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A Product Line of Diodes Incorporated | LITE-ON SEMICONDUCTOR

# FUS1DE

## SURFACE MOUNT FAST RECOVERY RECTIFIERS

**REVERSE VOLTAGE – 200 Volts**
**FORWARD CURRENT – 1.0 Amperes**

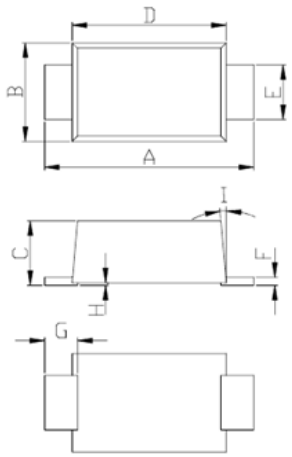
### FEATURES

- Fast switching for high efficiency
- For surface mounted applications
- Glass passivated chip
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- 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: JEDEC DO-219AA
- Package Material: "Green" molding compound, UL Flammability classification 94V-0, "Halogen-free".
- Terminals: Lead Free Plating (Matte Tin Finish.)
- Component in accordance to RoHs 2002/95/EC
- Marking code: U1D
- Weight: 16.5 mg(Approximate)

### F1A




| F1A | | | |
|---|---|---|---|
| DIM. | MIN. | TYP | MAX. |
| A | 3.50 | 3.80 | 3.90 |
| B | 1.70 | 1.90 | 2.00 |
| C | 0.81 | 1.18 | 1.20 |
| D | 2.70 | 2.80 | 2.90 |
| E | 0.80 | 1.00 | 1.35 |
| F | 0.05 | 0.15 | 0.30 |
| G | 0.35 | 0.60 | 0.85 |
| H | 0.03 | 0.07 | 0.10 |
| I | 0° | 5° | 8° |
| All dimension in millimeter. | | | |

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

### ABSOLUTE RATING

| PARAMETER | | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | $V_{RRM}$ | 200 | V |
| Maximum DC blocking voltage | | $V_{DC}$ | 200 | V |
| Maximum Average rectified forward current | @Tc=90°C | $I_{(AV)}$ | 1.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load | | $I_{FSM}$ | 30 | A |
| Operating and Storage temperature range | | $T_J$, $T_{STG}$ | -55 ~ +150 | °C |

### STATIC ELECTRICAL CHARACTERISTICS

| PARAMETER | TEST CONDITION | | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Forward voltage | $I_F$=1.0A | $T_J$=25°C | $V_F$ | -- | 1.0 | V |
| Leakage current | $V_R$=200V | $T_J$=25°C<br>$T_J$=100°C | $I_R$ | --<br>-- | 5<br>100 | uA |
| Typical junction capacitance (Note 4) | | | $C_J$ | 20 | | pF |

### THERMAL CHARACTERISTICS

| PARAMETER | SYMBOL | TYP | UNIT |
|---|---|---|---|
| Typical Thermal Resistance (Note 5) | $RthJ_A$<br>$RthJ_L$<br>$RthJ_C$ | 100<br>45<br>60 | °C/W |

### DYNAMIC ELECTRICAL CHARACTERISTICS

| PARAMETER | TEST CONDITION | SYMBOL | MAX | UNIT |
|---|---|---|---|---|
| Reverse recovery time | $I_F$=0.5A ,$I_{RR}$=0.25A,$I_R$=1.0A | $T_{RR}$ | 50 | nS |

**Note:**

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. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
5. Thermal resistance test performed in accordance with JESD-51.

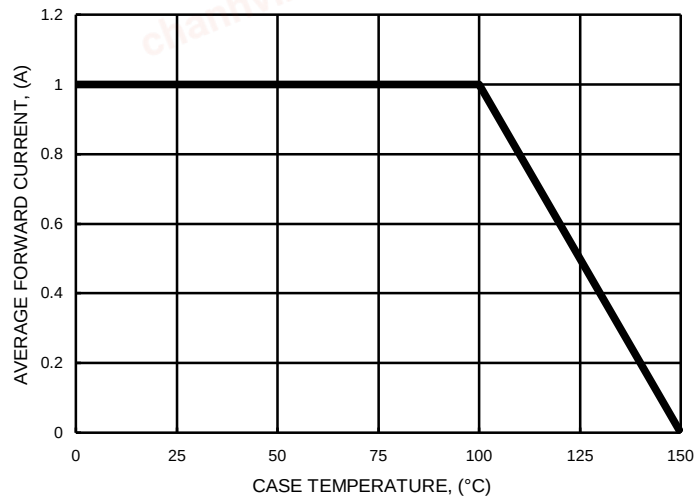
REV.-3, Oct-2021, KSEP10

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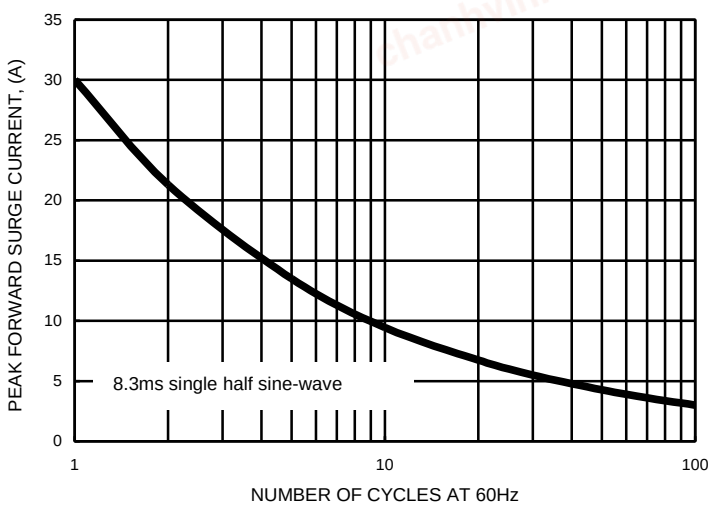
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## RATING AND CHARACTERISTIC CURVES
## FUS1DE

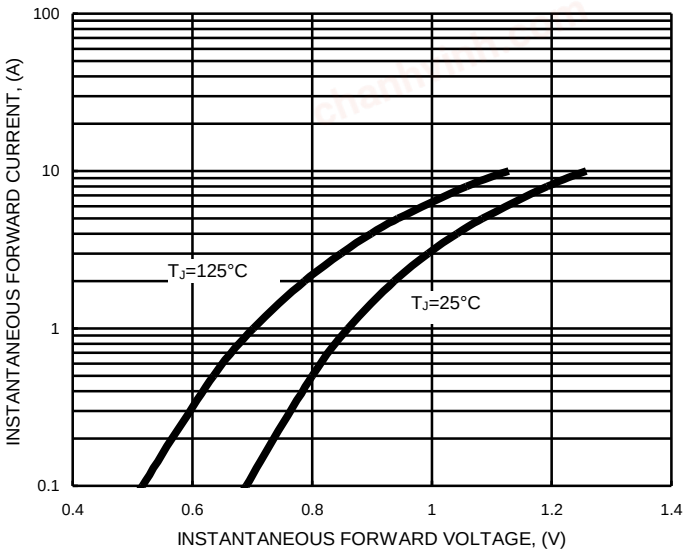
### FIG.1- FORWARD CURRENT DERATING CURVE



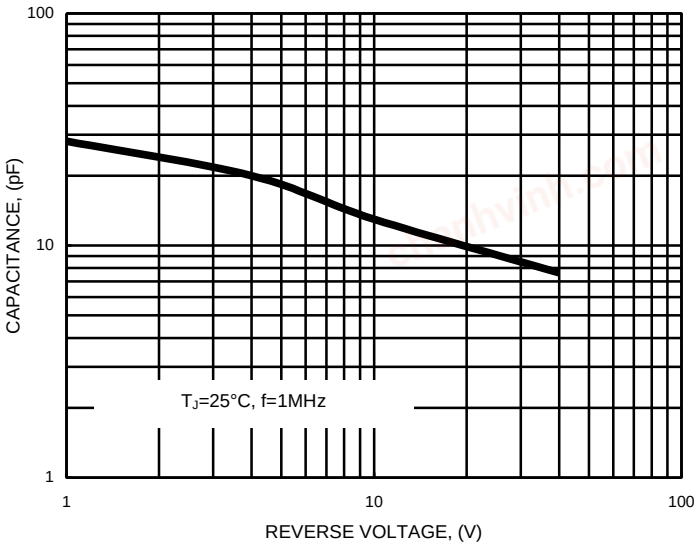

### FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT



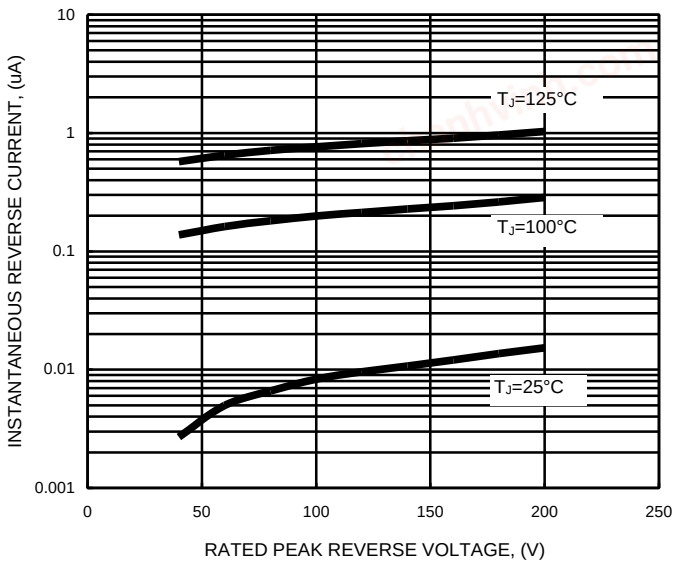

### FIG.3- TYPICAL FORWARD CHARACTERISTICS




### FIG.4- TYPICAL JUNCTION CAPACITANCE




### FIG.5- TYPICAL REVERSE CHARACTERISTICS



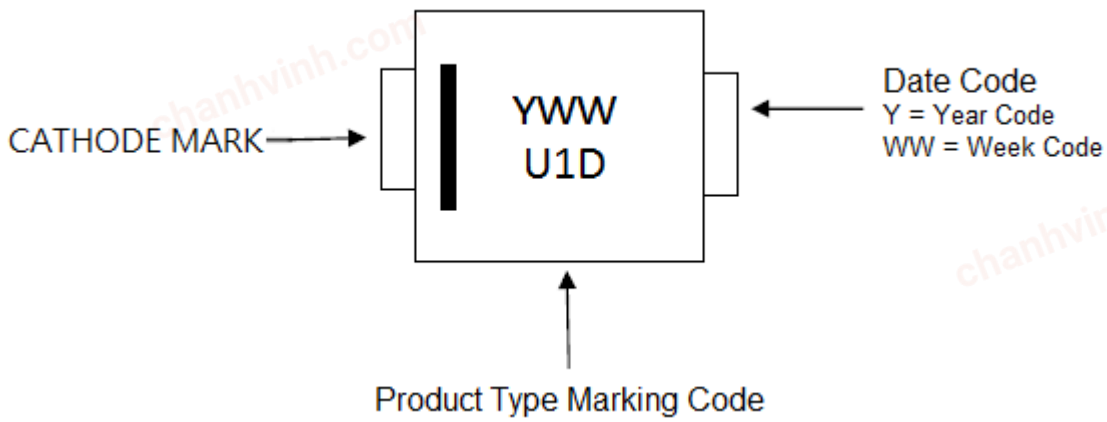
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## Ordering Information :

| Part Number | Package | Packing | |
|---|---|---|---|
| | | Qty. | Carrier |
| FUS1DE-7 | F1A | 2500 | Tape & Reel |
| FUS1DE | F1A | 10000 | Tape & Reel |

## Marking Information :



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