



RS3AB THRU RS3MB

VOLTAGE RANGE

50 to 1000 Volts

CURRENT

3.0 Ampere

Features



- Plastic package has underwrites laboratory flammability Classification 94V-0
- Low profile surface mount package
- Built-in strain relief
- Fast switching for high efficiency
- Glass passivated chip junction
- High temperature soldering 250°C/10 second at terminals



DO-214AA (SMB J-Bend)

Mechanical Data

- Case: JEDED DO-214AA molded plastic over glass passivated chip
- Terminals: Solder plated, Solderable per MIL-STD-750, method 2026
- Polarity: Laser band denote cathode band
- Weight: 0.003ounce, 0.093 gram

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%

| TYPE NUMBER | SYMBOL | RS 3AB | RS 3BB | RS 3DB | RS 3GB | RS 3JB | RS 3KB | RS 3MB | UNITS |
|--|---------------------------|-------------|--------|--------|--------|--------|--------|--------|--------------------|
| Maximum Repetitive 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 at $T_L = 100^\circ\text{C}$ | $I_{(AV)}$ | 3.0 | | | | | | | Amp |
| Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method) | I_{FSM} | 80 | | | | | | | Amps |
| Maximum Instantaneous Forward Voltage @ 3.0A | V_F | 1.30 | | | | | | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | $T_A = 25^\circ\text{C}$ | 5.0 | | | | | | | μA |
| | $T_A = 125^\circ\text{C}$ | 50 | | | | | | | |
| Typical Reverse Recovery Time ^(Note 3) | T_{RR} | 150 | | | | 250 | 500 | | nS |
| Typical Junction Capacitance ^(Note 1) | C_j | 20 | | | | 17 | | | pF |
| Typical Thermal Resistance ^(Note 2) | $R_{\theta JA}$ | 55 | | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 18 | | | | | | | |
| Operating Junction Temperature Range | T_J | -55 to +150 | | | | | | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal resistance from Junction to ambient and from junction to lead mounted on PCB. with 0.3×0.3"(8.0 × 8.0mm) copper pad areas.
3. Reverse Recovery Test Conditions: $I_f = 0.5\text{mA}$, $I_r = 1.0\text{mA}$, $I_{rr} = 0.25\text{A}$.



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Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

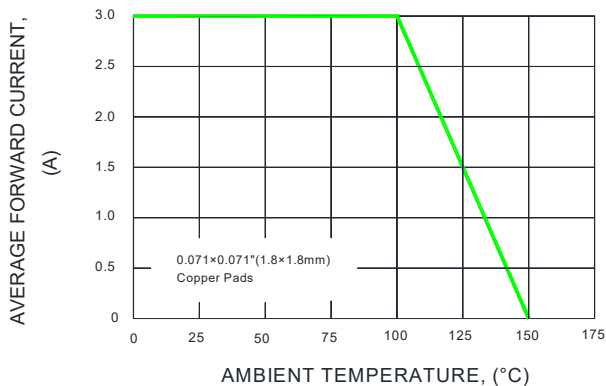


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

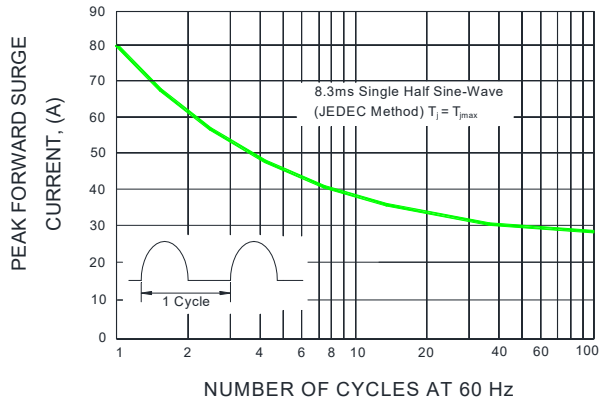


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

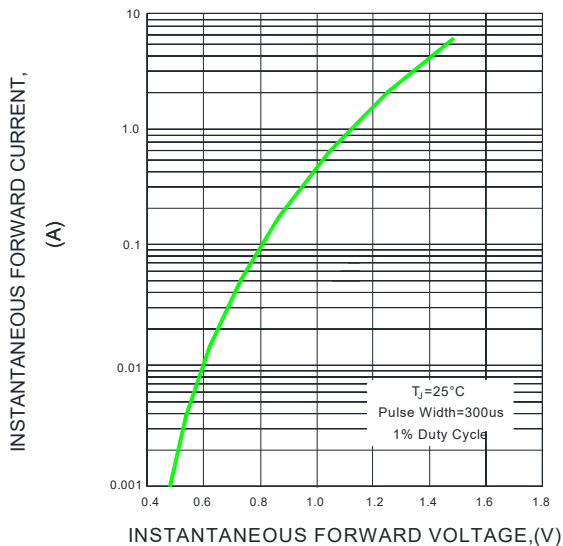


FIG.4-TYPICAL REVERSE CHARACTERISTICS

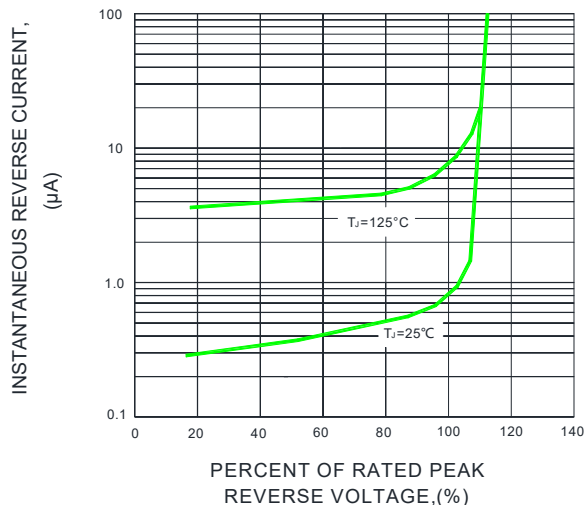


FIG.5-TYPICAL JUNCTION CAPACITANCE

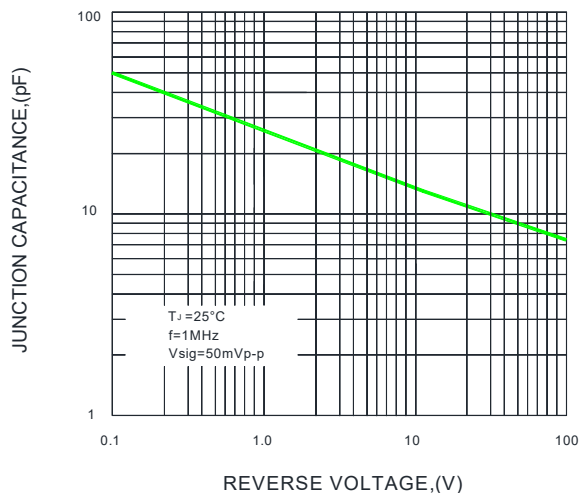
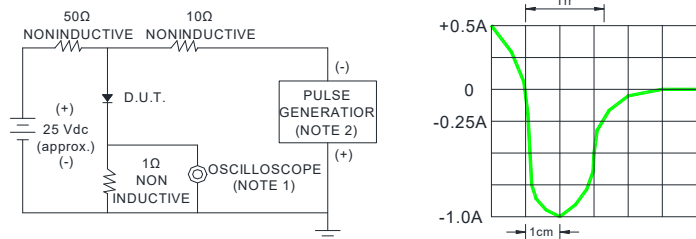


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

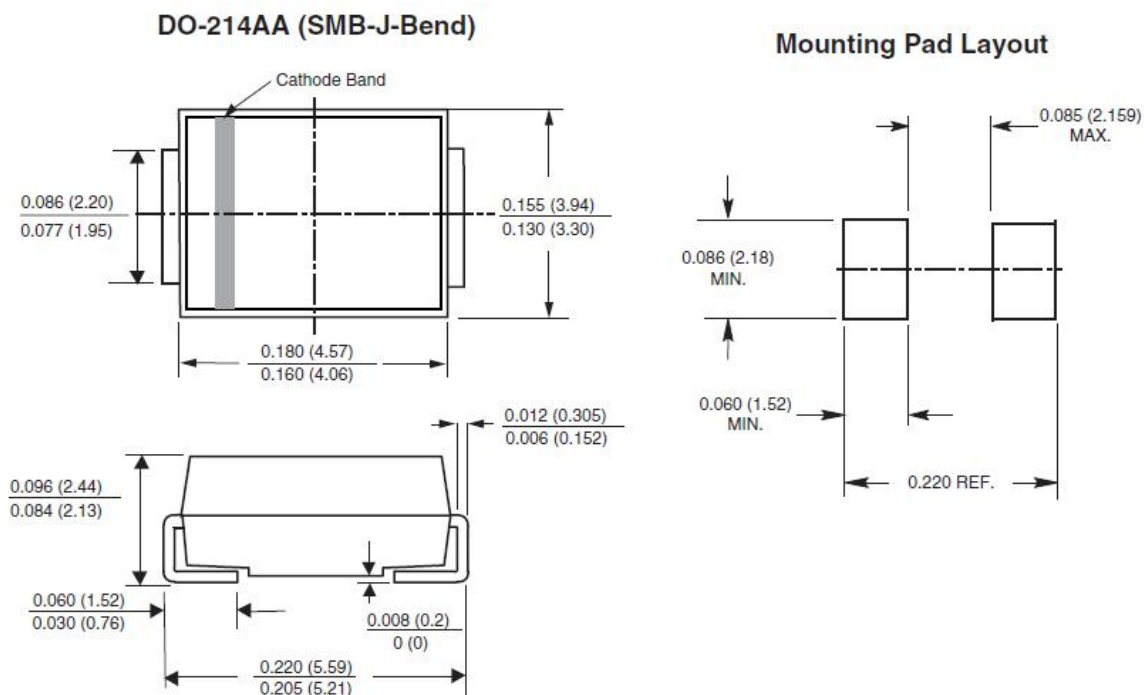


NOTES : 1. Rise Time = 7ns max. Input Impedance = 1 magohm. 22pF
2. Rise time = 10ns max. Source Impedance = 50 ohms

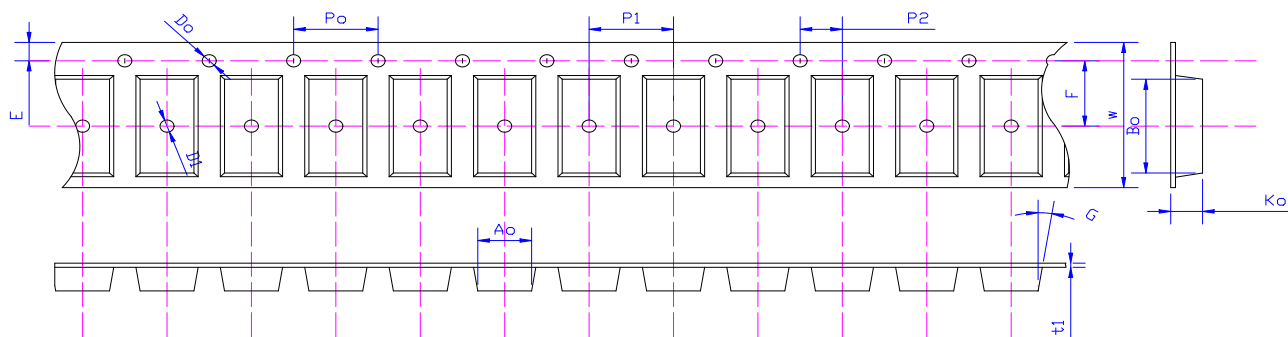
SET TIME BASE FOR 50/100ns/cm



Package Outline Dimensions in inches (millimeters)



Package Reel Information

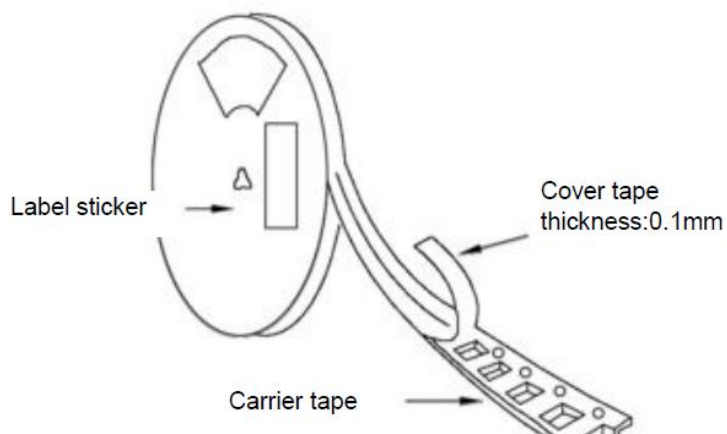


| Specifications | A_o | B_o | K_o | P_o | W | t_1 |
|----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|
| SMB | 3.77 ± 0.10 | 5.70 ± 0.10 | 2.67 ± 0.10 | 4.00 ± 0.1 | 12.0 ± 0.05 | 0.23 ± 0.02 |



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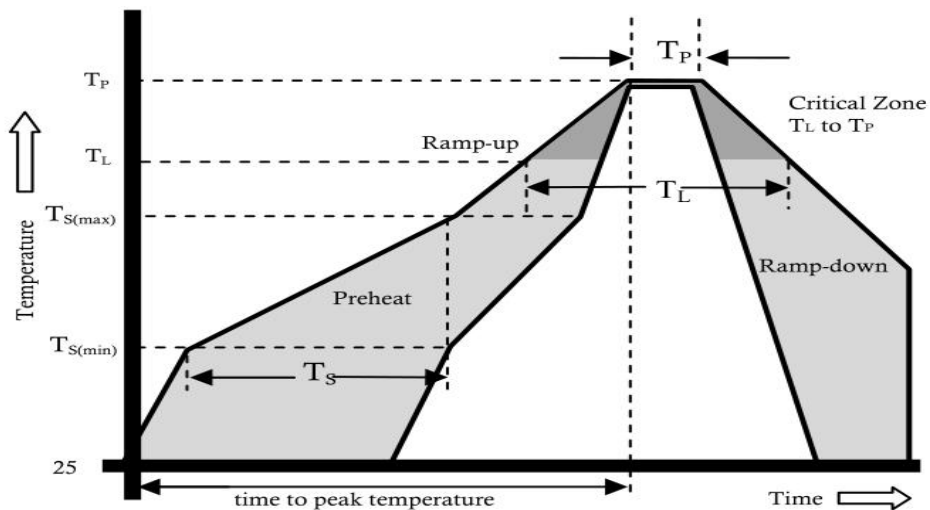
| DEVICE TYPE | Tape Width | 13"Reel | | | 07"Reel | | | |
|-------------|------------|-----------------|--------------|-------------------|-----------------|----------|--------------|-------------------|
| | | Q'TY/REEL(pcs) | BOX/CARTOO N | Q'TY/CARTON (pcs) | Q'TY/REEL(pcs) | REEL/BOX | BOX/CARTOO N | Q'TY/CARTON (pcs) |
| SMB | 12mm | 3000 | 8 | 48000 | NA | NA | NA | NA |

Marking code

| Type number | Marking code |
|-------------|--------------|
| RS3AB | RS3A |
| RS3BB | RS3B |
| RS3DB | RS3D |
| RS3GB | RS3G |
| RS3JB | RS3J |
| RS3KB | RS3K |
| RS3MB | RS3M |



Reflow Profile



| Reflow Condition | | Pb-Free Assembly |
|--|---------------------------------|------------------|
| Pre Heat | Temperature Min. | +150°C |
| | Temperature Max. | +200°C |
| | Time(Min to Max) | 60-180 secs. |
| Average ramp up rate(Liquidus Temp(T_L) to peak) | | 3°C/sec. Max. |
| T_S (max) to T_L - Ramp-up Rate | | 3°C/sec. Max. |
| Reflow | Temperature (T_L)(Liquidus) | +217°C |
| | Temperature (T_P) | 60-150 secs. |
| Peak Temp (T_P) | | +(260+0/-5)°C |
| Time within 5°C of actual Peak Temp (T_P) | | 25 secs. |
| Ramp-down Rate | | 6°C/sec. Max. |
| Time 25°C to peak Temp (T_P) | | 8 min. Max. |
| Do not exceed | | +260°C |



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