

Features

- The plastic package carries UL Flammability Classification 94V-0
- For surface mounted applications
- 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



Mechanical Characteristics

- Case: SMB(DO-214AA) package molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0034 ounce, 0.095 grams

Absolute Maximum Ratings and Electrical Parameters (TA=25°C unless otherwise specified)

| PARAMETER | SYMBOL | US2A | US2B | US2D | US2G | US2J | US2K | US2M | UNIT | |
|---|---------------------------------|------------|------|------|------|------|------|------|--------------------|---------------|
| 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 | I_{AV} | 2 | | | | | | | A | |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 50 | | | | | | | A | |
| Maximum instantaneous forward voltage at 2A | V_F | 1 | | 1.4 | | 1.7 | | V | | |
| Maximum DC reverse current at rated DC blocking voltage | $T_A=25\text{ }^\circ\text{C}$ | I_R | | | | | | | 5 | μA |
| | $T_A=100\text{ }^\circ\text{C}$ | I_{RT} | | | | | | | 50 | μA |
| Maximum reverse recovery time ^(NOTE 1) | t_{rr} | 50 | | | | 75 | | | ns | |
| Typical junction capacitance ^(NOTE 2) | C_J | 30 | | | | | | | pF | |
| Typical Thermal Resistance Junction to Ambient ^(NOTE 3) | $R_{\theta JA}$ | 65 | | | | | | | $^\circ\text{C/W}$ | |
| Typical Thermal Resistance Junction to Lead ^(NOTE 3) | $R_{\theta JL}$ | 20 | | | | | | | $^\circ\text{C/W}$ | |
| Operating Temperature Range | T_J | -55 to 150 | | | | | | | $^\circ\text{C}$ | |
| Storage Temperature Range | T_{STG} | -55 to 150 | | | | | | | $^\circ\text{C}$ | |

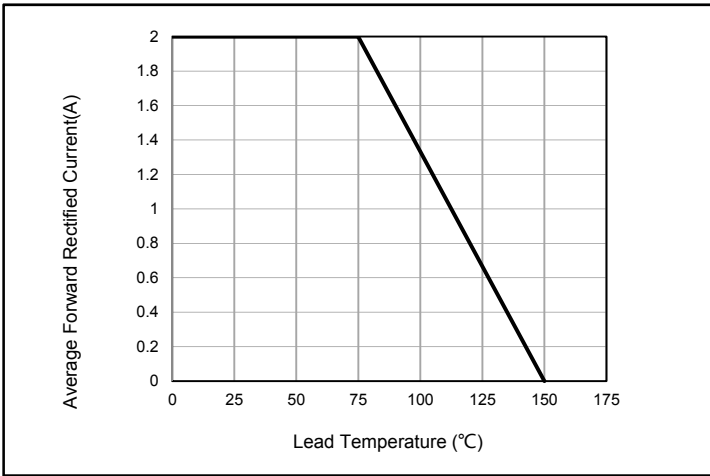
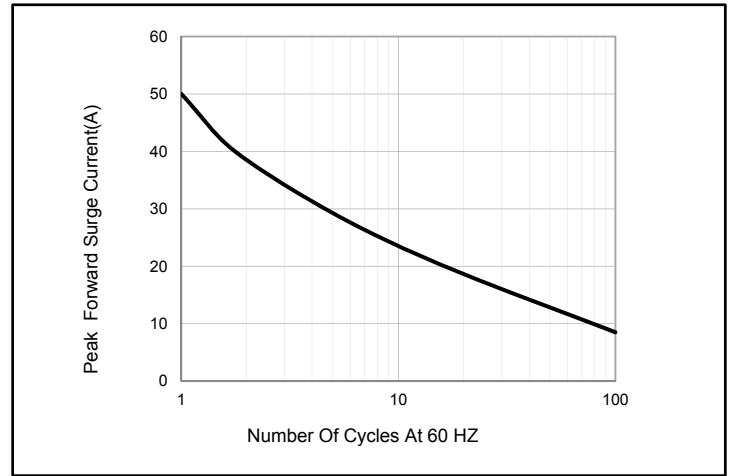
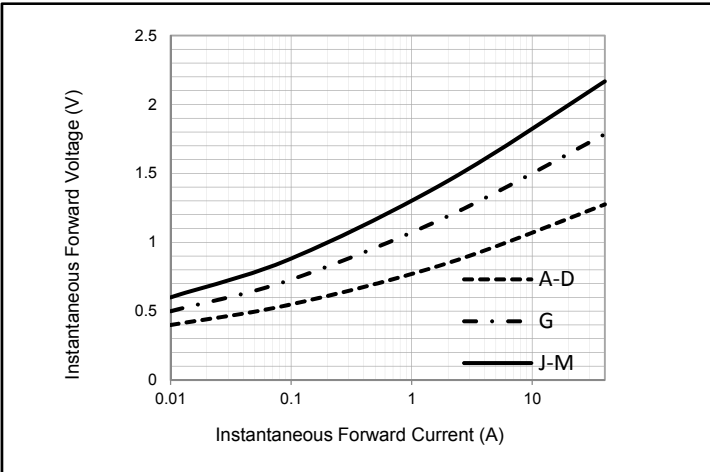
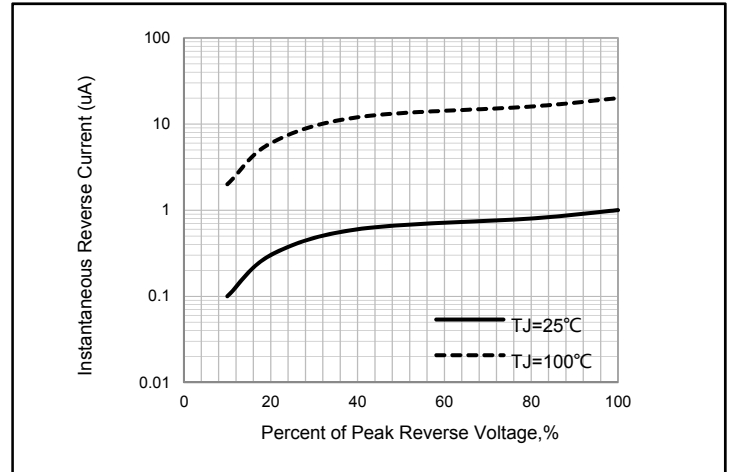
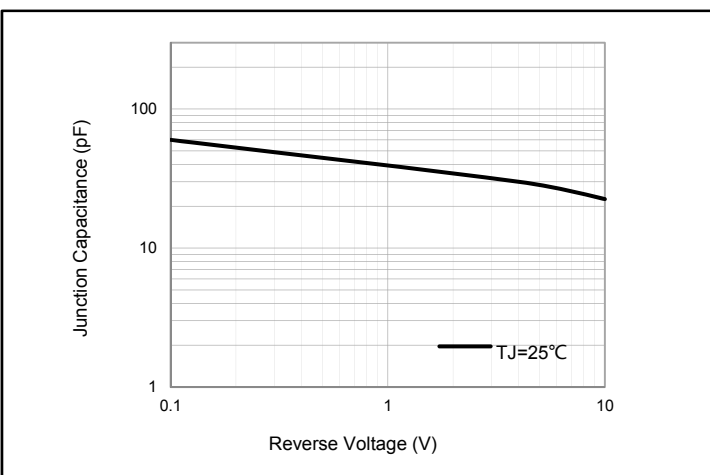
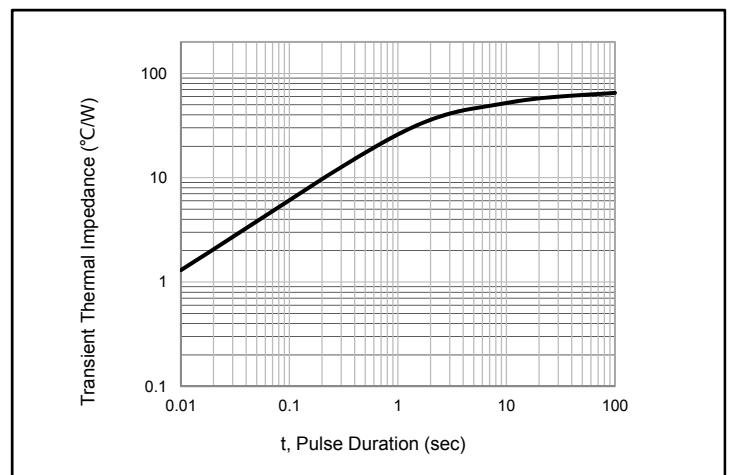
Note1: Reverse recovery condition $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=0.25\text{A}$

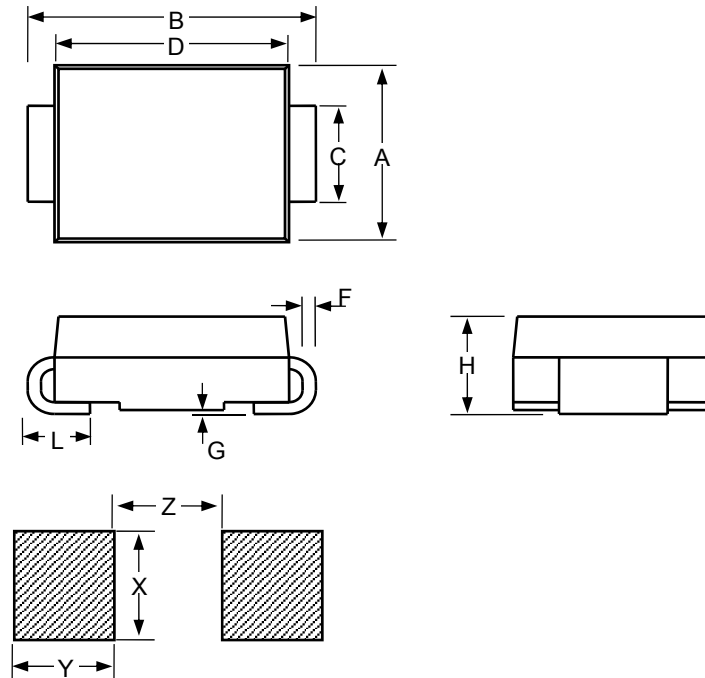
Note2: Measured at 1MHz and applied reverse voltage of 4.0V DC.

Note3: PCB. mounted with 7×7mm copper pad areas

Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SMB | Tape/Reel, 13" reel | 3000 | EIA-481-1 |
| | Tape/Reel, 7" reel | 500 | EIA-481-1 |

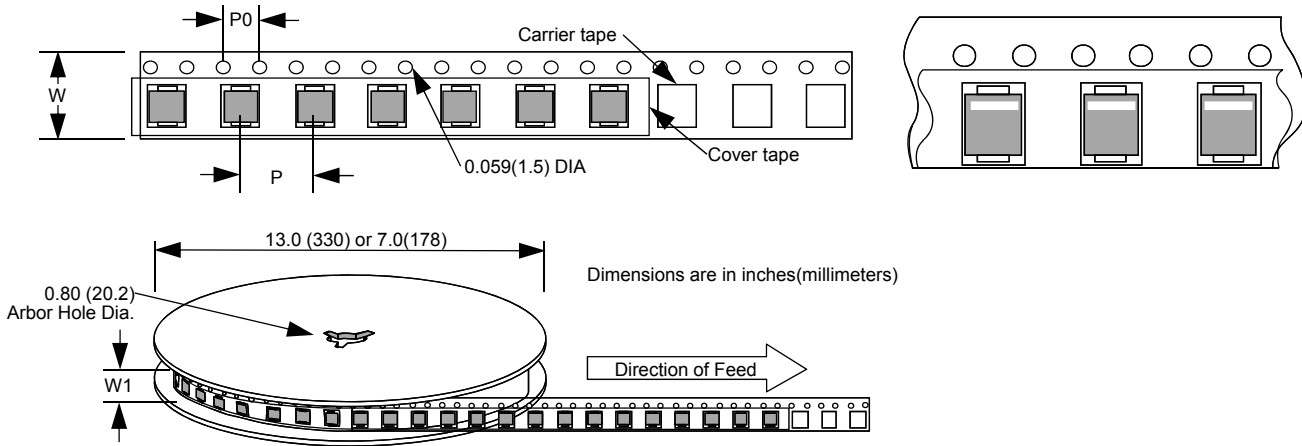

Fig. 1 - Forward Current Derating Curve

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



| SMB | | | | | | |
|-----------|--------|-------|-------|-------------|------|-------|
| Dimension | Inches | | | Millimeters | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.134 | 0.144 | 0.155 | 3.4 | 3.67 | 3.94 |
| B | 0.205 | 0.213 | 0.22 | 5.21 | 5.4 | 5.59 |
| C | 0.075 | 0.079 | 0.083 | 1.9 | 2 | 2.1 |
| D | 0.169 | | 0.185 | 4.3 | | 4.7 |
| L | 0.03 | | 0.06 | 0.76 | | 1.52 |
| F | 0.006 | | 0.012 | 0.152 | | 0.305 |
| G | - | | 0.008 | - | | 0.203 |
| H | 0.085 | 0.091 | 0.096 | 2.15 | 2.3 | 2.45 |
| X | | 0.11 | | | 2.8 | |
| Y | | 0.079 | | | 2 | |
| Z | | 0.079 | | | 2 | |



| Reflow Condition | | Lead-free assembly |
|--|------------------------------------|-------------------------|
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150°C |
| | - Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | - Temperature (T_L) (Liquidus) | 217°C |
| | - Time (t_L) | 60 – 150 secs |
| Peak Temperature (T_P) | | 260 ^{+0/-5} °C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 secs |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (t) | | 8 minutes Max. |
| Do not exceed | | 260°C |

Tape and Reel Specification


| Dimension | Inches | | | Millimeters | | |
|-----------|--------|-------|-----|-------------|------|-----|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| P | | 0.315 | | | 8 | |
| P0 | | 0.157 | | | 4 | |
| W | | 0.472 | | | 12 | |
| W1 | | 0.492 | | | 12.5 | |

Disclaimer
Disclaimer

This document is for reference only, data sheet specifications and its information contained are intended to provide a product description only. Yfsemi Microelectronics Stock Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices). Customers using or selling Yfsemi components for use in such applications do so at their own risk and shall agree to fully indemnify Yfsemi and its subsidiaries harmless against all claims, damages and expenditures.

For additional information, please visit our website <http://www.yfsemi.com>