

# US1A THRU US1K

SURFACE MOUNT ULTRAFAST RECTIFIER  
VOLTAGE - 50 to 800 Volts CURRENT - 1.0 Ampere

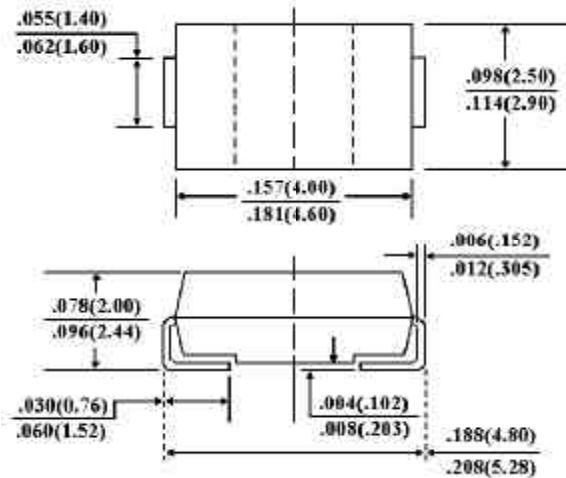
## FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Ultrafast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- High temperature soldering:  
260 °C/10 seconds at terminals

## MECHANICAL DATA

- Case: JEDEC DO-214AC molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Standard packaging: 12mm tape (EIA-481)
- Weight: 0.002 ounce, 0.064 gram

## SMA/DO-214AC



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

Resistive or inductive load. For capacitive load, derate current by 20%.

|   | SYMBOLS          | US1A        | US1B | US1D | US1G  | US1J | US1K  | UNITS |
|---|------------------|-------------|------|------|-------|------|-------|-------|
| Maximum Recurrent 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 $T_L=100$ °C  | $I_{(AV)}$       | 1.0         |      |      |       |      |       | Amps  |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load(JEDEC method) $T_A=55$ °C | $I_{FSM}$        | 30.0        |      |      |       |      |       | Amps  |
| Maximum Instantaneous Forward Voltage at 1.0A   | $V_F$            | 1.0         |      | 1.4  | 1.7   |      | Volts |       |
| Maximum DC Reverse Current $T_A=25$ °C  | $I_R$            | 10.0        |      |      |       |      |       | µgA   |
| At Rated DC Blocking Voltage $T_A=100$ °C   |                  | 100         |      |      |       |      |       |       |
| Maximum Reverse Recovery Time (Note 1) $T_J=25$ °C  | $T_{RR}$         | 50.0        |      |      | 100.0 |      | nS    |       |
| Typical Junction capacitance (Note 2)   | $C_J$            | 17          |      |      |       |      |       | pF    |
| Maximum Thermal Resistance (Note 3)   | $R_{\theta KJL}$ | 30          |      |      |       |      |       | °C/W  |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$   | -50 to +150 |      |      |       |      |       | °C    |

## NOTES:

1. Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{rr}=0.25A$
2. Measured at 1 MHz and Applied reverse voltage of 4.0 volts
3.  $8.0mm^2$  (.013mm thick) land areas

RATING AND CHARACTERISTIC CURVES

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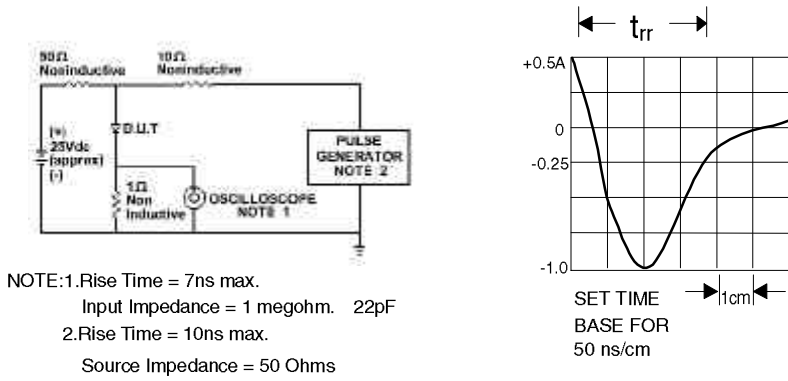


Fig. 1-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

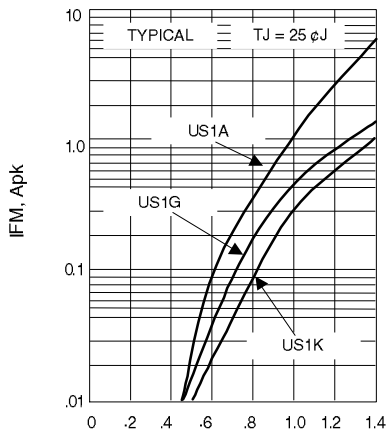


Fig. 2-FORWARD CHARACTERISTICS

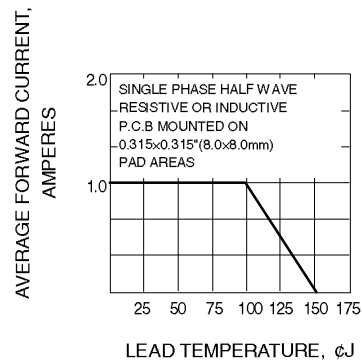


Fig. 3-FORWARD CURRENT DERATING CURVE

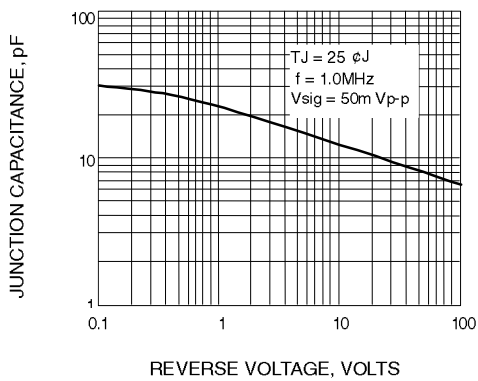


Fig. 4-TYPICAL JUNCTION CAPACITANCE

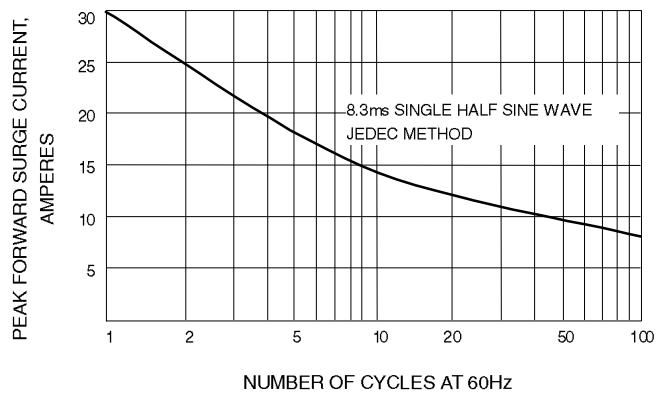


Fig. 5-PEAK FORWARD SURGE CURRENT