1) | $T_{RR}$ | 150 | | | | 250 | 500 | | nS |
| Tyical Junction Capacitance (Note2) | $C_J$ | 25 | | | | 15 | | | pF |
| Tyical Thermal Resistance (Note3) | $R_{\theta JA}$ | 25 | | | | | | | ℃/W |
| Operating Temperature Range | $T_J$ | -50 to +150 | | | | | | | ℃ |
| Storage Temperature Range | $T_{STG}$ | -50 to +150 | | | | | | | ℃ |

NOTES: 1.Measured with $I_F$=0.5A,$I_R$=1A,$I_{RR}$=0.25A

2.Measured at 1.0 MHz and applied reverse voltage of 4.0V DC

3.Thermal resistance junction of ambient.

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FIG. 1 – FORWARD CURRENT DERATING CURVE



AVERAGE FORWARD CURRENT AMPERES

SINGLE PHASE HALF WAVE 60Hz
RESISTIVE OR INDUCTIVE LOAD

AMBIENT TEMPERATURE（℃）
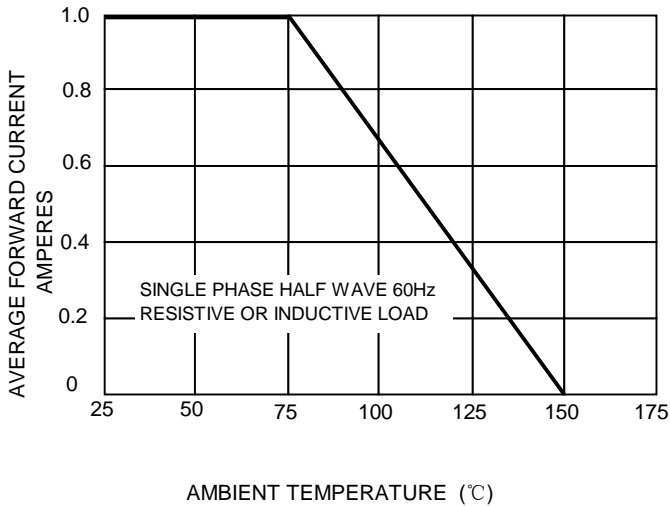
FIG. 2 – MAXIMUM NON-REPETITIVE SURGE CURRENT



PEAK FORWARD SURGE CURRENT AMPERES

PULSE WIDTH 3.3ms
SINGLE HALF-SINE-WAVE
(JEDEC METHOD)

NUMBER OF CYCLES AT 60Hz
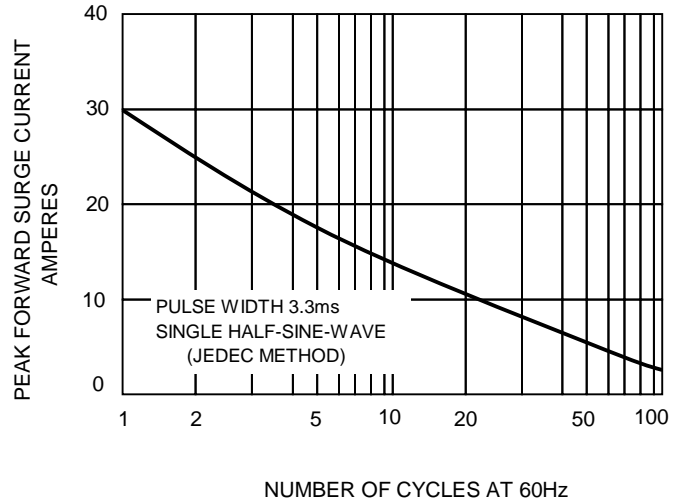
FIG.3 – TYPICAL JUNCTION CAPACITANCE



CAPACITANCE (pF)
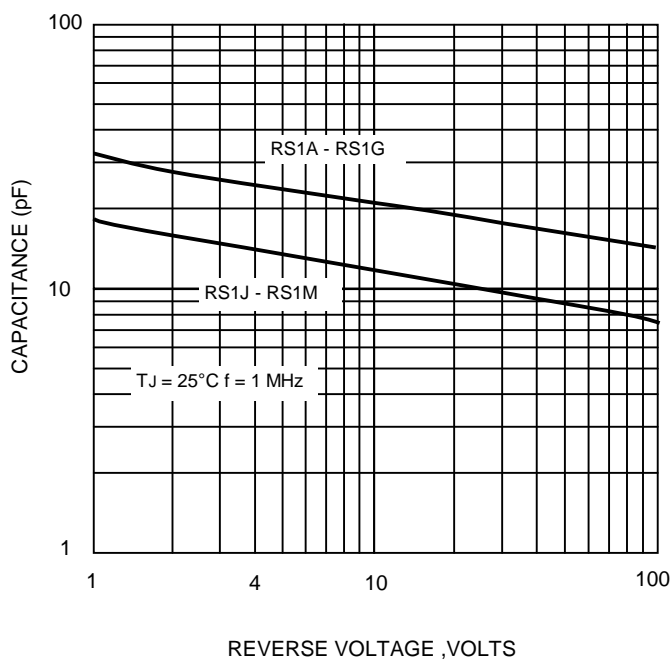
RS1A - RS1G

RS1J - RS1M

$T_J = 25°C$ f = 1 MHz

REVERSE VOLTAGE ,VOLTS

FIG.4-TYPICAL FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD CURRENT AMPERES

$T_J = 25°C$

PULSE WIDTH 300us

INSTANTANEOUS FORWARD VOLTAGE ,VOLTS

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