

# US2D – US2M(LS)

## SURFACE MOUNT ULTRA FAST RECTIFIERS

**REVERSE VOLTAGE – 200 to 1000 Volts  
FORWARD CURRENT – 2.0 Amperes**

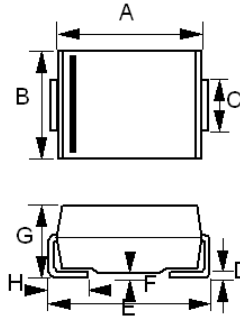
### FEATURES

- Glass passivated chip
- Ultra fast switching for high efficiency
- For surface mounted applications
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Qualified according to AEC-Q101 Rev\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

### MECHANICAL DATA

- Package: Molded plastic
- Package Material: Molding compound, UL Flammability classification 94V-0, "Halogen-free".
- Polarity: Indicated by cathode band
- Weight: 0.003 ounces, 0.093 grams (Approximate)

### SMB



| SMB  |      |      |
|------|------|------|
| DIM. | MIN. | MAX. |
| A    | 4.06 | 4.57 |
| B    | 3.30 | 3.94 |
| C    | 1.96 | 2.21 |
| D    | 0.15 | 0.31 |
| E    | 5.21 | 5.59 |
| F    | 0.05 | 0.20 |
| G    | 2.01 | 2.40 |
| H    | 0.76 | 1.52 |

All Dimensions in millimeter

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

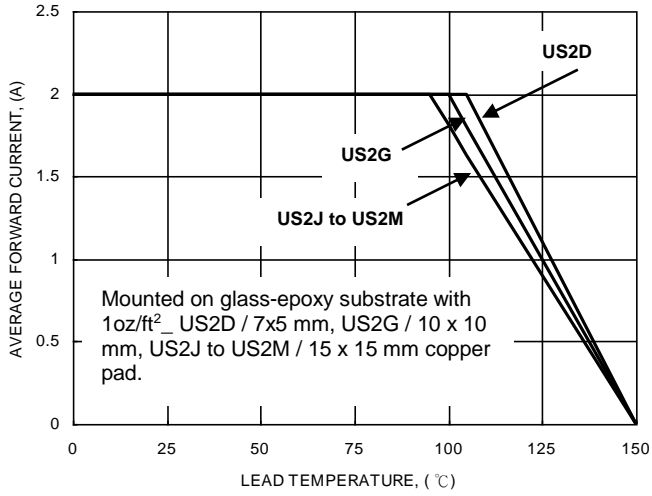
| CHARACTERISTICS   | SYMBOL            | US2D        | US2G | US2J | US2K | US2M | UNIT |
|---|-------------------|-------------|------|------|------|------|------|
| Maximum Repetitive Peak Reverse Voltage   | V <sub>RRM</sub>  | 200         | 400  | 600  | 800  | 1000 | V    |
| Maximum RMS Voltage   | V <sub>RMS</sub>  | 140         | 280  | 420  | 560  | 700  | V    |
| Maximum DC Blocking Voltage   | V <sub>DC</sub>   | 200         | 400  | 600  | 800  | 1000 | V    |
| Maximum Average Forward Rectified Current<br>@T <sub>L</sub> =95°C  | I <sub>AV</sub>   | 2.0         |      |      |      |      | A    |
| Peak Forward Surge 8.3ms single half sine-wave superimposed on rated load                                     | I <sub>FSM</sub>  | 50          |      |      |      |      | A    |
| Maximum Forward Voltage at 2.0A DC  | V <sub>F</sub>    | 1.0         | 1.3  | 1.7  |      |      | V    |
| Maximum DC Reverse Current<br>@T <sub>J</sub> =25°C<br>at Rated DC Blocking Voltage<br>@T <sub>J</sub> =100°C | I <sub>R</sub>    | 5<br>100    |      |      |      |      | uA   |
| Maximum Reverse Recovery Time (Note 4)  | t <sub>rr</sub>   | 50          |      |      | 75   |      | ns   |
| Typical Junction Capacitance (Note 5)   | C <sub>T</sub>    | 30          |      |      |      |      | pF   |
| Typical Thermal Resistance (Note 6)   | R <sub>thJL</sub> | 22          |      |      |      |      | °C/W |
| Operating Junction Temperature Range  | T <sub>J</sub>    | -55 to +150 |      |      |      |      | °C   |
| Storage Temperature Range   | T <sub>STG</sub>  | -55 to +150 |      |      |      |      | °C   |

#### Notes:

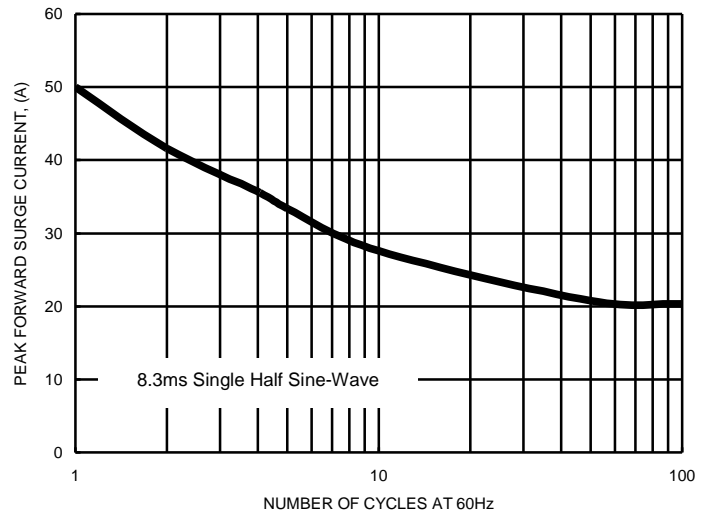
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Reverse Recovery Test Condition: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A.
5. Measured at 1MHz and applied reverse voltage of 4.0VDC.
6. Thermal Resistance junction to Lead.

**RATING AND CHARACTERISTIC CURVES**  
**US2D – US2M**

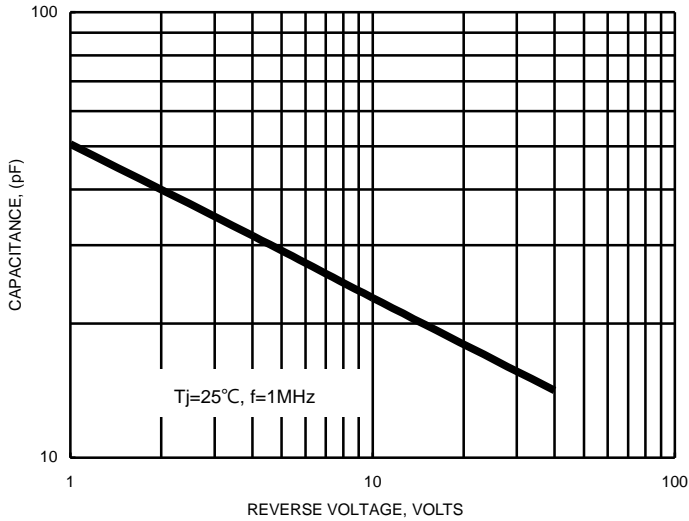
**FIG.1- FORWARD CURRENT DERATING CURVE**



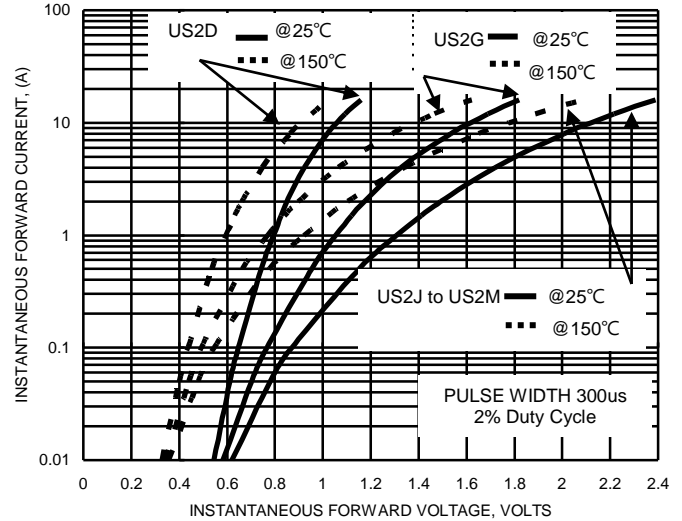
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



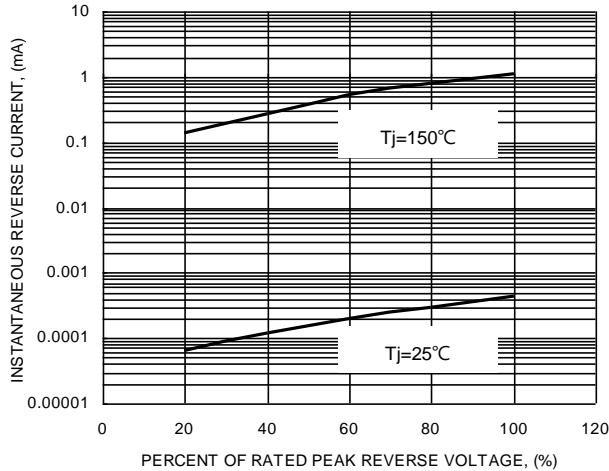
**FIG.3- TYPICAL JUNCTION CAPACITANCE**



**FIG.4- TYPICAL FORWARD CHARACTERISTICS**



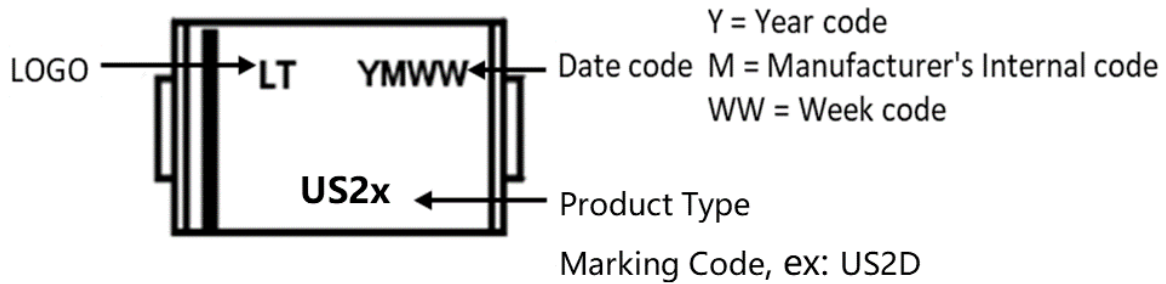
**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



### Ordering Information:

| Part Number | Package | Packing |             |
|-------------|---------|---------|-------------|
|             |         | Qty.    | Carrier     |
| US2D_HF     | SMB     | 3000pcs | Tape & Reel |
| US2G_HF     | SMB     | 3000pcs | Tape & Reel |
| US2J_HF     | SMB     | 3000pcs | Tape & Reel |
| US2K_HF     | SMB     | 3000pcs | Tape & Reel |
| US2M_HF     | SMB     | 3000pcs | Tape & Reel |

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