

## Surface Mount Rectifier Diode

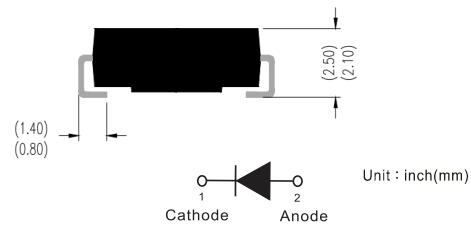
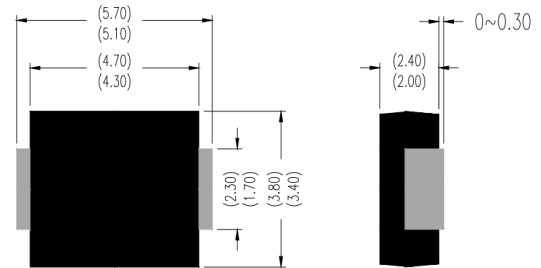
### Features

- Glass passivated junction chip
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- AEC-Q101 qualified
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Mechanical Data

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

SMB/DO-214AA



### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                                                                                     | Symbol       | S3ABQ        | S3BBQ | S3DBQ | S3GBQ | S3JBQ | S3KBQ | S3MBQ | Unit             |
|-----------------------------------------------------------------------------------------------|--------------|--------------|-------|-------|-------|-------|-------|-------|------------------|
| Repetitive peak reverse voltage                                                               | $V_{RRM}$    | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| Reverse voltage, total rms value                                                              | $V_{R(RMS)}$ | 35           | 70    | 140   | 280   | 420   | 560   | 700   | V                |
| Maximum DC blocking voltage                                                                   | $V_{DC}$     | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V                |
| Forward current                                                                               | $I_{F(AV)}$  | 3            |       |       |       |       |       |       | A                |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$    | 80           |       |       |       |       |       |       | A                |
| Junction temperature                                                                          | $T_J$        | - 55 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |
| Storage temperature                                                                           | $T_{STG}$    | - 55 to +150 |       |       |       |       |       |       | $^\circ\text{C}$ |

### Thermal Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                           | Symbol          | Limit | Unit               |
|-------------------------------------|-----------------|-------|--------------------|
| Junction-to-lead thermal resistance | $R_{\theta JL}$ | 10    | $^\circ\text{C/W}$ |

Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| Parameter                                              | Test Conditions                                                | Symbol   | Typ  | Max  | Unit          |
|--------------------------------------------------------|----------------------------------------------------------------|----------|------|------|---------------|
| Forward voltage per diode <sup>(1)</sup>               | $I_F = 3\text{A}, T_J = 25^\circ\text{C}$                      | $V_F$    | -    | 1.15 | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                                       | $I_R$    | -    | 10   | $\mu\text{A}$ |
|                                                        | $T_J = 125^\circ\text{C}$                                      |          | -    | 250  | $\mu\text{A}$ |
| Junction capacitance                                   | 1 MHz, $V_R=4.0\text{V}$                                       | $C_J$    | 40   | -    | pF            |
| Reverse recovery time                                  | $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$<br>$I_{RR}=0.25\text{A}$ | $t_{rr}$ | 1500 | -    | ns            |

Notes:

1. Pulse test with  $PW=0.3\text{ ms}$
2. Pulse test with  $PW=30\text{ ms}$

Characteristics (Typical)

Fig.1 Forward Current Derating Curve

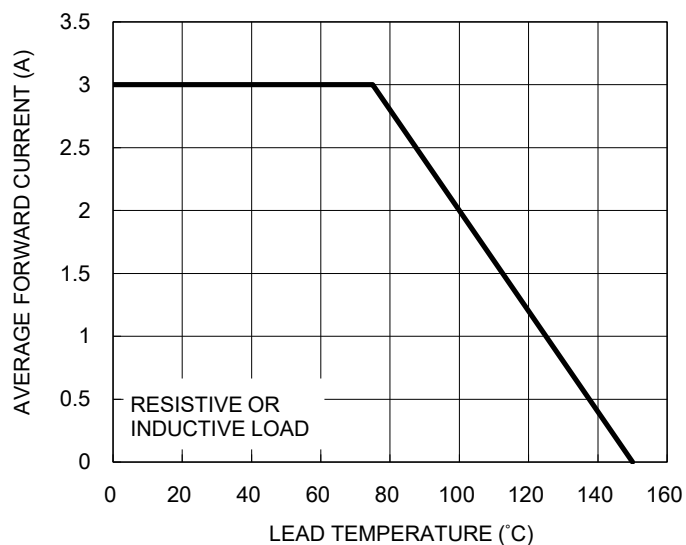


Fig.2 Typical Junction Capacitance

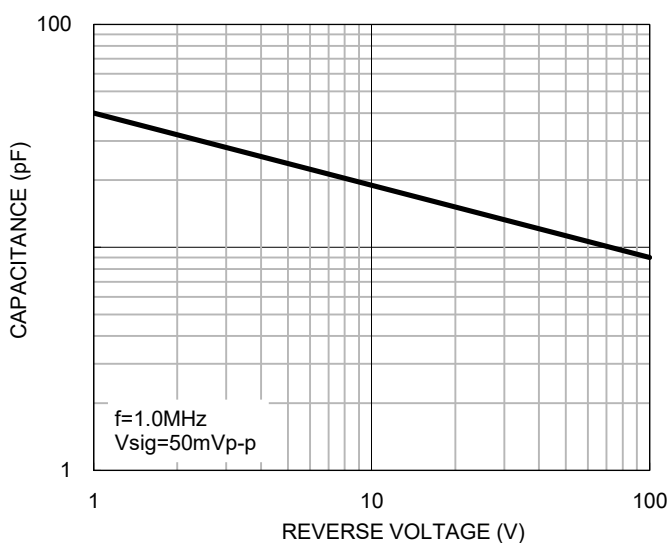


Fig.3 Typical Reverse Characteristics

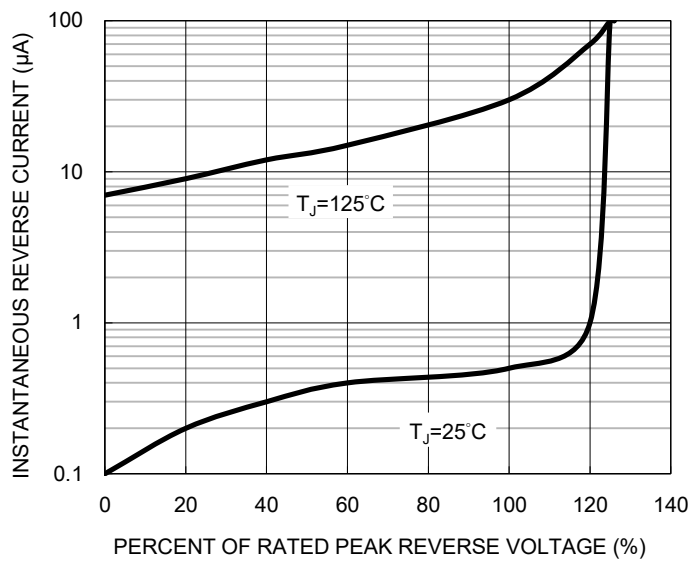


Fig.4 Typical Forward Characteristics

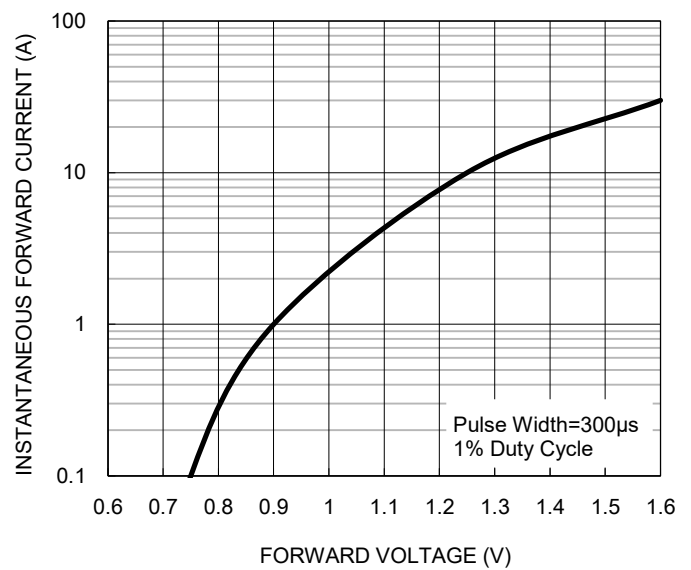


Fig.5 Maximum Non-repetitive Forward Surge Current

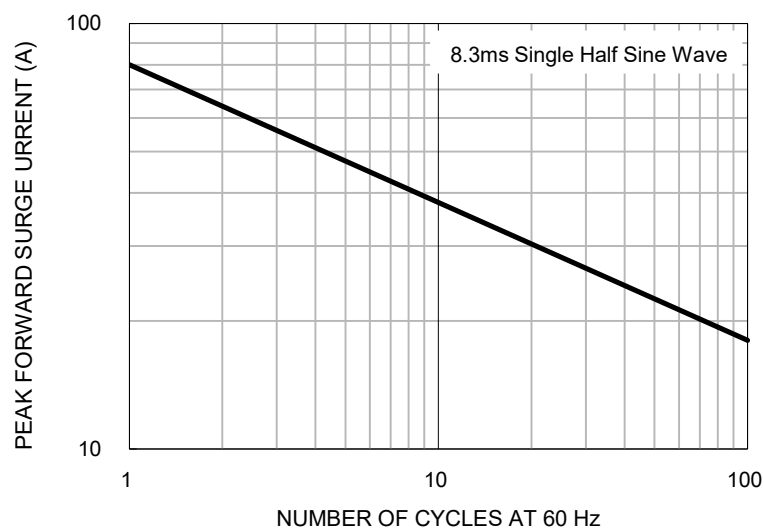


Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram

