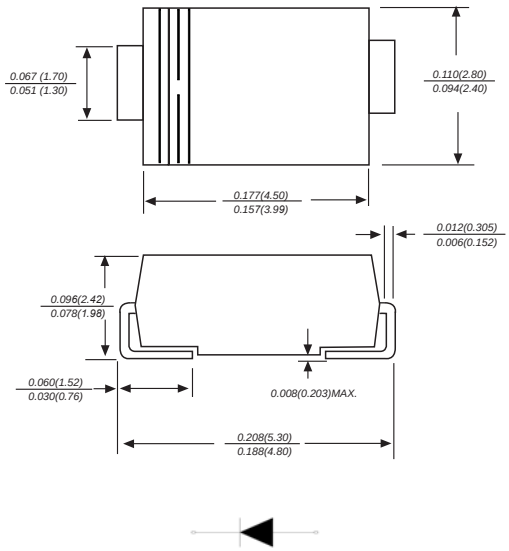
# SURFACE MOUNT ULTRA FAST RECTIFIER

# US2AG THRU US2MG

## FEATURES

1. The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
2. For surface mounted applications
3. Ultra fast switching for high efficiency
4. Low reverse leakage
5. Built-in strain relief,ideal for automated placement
6. High forward surge current capability
7. High temperature soldering guaranteed 250°C/10 seconds at terminals

**DO-214AC/SMA**




Dimensions in inches and (millimeters)

## MECHANICAL DATA

**Case** : JEDEC DO-214AC/SMA Molded plastic body
**Terminals** : Solder plated, solderable per MIL-STD-750, Method 2026
**Polarity** : Polarity symbol marking on body
**Mounting Position** : Any
**Weight** : 0.002 ounce, 0.055 grams

## Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwisespecified.Single phase half-wave 60Hz,resistive or inductive load,for capacitive load current derate by 20%.

| Parameter | SYMBOLS | US2AG | US2BG | US2DG | US2GG | US2JG | US2KG | US2MG | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Marking Code | | US2A | US2B | US2D | US2G | US2J | US2K | US2M | |
| Maximum repetitive peak reverse voltage | $V_{RMM}$ | 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 TL=55℃ | $I_{(AV)}$ | 2.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed onrated load (JEDEC Method) | $I_{FSM}$ | 50 | | | | | | | A |
| Maximum instantaneous forward voltage at 2.0A | $V_F$ | 1.0 | | | 1.30 | 1.65 | | | V |
| Maximum DC reverse current TA=25℃ at rated DC blocking voltage TA=125℃ | $I_R$ | 5.0 100.0 | | | | | | | μA |
| Maximum reverse recovery time (NOTE 1) | trr | 50 | | | | 75 | | | ns |
| Typical junction capacitance (NOTE 2) | $C_J$ | 28.0 | | | | | | | pF |
| Typical thermal resistance (NOTE 3) | $R_{\theta JA}$ | 65.0 | | | | | | | ℃/W |
| Operating junction and storage temperature range | $T_J$,$T_{STG}$ | -55 to +150 | | | | | | | ℃ |

**Note:**1.Reverse recovery condition IF=0.5A,IR=1.0A,Irr=0.25A.
2.P.C.B. mounted with 2.0x2.0"(5.0x5.0cm) copper pad areas.
3.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
4.The typical data above is for reference only.

## Ratings And Characteristic Curves

Fig.1 Forward Current Derating Curve

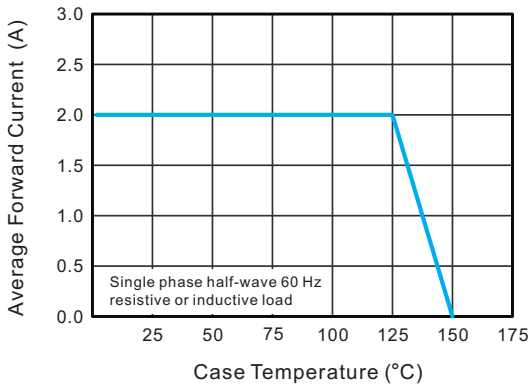



Fig.2 Typical Reverse Characteristics

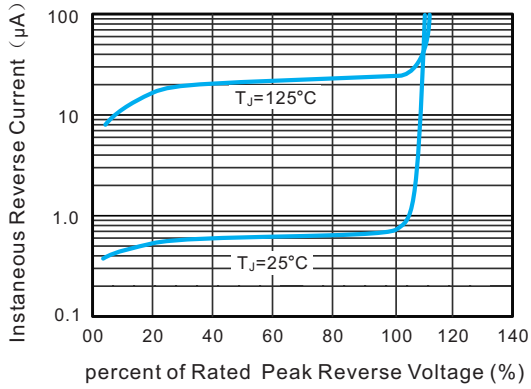



Fig.3 Typical Forward Characteristics

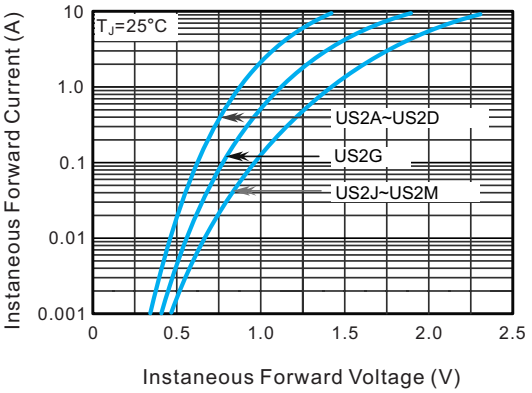
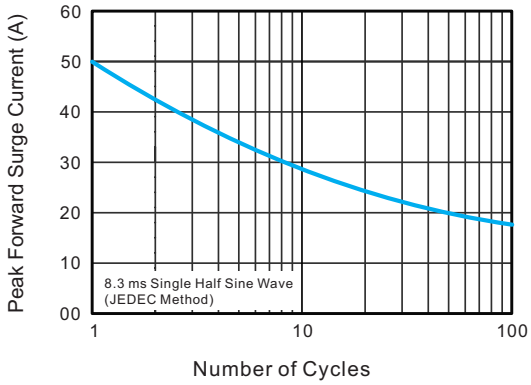



Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



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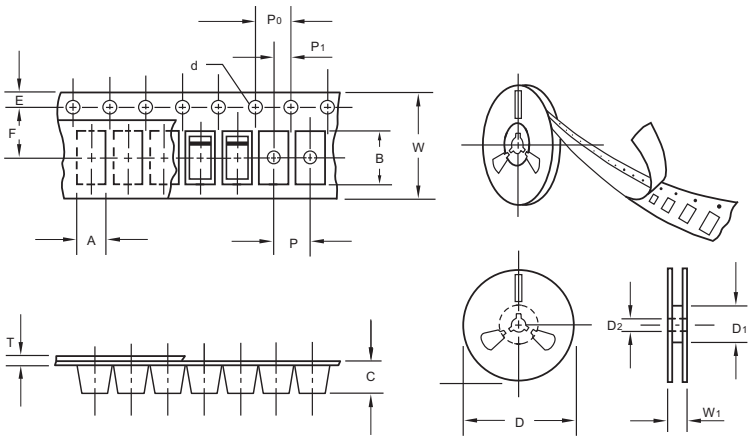
## Packing information




unit:mm

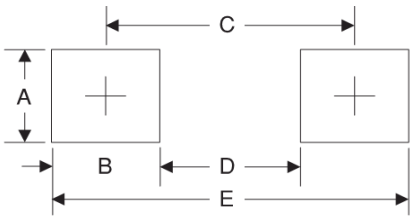
| Item | Symbol | Tolerance | SMA |
|---|---|---|---|
| Carrier width | A | 0.1 | 2.80 |
| Carrier length | B | 0.1 | 5.33 |
| Carrier depth | C | 0.1 | 2.36 |
| Sprocket hole | d | 0.05 | 1.50 |
| 13" Reel outside diameter | D | 2.0 | 330.00 |
| 13" Reel inner diameter | $D_1$ | min | 50.00 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | $D_1$ | min | 62.00 |
| Feed hole diameter | $D_2$ | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 5.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | $P_0$ | 0.1 | 4.00 |
| Embossment center | $P_1$ | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.28 |
| Tape width | W | 0.3 | 12.00 |
| Reel width | $W_1$ | 1.0 | 18.00 |

**Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.**

## Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---|---|---|---|---|---|---|---|---|---|
| SMA | 7" | 2,000 | 4.0 | 4,000 | 183*155*183 | 178 | 382*356*392 | 160,000 | 16.0 |
| SMA | 11" | 5,000 | 4.0 | 10,000 | 290*290*38 | 330 | 310*310*360 | 80,000 | 11.0 |
| SMA | 13" | 7,500 | 4.0 | 15,000 | 335*335*38 | 330 | 350*330*360 | 120,000 | 14.5 |

## Suggested Pad Layout




| Symbol | Unit (mm) | Unit (inch) |
|---|---|---|
| A | 1.68 | 0.066 |
| B | 1.52 | 0.060 |
| C | 3.90 | 0.154 |
| D | 2.41 | 0.095 |
| E | 5.45 | 0.215 |