A Product Line of Diodes Incorporated | LITE-ON SEMICONDUCTOR

# ES2D-ES2J(LS)

## SURFACE MOUNT SUPER FAST RECTIFIERS

## REVERSE VOLTAGE – 200 to 600 Volts FORWARD CURRENT – 2.0 Ampere

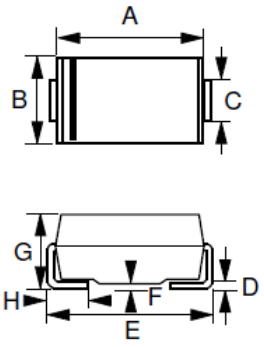
### FEATURES

- Glass passivated chip
- Super 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
- Available in "Green" Package: SMB
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

### MECHANICAL DATA

- Case: Molded plastic
- Case Material: Molding compound, UL Flammability classification 94V-0,"Halogen-free".
- Polarity: Color band denotes cathode
- Weight: 0.093 grams

### 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 | 2.50 |
| H | 0.76 | 1.52 |
| All dimension in millimeter | | |

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| PARAMETER | SYMBOL | ES2D | ES2J | UNIT |
|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 200 | 600 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 140 | 420 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 200 | 600 | V |
| Maximum Average Forward Rectified Current @$T_L$=110°C | $I_{(AV)}$ | 2.0 | | A |
| Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (JEDEC METHOD) | $I_{FSM}$ | 50 | | A |
| Maximum forward Voltage at 2.0A DC | $V_F$ | 0.92 | 1.3 | V |
| Maximum DC Reverse Current @ $T_J$=25°C<br>at Rated DC Blocking Voltage @ $T_J$=125°C | $I_R$ | 5.0<br>350 | | uA |
| Maximum Reverse Recovery Time (Note 4) | $t_{rr}$ | 25 | 35 | ns |
| Typical Reverse Recovery Time | $t_{rr}$ | 20 | 30 | ns |
| Typical Junction Capacitance (Note 5) | $C_T$ | 25 | | pF |
| Typical Thermal Resistance (Note 6) | $R_{thJL}$ | 20 | 25 | °C/W |
| Operating Temperature Range | $T_J$ | -55 to + 150 | | °C |
| Storage Temperature Range | $T_{STG}$ | -55 to + 150 | | °C |

**Note :**

**REV-8, Oct-2021, KSGB01**

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 Conditions :$I_F$=0.5A,$I_R$=1.0A,$I_{rr}$=0.25A.
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Thermal Resistance junction to Lead.

**RATING AND CHARACTERISTIC CURVES**
**ES2D-ES2J(LS)**

FIG.1 - FORWARD CURRENT DERATING CURVE

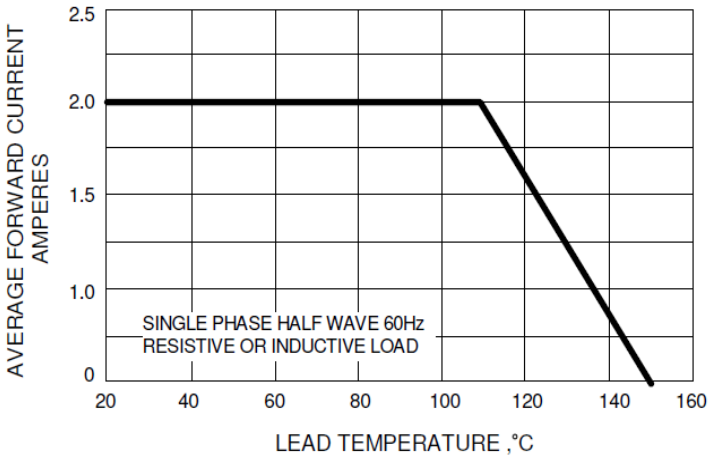



FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

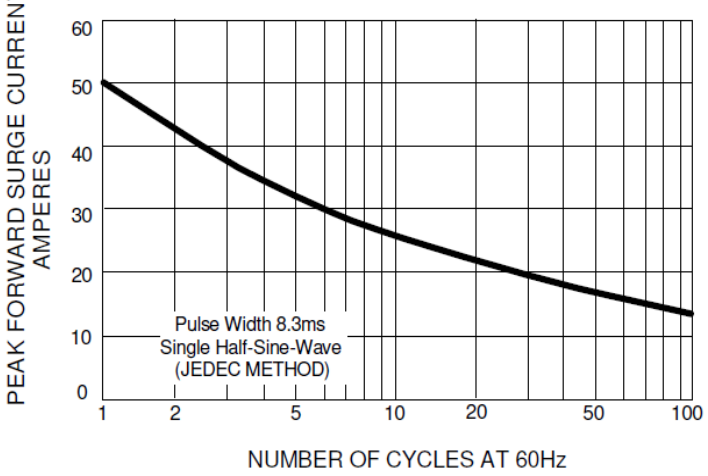



FIG.3 - TYPICAL FORWARD CHARACTERISTICS

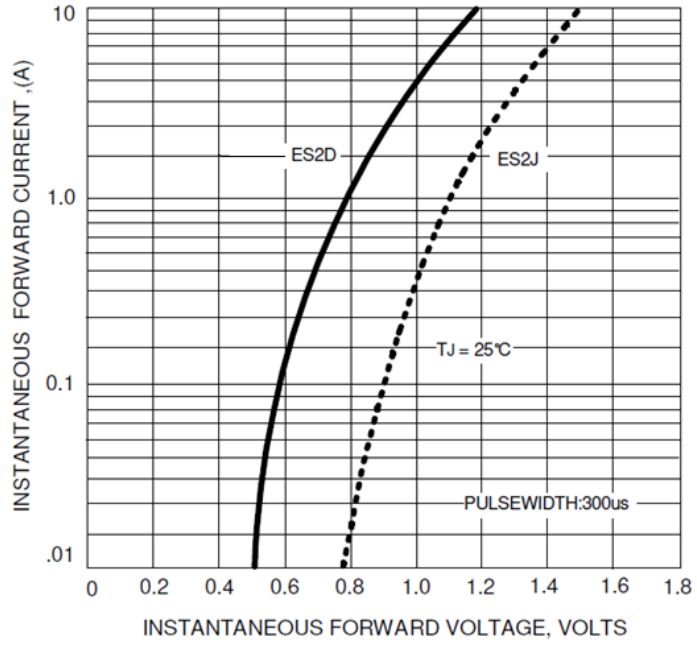
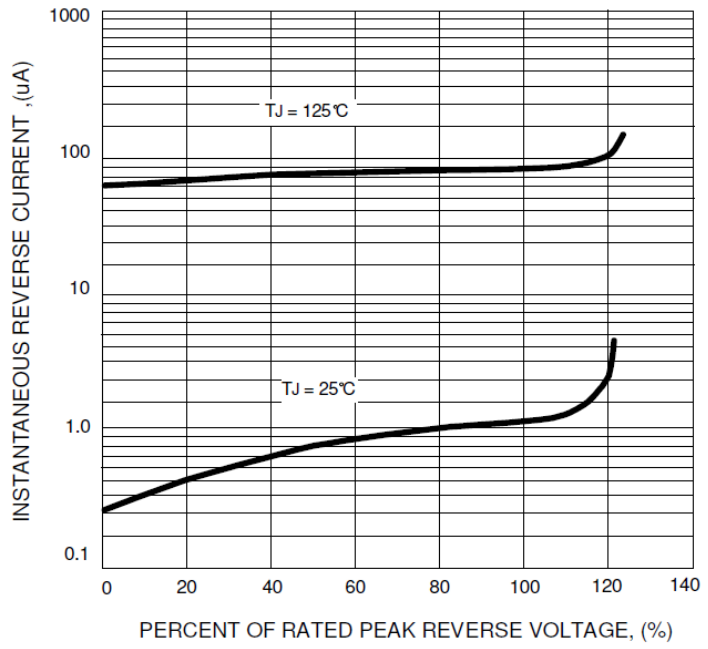


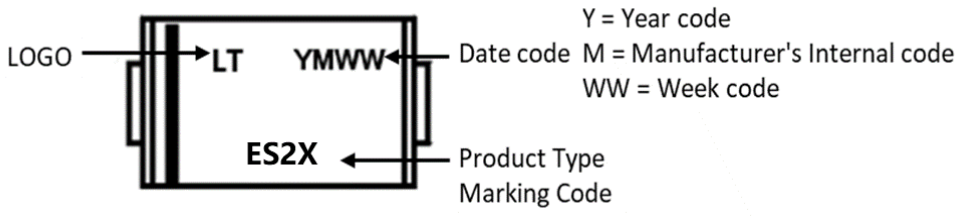

FIG.4 - TYPICAL REVERSE CHARACTERISTICS



## Ordering Information :

| Part Number | Package | Packing | |
|---|---|---|---|
| | | Qty. | Carrier |
| ES2D_HF | SMB | 3000 | Reel |
| ES2J_HF | SMB | 3000 | Reel |

## Marking Information :



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