

ES3AB THRU ES3JB

Super Fast Recovery Rectifier Diode

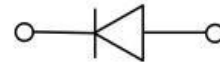
Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Super fast reverse recovery time
- High forward surge capability
- Meets MSL level 1, per J-STD-020,LF maximum peak of 260 °C



Typical Application

For use in high frequency rectification of power supply, inverters, converters, and freewheeling diodes for consumer and telecommunication.



Mechanical Data

- Package: DO-214AA(SMB)
Molding compound meets UL 94 V-0 flammability rating,RoHS-compliant
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Cathode line denotes the cathode end

Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER | Symbol | Unit | Conditions | ES3 | | | | | | | | |
|-------------------------------------|-------------|------|---|------------|-----|-----|-----|-----|-----|-----|-----|--|
| | | | | AB | BB | CB | DB | FB | GB | HB | JB | |
| Repetitive Peak Reverse Voltage | V_{RRM} | V | | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | |
| Average Forward Current | $I_{F(AV)}$ | A | 60Hz Half-sine wave, Resistance load, $T_L=100^\circ\text{C}$ | 3.0 | | | | | | | | |
| Surge(Nonrepetitive)Forward Current | I_{FSM} | A | 60HZ Half-sine wave, 1 cycle, $T_a=25^\circ\text{C}$ | 90 | | | | | | | | |
| Storage Temperature | T_{stg} | °C | | -55 ~ +150 | | | | | | | | |
| Junction Temperature | T_j | °C | | -55 ~ +150 | | | | | | | | |

Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | Symbol | Unit | Conditions | ES3 | | | | | | | | |
|-------------------------------|------------------|---------------|---|------------------|----|----|-----|----|----|-----|----|--|
| | | | | AB | BB | CB | DB | FB | GB | HB | JB | |
| Peak Forward Voltage | V_{FM} | V | $I_F=3.0\text{A}$ | 0.95 | | | 1.3 | | | 1.7 | | |
| Peak Reverse Current | I_{RRM1} | μA | $V_{RM}=V_{RRM}$ | | | | 10 | | | | | |
| | I_{RRM2} | | | | | | 500 | | | | | |
| Maximum reverse recovery time | T_{rr} | ns | $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$ | 35 | | | | | | | | |
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | °C/W | Between junction and ambient | 47 ¹⁾ | | | | | | | | |
| | $R_{\theta J-L}$ | | Between junction and terminal | 12 ¹⁾ | | | | | | | | |

Notes:

¹⁾ Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas



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■ Characteristics (Typical)

FIG1: Forward Current Derating Curve

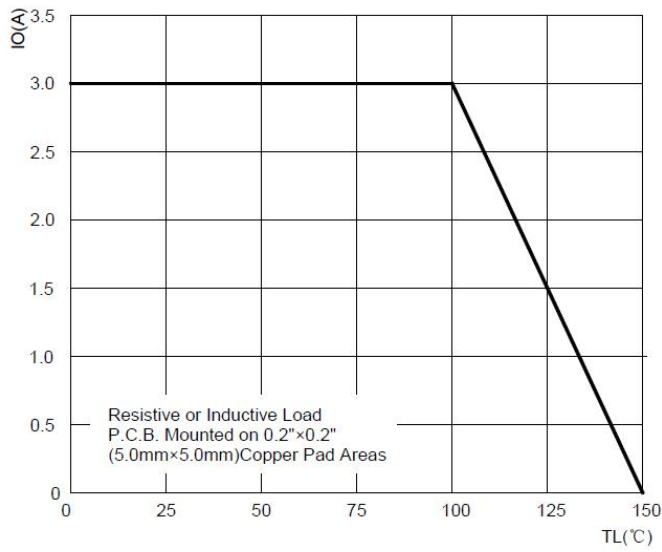


FIG2: Maximum Non-Repetitive Forward Surge Current

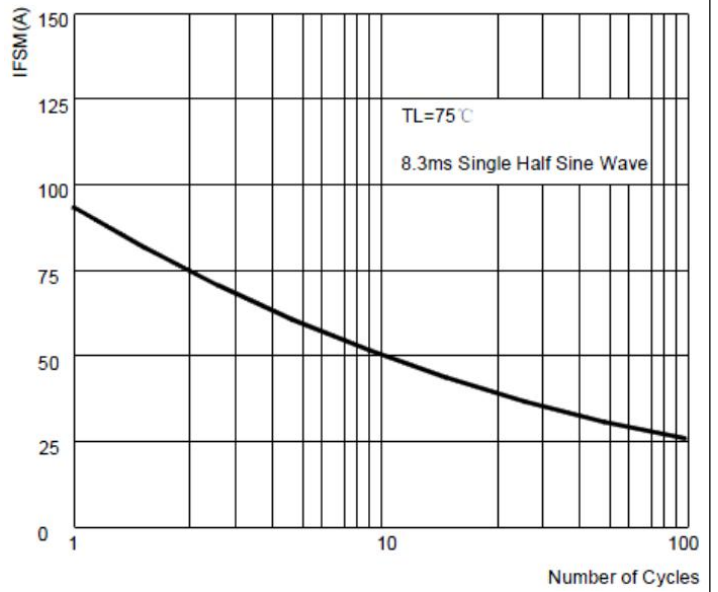


FIG3: Typical Forward Characteristics

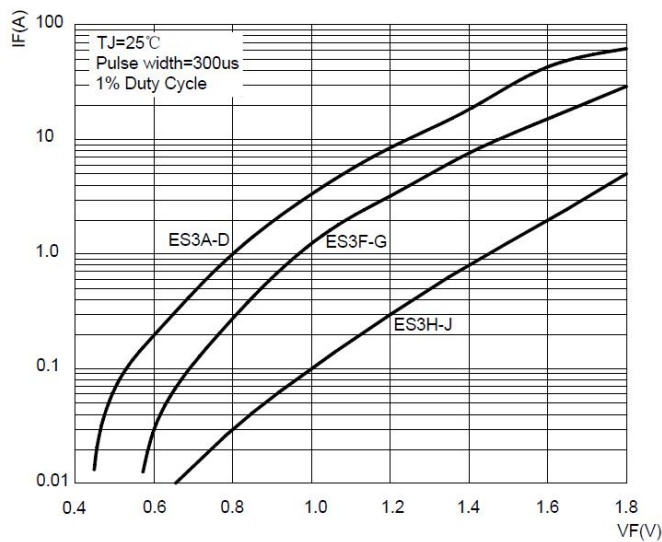


FIG4: Typical Reverse Characteristics

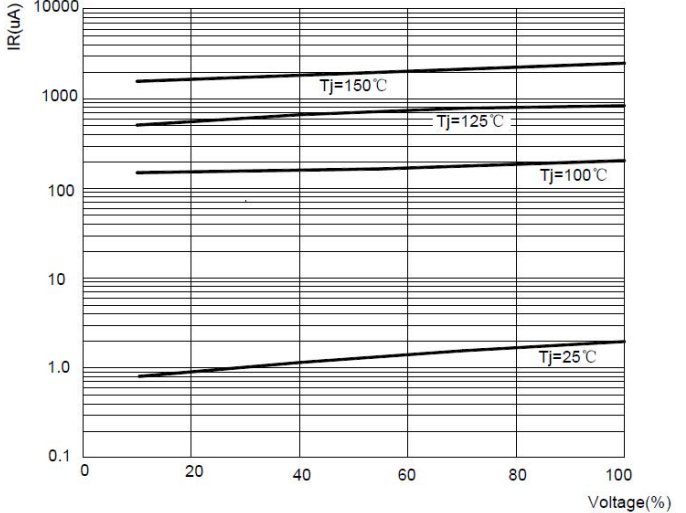
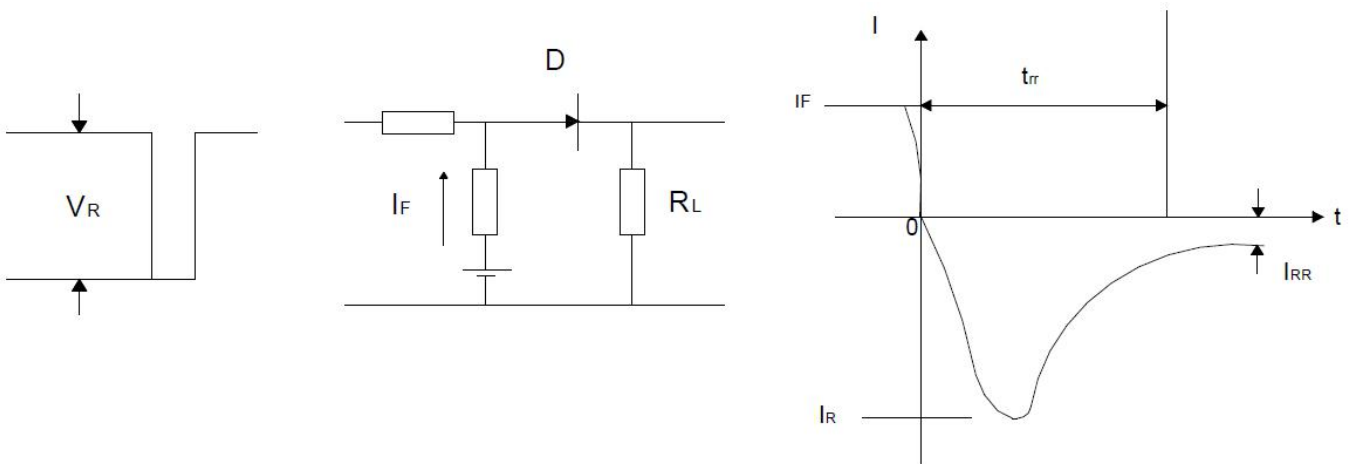


FIG5: Diagram of circuit and Testing wave form of reverse recovery time

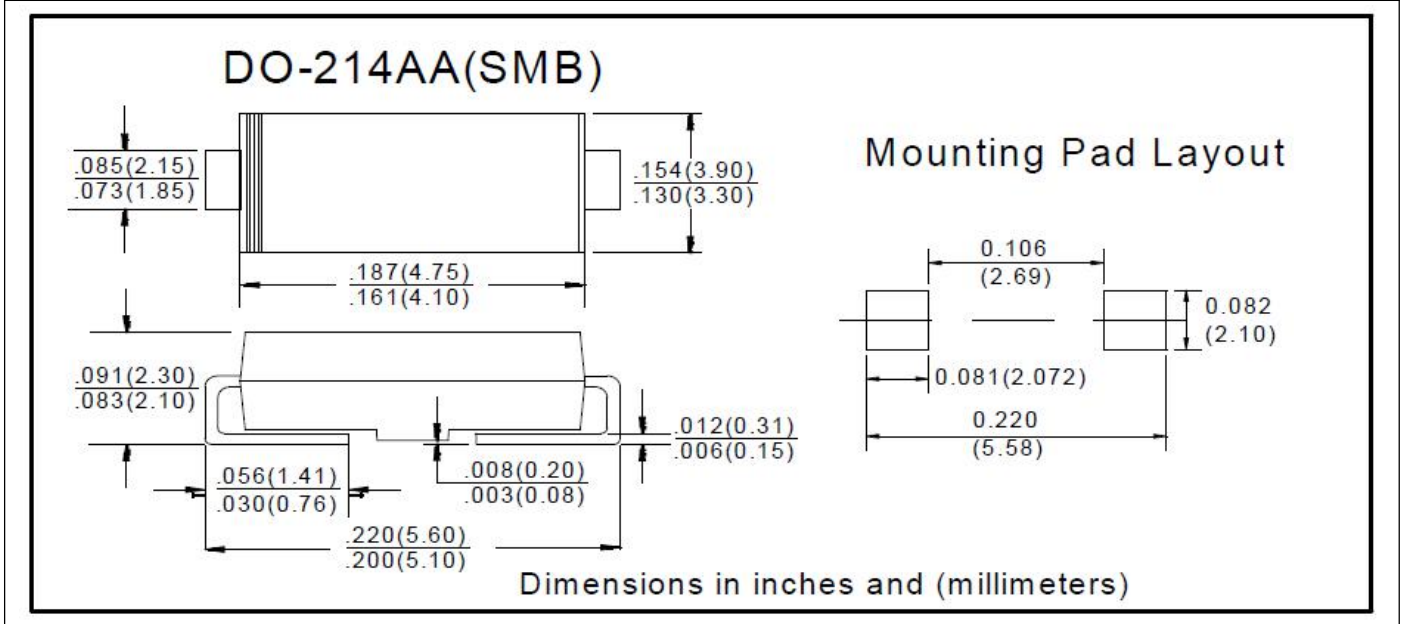


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Ordering Information (Example)

| PREFERED | PACKAGE CODE | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|-------------|---------------|----------------------|-------------------------|----------------------------|---------------|
| ES3AB~ES3JB | DO-214AC(SMB) | 3000 | 6000 | 48000 | 13" reel |

Outline Dimensions



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