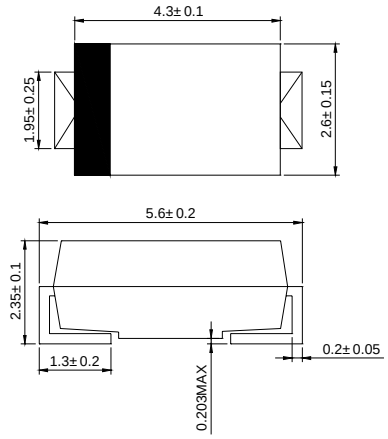
# US1AJ-US1MJ

Surface Mount Rectifiers

**REVERSE VOLTAGE: 50 - 1000 V**
**FORWARD CURRENT: 1.0 A**

**SMAJ**




Dimensions in millimeters

## Features

- ◇ Plastic package has underwriters laboratories flammability classification 94V-0
- ◇ For surface mount applications
- ◇ Glass passivated chip junctions
- ◇ Low profile package
- ◇ Easy pick and place
- ◇ Ultrafast recovery times for high efficiency
- ◇ Low forward voltage,low power loss
- ◇ Built-in strain relief,ideal for automated placement
- ◇ High temperature soldering: 250°C/10 seconds on terminals

## Mechanical Data

- ◇ Case:JEDEC SMAJ,molded plastic body over passivated chip
- ◇ Polarity: Color band denotes cathode end
- ◇ Weight: 0.003 ounces, 0.084 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| | | US1AJ | US1BJ | US1DJ | US1GJ | US1JJ | US1KJ | US1MJ | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Device marking code | | US1A | US1B | US1D | US1G | US1J | US1K | US1M | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | $V_{RWS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forw ard rectified current at $T_L$=110°C | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak forw ard surge current 8.3ms single half-sine-w ave superimposed on rated load(JEDEC Method) | $I_{FSM}$ | 30.0 | | | | | | | A |
| Maximum instantaneous forward voltage at1.0A | $V_F$ | 1.0 | | | | 1.7 | | | V |
| Maximum DC reverse current @$T_A$=25°C<br>at rated DC blockjing voltage @$T_A$=125°C | $I_R$ | 5.0<br>100.0 | | | | | | | μ A |
| Maximum reverse recovery time at $I_F$=0.5A $I_R$=1.0A $I_{rr}$=0.25A | $t_{rr}$ | 50 | | | | 75 | | | ns |
| Typical junction capacitance at 4.0V,1MH$_Z$ | $C_J$ | 20 | | | | 15 | | | pF |
| Maximum thermal resistance (NOTE1) | $R_{\theta JA}$<br>$R_{\theta JL}$ | 55<br>20 | | | | | | | °C/W |
| Operating temperature range | $T_J$ | -55------- +150 | | | | | | | °C |
| Storage temperature range | $T_{STG}$ | -55------- +150 | | | | | | | °C |

NOTE: 1.P.C.B.mounted on 0.2X0.2"(5.0X5.0mm) copper pad area

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## Ratings AND Charactieristic Curves

**FIG.1 – FORWARD CURRENT DERATING CURVE**

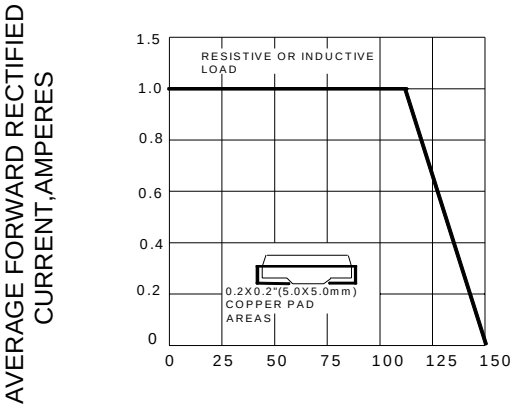


**FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

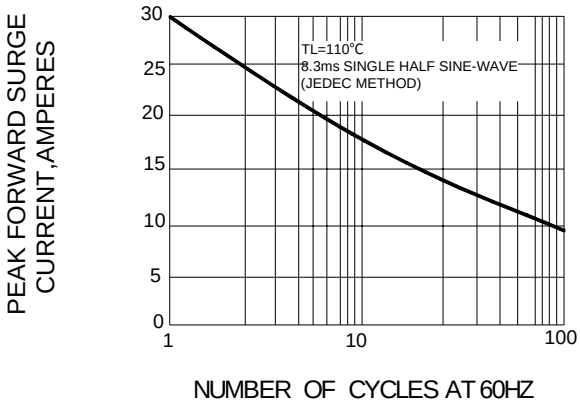


**FIG.3 – TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

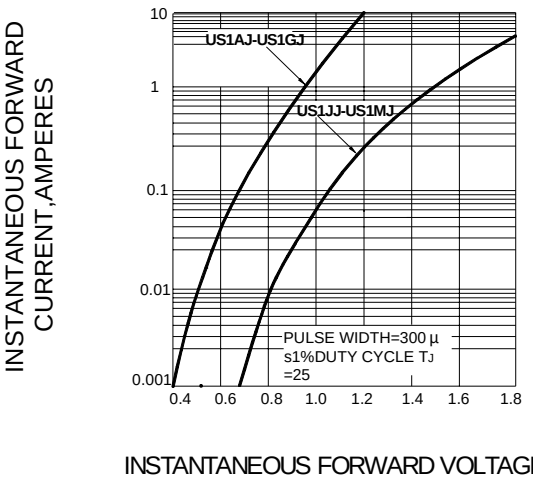


**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**

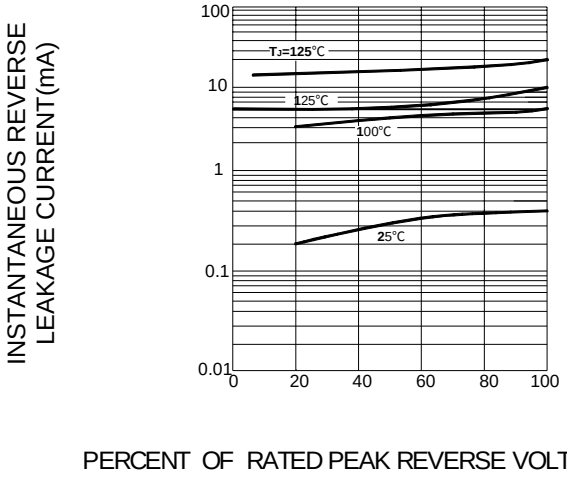


**FIG.5 – TYPICAL JUNCTION CAPACITANCE**

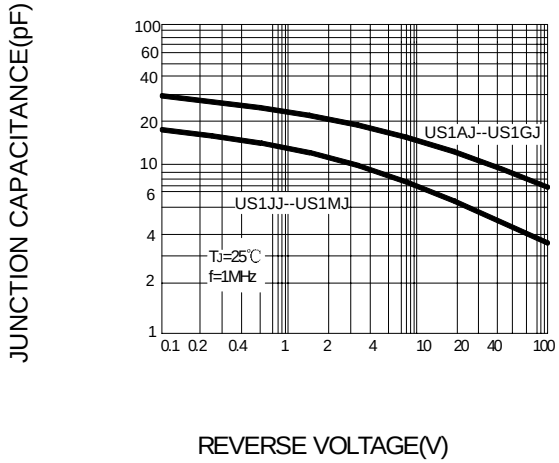


**FIG.6 – TYPICAL TRANSIENT THERMAL IMPEDANCE**