

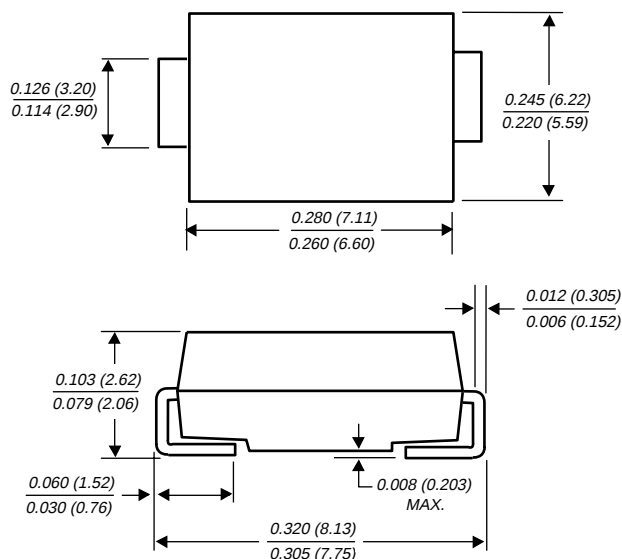
# RS3A THRU RS3K

## SURFACE MOUNT FAST SWITCHING RECTIFIER

Reverse Voltage - 50 to 800 Volts

Forward Current - 3.0 Amperes

DO-214AB  
MODIFIED J-BEND



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mount applications
- ◆ Low profile package
- ◆ Built-in strain relief, ideal for automated placement
- ◆ Fast switching for high efficiency
- ◆ Easy pick and place
- ◆ Glass passivated chip junction
- ◆ High temperature soldering: 250°C/10 seconds at terminals



### MECHANICAL DATA

**Case:** JEDEC DO-214AB molded plastic body over passivated chip

**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Weight:** 0.007 ounce, 0.25 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                            | SYMBOLS                            | RS3A         | RS3B | RS3D | RS3G | RS3J | RS3K | UNITS              |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------|------|------|------|------|------|--------------------|
| Device marking code                                                                                                        |                                    | RA           | RB   | RD   | RG   | RJ   | RK   |                    |
| Maximum repetitive peak reverse voltage                                                                                    | $V_{RRM}$                          | 50           | 100  | 200  | 400  | 600  | 800  | Volts              |
| Maximum RMS voltage                                                                                                        | $V_{RMS}$                          | 35           | 70   | 140  | 280  | 420  | 560  | Volts              |
| Maximum DC blocking voltage                                                                                                | $V_{DC}$                           | 50           | 100  | 200  | 400  | 600  | 800  | Volts              |
| Maximum average forward rectified current at $T_L=75^\circ\text{C}$                                                        | $I_{(AV)}$                         | 3.0          |      |      |      |      |      | Amps               |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method) $T_L=75^\circ\text{C}$ | $I_{FSM}$                          | 100.0        |      |      |      |      |      | Amps               |
| Maximum instantaneous forward voltage at 2.5A                                                                              | $V_F$                              | 1.3          |      |      |      |      |      | Volts              |
| Maximum DC reverse current<br>at Rated DC blocking voltage<br>$T_A=25^\circ\text{C}$<br>$T_A=125^\circ\text{C}$            | $I_R$                              | 10.0<br>250  |      |      |      |      |      | $\mu\text{A}$      |
| Maximum reverse recovery time (NOTE 1)                                                                                     | $t_{rr}$                           | 150          |      |      |      | 250  | 500  | ns                 |
| Typical junction capacitance (NOTE 2)                                                                                      | $C_J$                              | 60.0         |      |      |      |      |      | pF                 |
| Typical thermal resistance (NOTE 3)                                                                                        | $R_{\theta JA}$<br>$R_{\theta JL}$ | 50.0<br>15.0 |      |      |      |      |      | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range                                                                           | $T_J, T_{STG}$                     | -55 to +150  |      |      |      |      |      | $^\circ\text{C}$   |

#### NOTES:

(1) Reverse recovery test conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{rr}=0.25\text{A}$

(2) Measured at 1.0 MHz and applied  $V_R=4.0$  Volts

(3) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3 x 0.3" (8.0 x 8.0mm) copper pad areas

# RATINGS AND CHARACTERISTIC CURVES RS3A THRU RS3K

FIG. 1 - FORWARD CURRENT DERATING CURVE

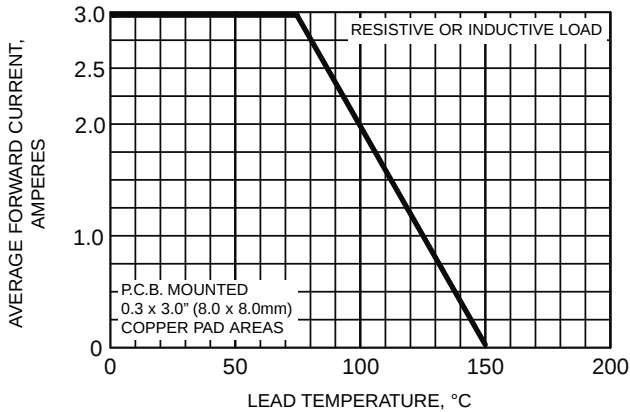


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

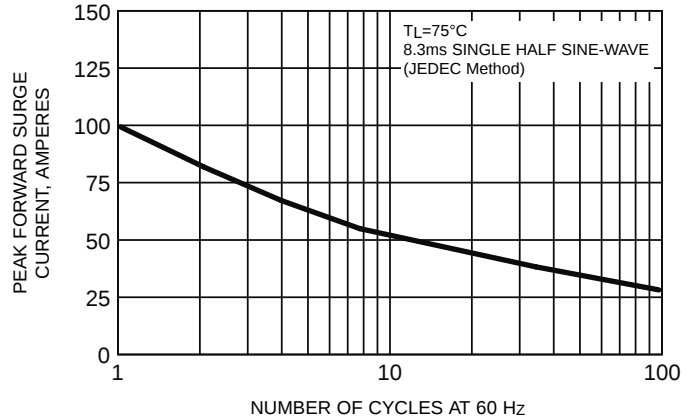


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

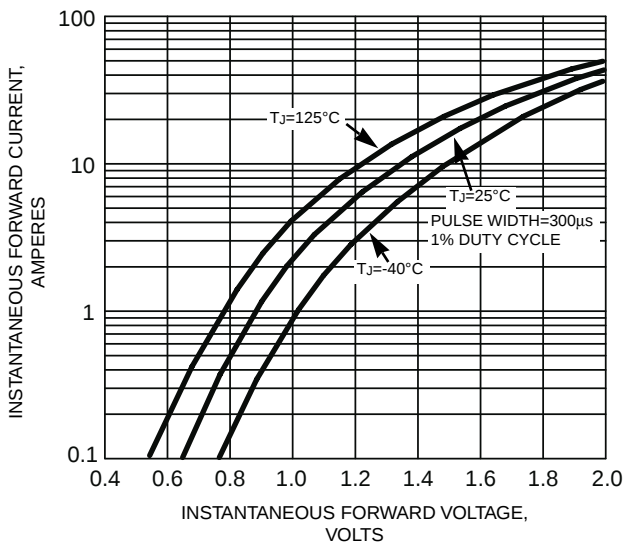


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

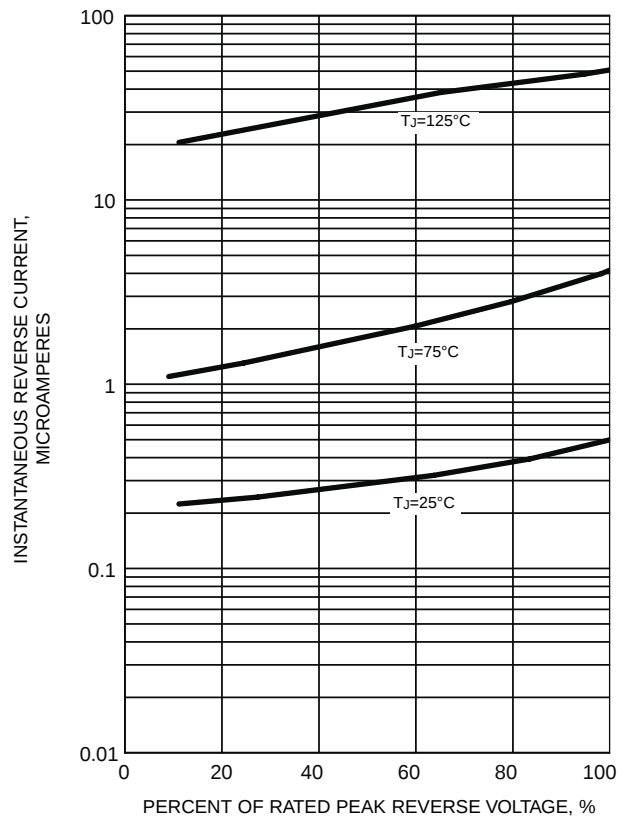


FIG. 5 - TYPICAL TRANSIENT THERMAL IMPEDANCE

