

SURFACE MOUNT HIGH EFFICIENCY RECTIFIER

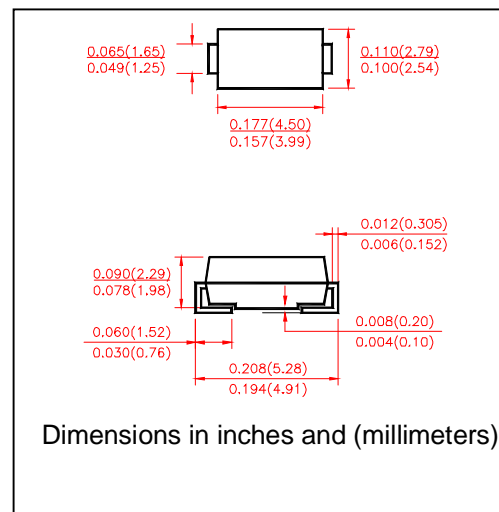
FEATURES

- 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 /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_{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 $T_A=55^\circ\text{C}$ | $I_{(AV)}$ | 1.0 | | | | | | | Amps |
| Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method) | I_{FSM} | 30 | | | | | | | Amps |
| Maximum Instantaneous Forward Voltage per at 1.0A | V_F | 1.0 | | | 1.30 | 1.70 | | | Volts |
| Maximum DC Reverse Current at rated DC Blocking Voltage | I_R | $T_A = 25^\circ\text{C}$ 5.0 | | | | | | | μA |
| | | $T_A = 125^\circ\text{C}$ 100 | | | | | | | |
| Typical Reverse Recovery Time Test conditions $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$ | t_{rr} | 50 | | | | 100 | | | nS |
| Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V) | C_J | 20 | | | | 15 | | | pF |
| Typical Thermal Resistance (Note 1) | $R_{\theta JA}$ | 88 | | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 28 | | | | | | | |
| Operating Junction Temperature | T_J | (-55 to +150) | | | | | | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | (-55 to +150) | | | | | | | $^\circ\text{C}$ |

Notes:

1. Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with $0.2 \times 0.2''$ ($5.0 \times 5.0\text{mm}$) copper pad areas.

RATING AND CHARACTERISTIC CURVES US1A THRU US1M

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

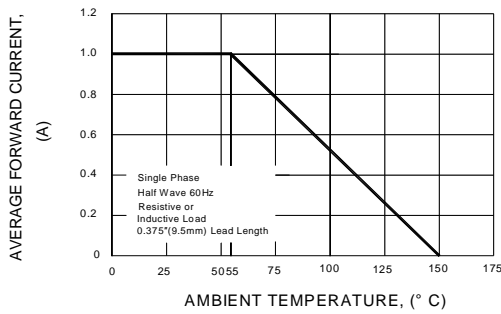


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

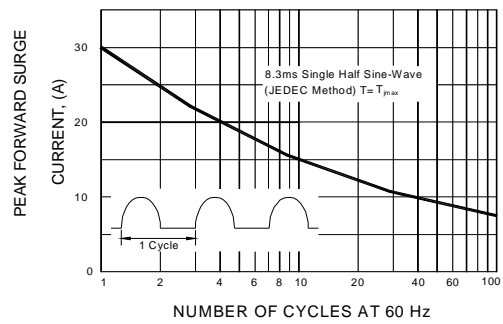


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

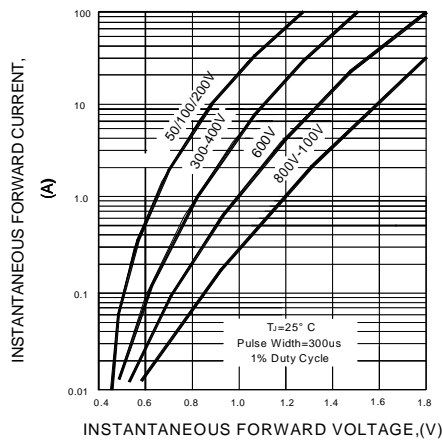


FIG.4-TYPICAL REVERSE CHARACTERISTICS

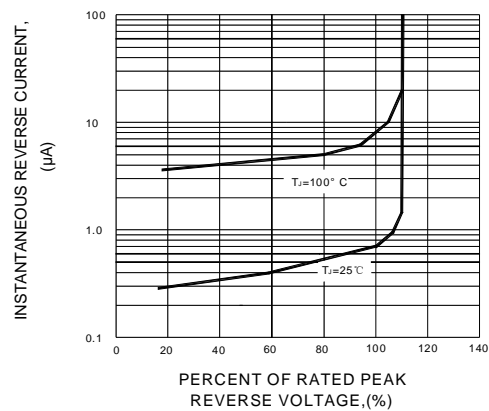


FIG.5-TYPICAL JUNCTION CAPACITANCE

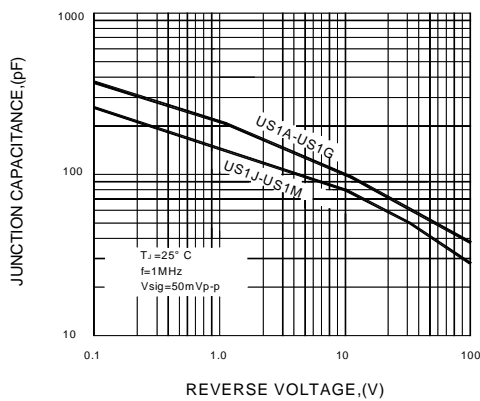
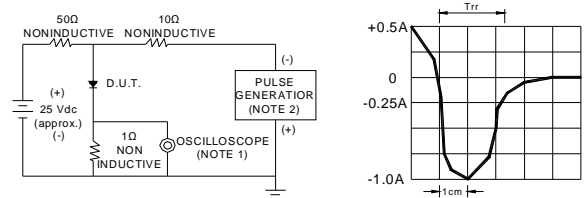


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

SET TIME BASE FOR 50/100ns/cm