

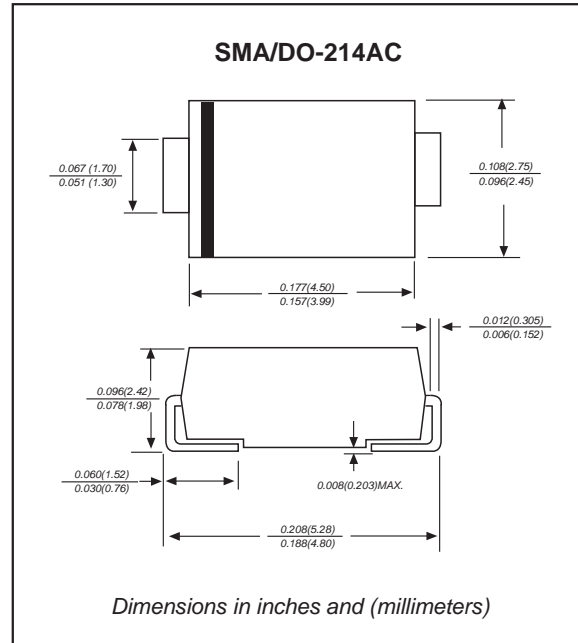
Features

- ▶ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ▶ For surface mounted applications
- ▶ Ultra fast switching for high efficiency
- ▶ Low reverse leakage
- ▶ Built-in strain relief, ideal for automated placement
- ▶ High forward surge current capability
- ▶ High temperature soldering guaranteed 260 C/10 seconds at terminals
- ▶ Glass passivated chip junction

Mechanical data

- ▶ **Case:** JEDEC SMA/DO-214AC molded plastic body
- ▶ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ▶ **Polarity:** Color band denotes cathode end
- ▶ **Mounting Position:** Any

Package outline

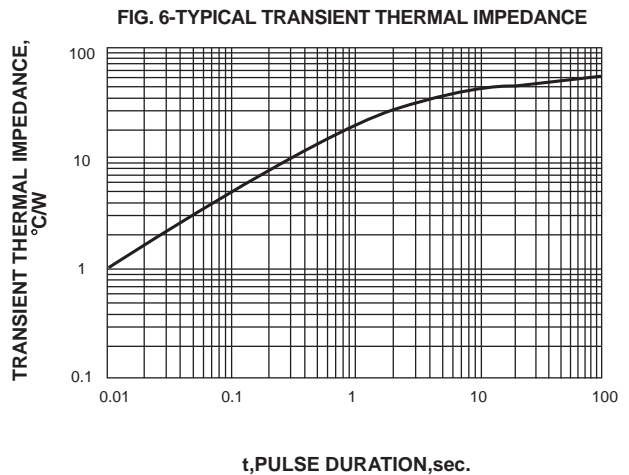
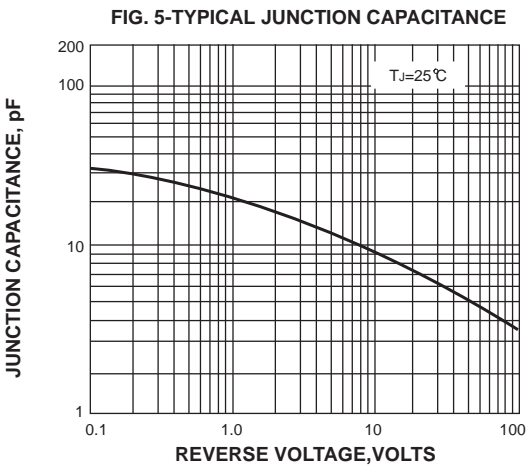
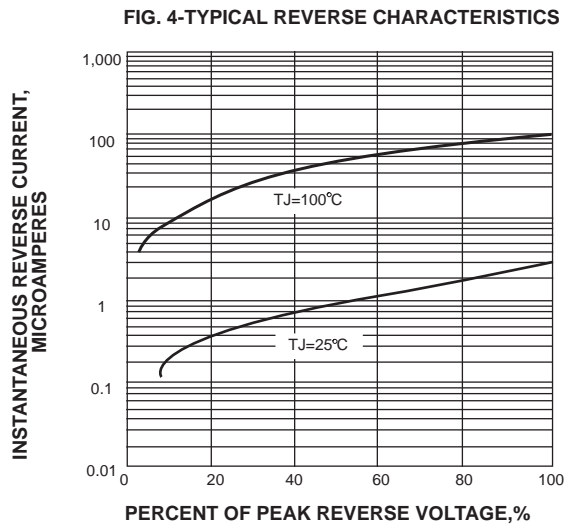
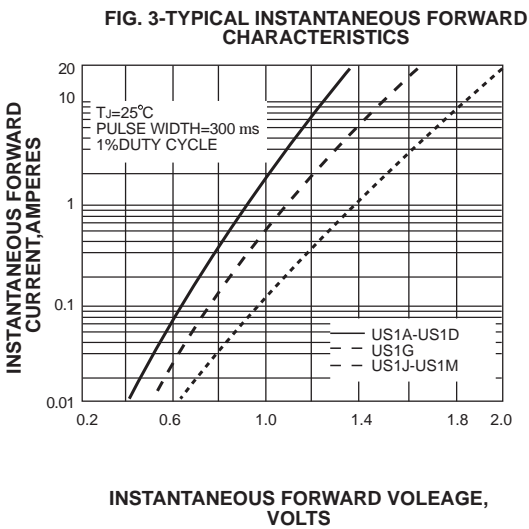
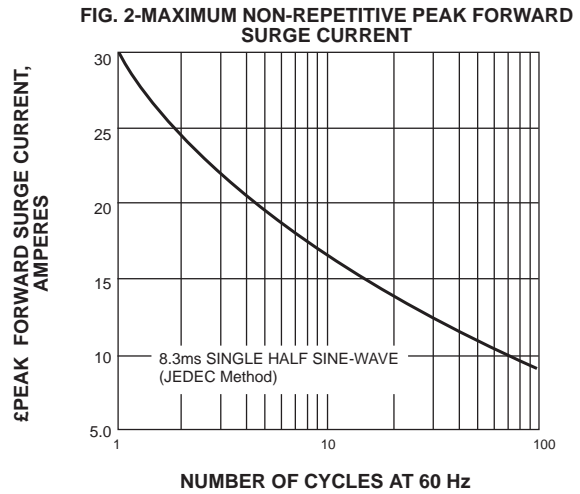
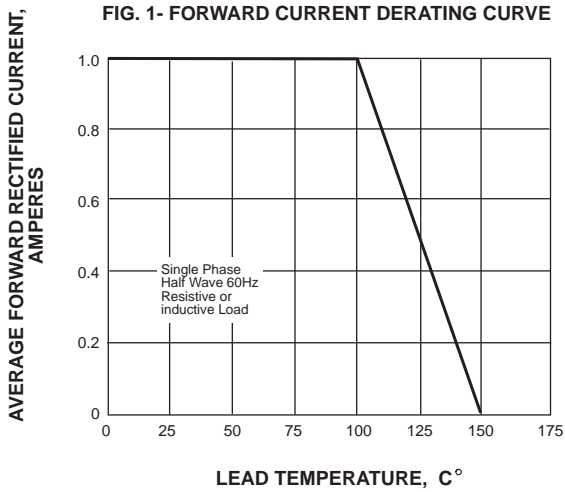


Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| | SYMBOLS | US1A | US1B | US1D | US1G | US1J | US1K | US1M | UNITS |
|---|-----------------|-------------|------|------|------|------|------|------|--------------------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current at $T_L=100^\circ\text{C}$ | $I_{(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 30.0 | | | | | | | A |
| Maximum instantaneous forward voltage at 1.0A | V_F | 1.0 | | 1.4 | 1.7 | | | V | |
| Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$ | I_R | 5.0 | | | 50.0 | | | | μA |
| Maximum reverse recovery time (NOTE 1) | t_{rr} | 50 | | | 75 | | | ns | |
| Typical junction capacitance (NOTE 2) | C_J | 15.0 | | | | | | | pF |
| Typical thermal resistance (NOTE 3) | $R_{\theta JA}$ | 75.0 | | | | | | | $^\circ\text{C/W}$ |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

- Note:** 1. Reverse recovery condition $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

Rating and characteristic curves



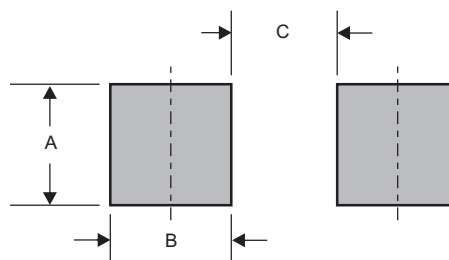
Pinning information

| Pin | Simplified outline | Symbol |
|----------------------------|--------------------|--------|
| Pin1 cathode Pin2 anode | | |

Marking

| Type number | Marking code | Example |
|-------------|--------------|---------|
| US1A | US1A | |
| US1B | US1B | |
| US1D | US1D | |
| US1G | US1G | |
| US1J | US1J | |
| US1K | US1K | |
| US1M | US1M | |

Suggested solder pad layout

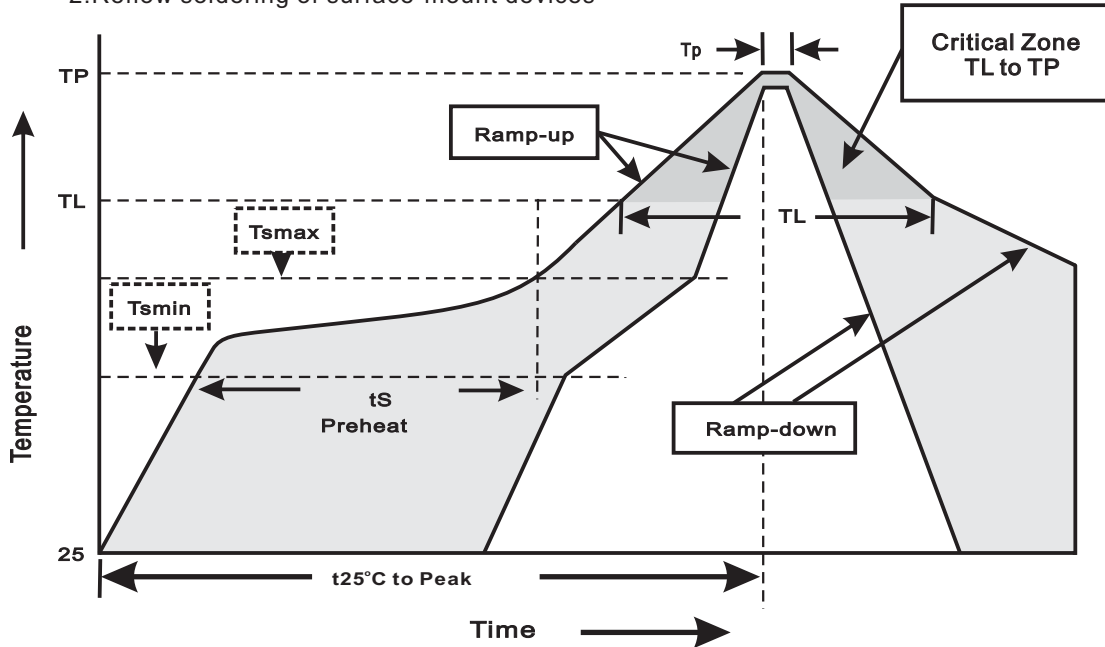


Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---------|--------------|--------------|--------------|
| SMA | 0.110 (2.80) | 0.063 (1.60) | 0.087 (2.20) |

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

| Profile Feature | Soldering Condition |
|--|-----------------------------|
| Average ramp-up rate(TL to TP) | <3°C/sec |
| Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts) | 150°C 200°C 60~120sec |
| Tsmax to TL -Ramp-upRate | <3°C/sec |
| Time maintained above: -Temperature(TL) -Time(tL) | 217°C 60~260sec |
| Peak Temperature(TP) | 255°C-0/+5°C |
| Time within 5°C of actual Peak Temperature(tp) | 10~30sec |
| Ramp-down Rate | <6°C/sec |
| Time 25°C to Peak Temperature | <6minutes |

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