

# US1A THRU US1M

VOLTAGE RANGE

50 to 1000 Volts

CURRENT

1.0 Ampere

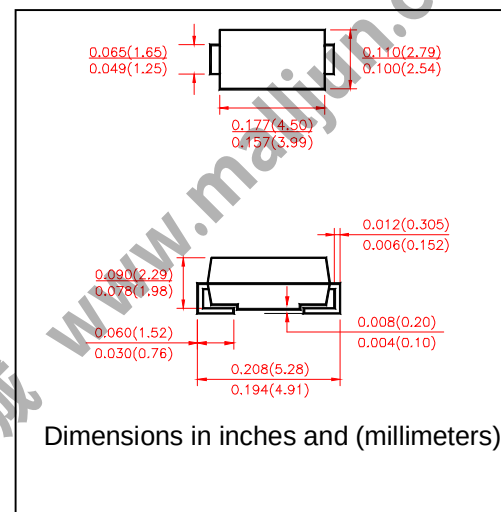
## FEATURES

- Plastic package has underwrites laboratory flammability Classification 94V-0
- Built-in strain relief, ideal for automated placement
- Glass passivated chip junction
- Fast switching for high efficiency
- High temperature soldering 260°C/10 second

## MECHANICAL DATA

- Case: JEDED DO-214AC molded plastic over glass passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.002ounce, 0.064 gram

DO-214AC(SMA)



## 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%.

|                                                                                                                     |                       | SYMBOLS           | US1A          | US1B | US1D | US1G | US1J | US1K | US1M | UNIT  |
|---------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|---------------|------|------|------|------|------|------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                                             |                       | V <sub>RRM</sub>  | 50            | 100  | 200  | 400  | 600  | 800  | 1000 | Volts |
| Maximum RMS Voltage                                                                                                 |                       | V <sub>RMS</sub>  | 35            | 70   | 140  | 280  | 420  | 560  | 700  | Volts |
| Maximum DC Blocking Voltage                                                                                         |                       | V <sub>DC</sub>   | 50            | 100  | 200  | 400  | 600  | 800  | 1000 | Volts |
| Maximum Average Forward Rectified Current<br>At T <sub>A</sub> =55℃                                                 |                       | I <sub>(AV)</sub> | 1.0           |      |      |      |      |      |      | Amps  |
| Peak Forward Surge Current<br>8.3ms single half sine wave superimposed on<br>rated load (JEDEC Method)              |                       | I <sub>FSM</sub>  | 30            |      |      |      |      |      |      | Amps  |
| Maximum Instantaneous Forward Voltage per at 1.0A                                                                   |                       | V <sub>F</sub>    | 1.0           |      |      | 1.30 | 1.70 |      |      | Volts |
| Maximum DC Reverse Current at rated<br>DC Blocking Voltage                                                          | T <sub>A</sub> = 25℃  | I <sub>R</sub>    | 5.0           |      |      |      |      |      |      | μA    |
|                                                                                                                     | T <sub>A</sub> = 125℃ |                   | 100           |      |      |      |      |      |      |       |
| Typical Reverse Recovery Time Test conditions<br>I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A |                       | t <sub>rr</sub>   | 50            |      |      |      | 100  |      |      | nS    |
| Typical Junction Capacitance<br>(Measured at 1.0MHz and applied reverse voltage of 4.0V)                            |                       | C <sub>J</sub>    | 20            |      |      |      | 15   |      |      | pF    |
| Typical Thermal Resistance (Note 1)                                                                                 |                       | R <sub>θJA</sub>  | 88            |      |      |      |      |      |      | ℃/W   |
|                                                                                                                     |                       | R <sub>θJL</sub>  | 28            |      |      |      |      |      |      |       |
| Operating Junction Temperature                                                                                      |                       | T <sub>J</sub>    | (-55 to +150) |      |      |      |      |      |      | ℃     |
| Storage Temperature Range                                                                                           |                       | T <sub>STG</sub>  | (-55 to +150) |      |      |      |      |      |      | ℃     |

### Notes:

- Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with 0.2×0.2" (5.0 × 5.0mm) copper pad areas.

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## RATING AND CHARACTERISTIC CURVES US1A THRU US1M

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

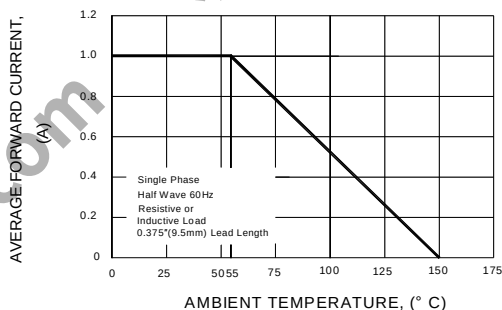


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

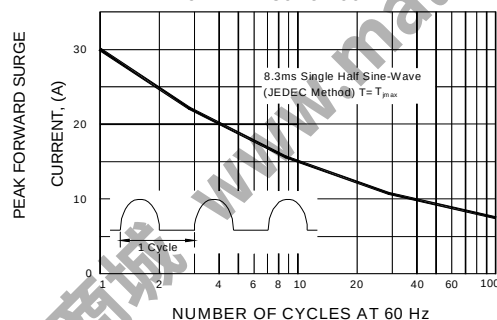


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

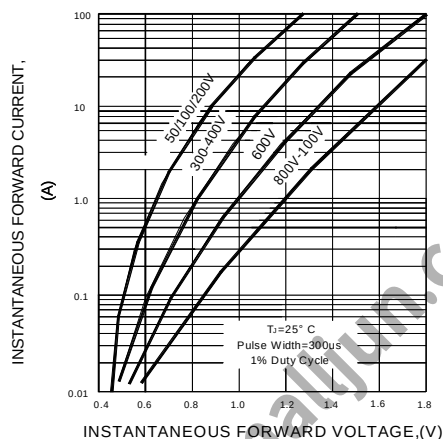


FIG.4-TYPICAL REVERSE CHARACTERISTICS

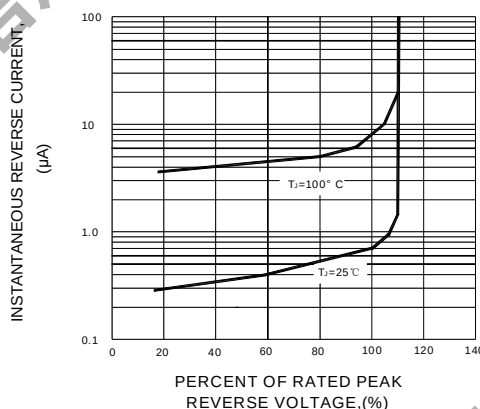


FIG.5-TYPICAL JUNCTION CAPACITANCE

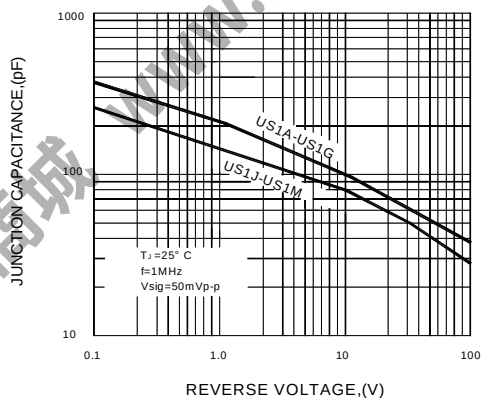
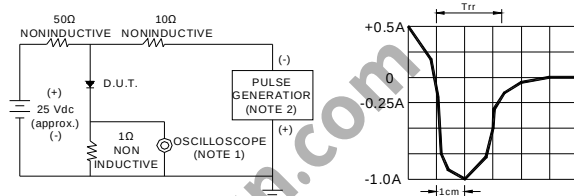


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

SET TIME BASE FOR 50/100ns/cm