



# ER2A THRU ER2J

2.0AMP Surface Mount Super Fast Recovery Rectifier

## 1. Features

- Glass passivated chip junction
- For surface mounted application.
- Low forward voltage drop.
- High current capability.
- Super Fast reverse recovery time.
- High reliability.
- Meets MSL level 1, per J-STD-020.

## 2. Mechanical Data

- Case:Molded Plastic,SMB(DO-214AA) .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:marked on body.

SMB(DO-214AA)



## 3. Maximum Ratings and Electrical Characteristics

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

| PARAMETER                                                                   | SYMBOL | ER2A       | ER2B | ER2D | ER2G | ER2J | UNIT |
|-----------------------------------------------------------------------------|--------|------------|------|------|------|------|------|
| Maximum Recurrent Peak Reverse Voltage                                      | VRRM   | 50         | 100  | 200  | 400  | 600  | V    |
| Maximum RMS Voltage                                                         | VRMS   | 35         | 70   | 140  | 280  | 420  | V    |
| Maximum DC Blocking Voltage                                                 | VDC    | 50         | 100  | 200  | 400  | 600  | V    |
| Average Rectified Output Current @TL=100℃                                   | IF(AV) | 2.0        |      |      |      |      | A    |
| Peak Forward Surge Current 8.3ms @Tj=25℃                                    | IFSM   | 60         |      |      |      |      | A    |
| Single half sine-wave superimposed @Tj=125℃<br>on rated load (JEDEC Method) |        | 48         |      |      |      |      |      |
| I²t Rating for Fusing (t < 8.3ms)                                           | I²t    | 15         |      |      |      |      | A²S  |
| Maximum Instantaneous Forward Voltage @IF=2A                                | VFM    | 0.95       |      |      | 1.3  | 1.7  | V    |
| Maximum DC reverse current @Tj=25℃                                          | IR     | 5.0        |      |      |      |      | uA   |
| at rated DC blocking voltage @Tj=125℃                                       |        | 100        |      |      |      |      |      |
| Maximum Reverse Recovery Time (Note 1)                                      | TRR    | 35         |      |      |      |      | ns   |
| Typical Junction Capacitance (Note 2)                                       | Cj     | 20         |      |      | 10   |      | pF   |
| Typical Thermal Resistance                                                  | RθJA   | 85         |      |      |      |      | ℃/W  |
|                                                                             | RθJL   | 15         |      |      |      |      |      |
|                                                                             | RθJC   | 10         |      |      |      |      |      |
| Operating Temperature Range                                                 | Tj     | -55 to+150 |      |      |      |      | ℃    |
| Storage Temperature Range                                                   | TSTG   | -55 to+150 |      |      |      |      | ℃    |

Note:

1. Reverse RecoveryTest Conditions:IF=0.5A,IR=1.0A,IRR=0.25A.
2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C



4. Rating And Characteristic Curves

Fig. 1 Forward Current Derating Curve

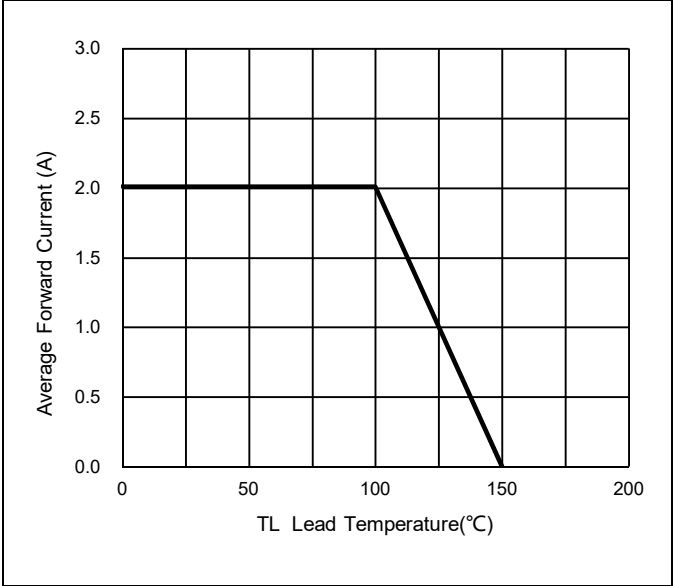


Fig. 2 Typical Forward Characteristics

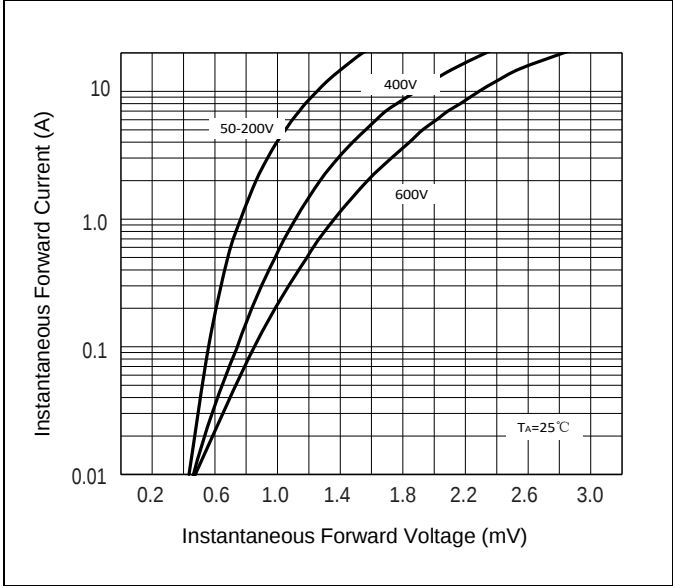


Fig. 3 Forward Surge Current Capability

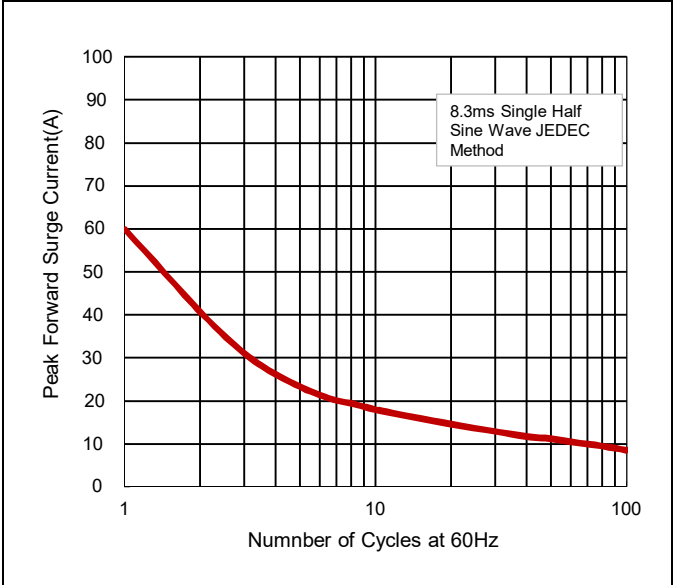
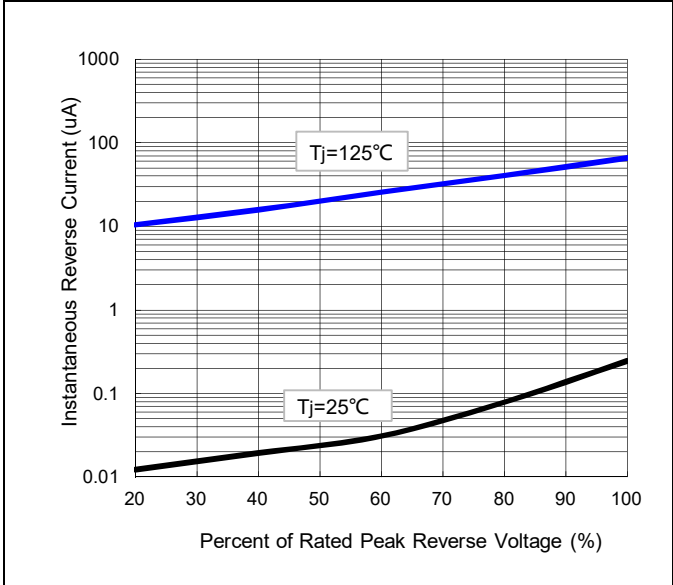


Fig.4 Typical Reverse Characteristics

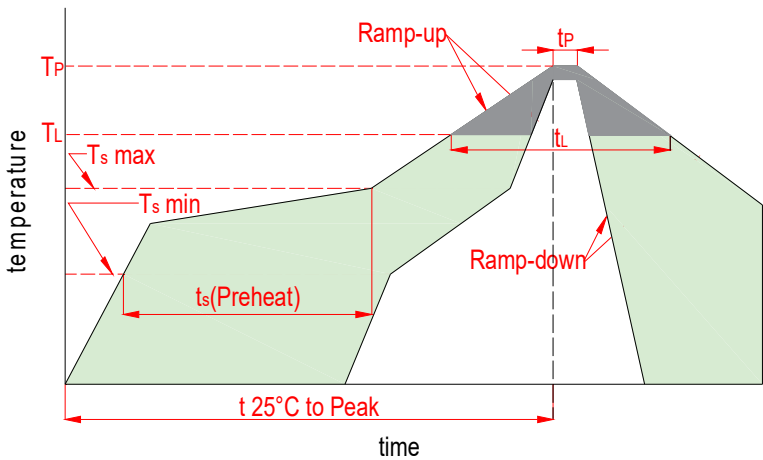




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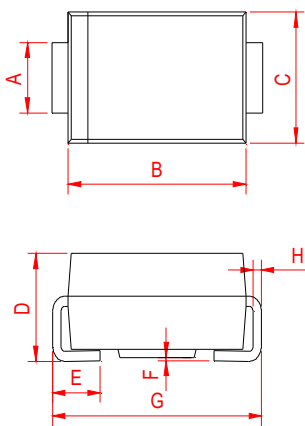
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## 5. Soldering Parameters



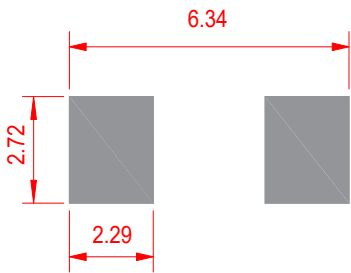
| Reflow Condition                                   |                           | Lead-free              |
|----------------------------------------------------|---------------------------|------------------------|
| Pre Heat                                           | Temp. min( $T_s(\min)$ )  | 150℃                   |
|                                                    | Temp. max( $T_s(\min)$ )  | 200℃                   |
|                                                    | Time(min to max)( $t_s$ ) | 60~120s                |
| Aver. ramp up rate(Liquidus Temp.)( $T_L$ )to peak |                           | 3℃/s max               |
| $T_s(\max)$ to $T_L$ -Ramp-up Rate                 |                           | 3℃/s max               |
| Reflow                                             | Temp.( $T_L$ )(Liquidus)  | 217℃                   |
|                                                    | Temp.( $t_L$ )(Liquidus)  | 60~150s                |
| Peak Temp.( $T_p$ )                                |                           | 260 <sup>+0/-5</sup> ℃ |
| Time within actual peak Temp.( $t_p$ )             |                           | 30s max                |
| Ramp-down Rate                                     |                           | 6℃/s max               |
| Time 25℃ to peak Tempe.( $T_p$ )                   |                           | 8 minutes max          |
| Do not exceed                                      |                           | 260℃                   |

## 6. Dimensions

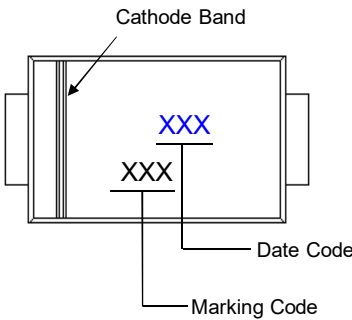
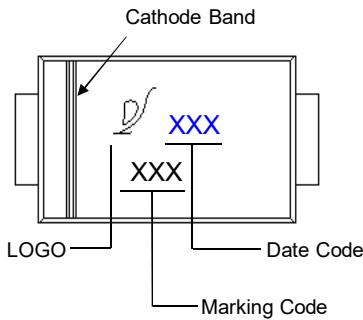


| Dimensions | Inches |       | Millimeters |      |
|------------|--------|-------|-------------|------|
|            | Min    | Max   | Min         | Max  |
| A          | 0.071  | 0.087 | 1.8         | 2.2  |
| B          | 0.163  | 0.187 | 4.15        | 4.75 |
| C          | 0.130  | 0.154 | 3.3         | 3.9  |
| D          | 0.084  | 0.102 | 2.13        | 2.6  |
| E          | 0.033  | 0.057 | 0.85        | 1.45 |
| F          | 0.000  | 0.008 | 0.0         | 0.2  |
| G          | 0.197  | 0.217 | 5.0         | 5.5  |
| H          | 0.004  | 0.012 | 0.1         | 0.3  |

Mounting PAD Layout



## 7. Part Marking System



## 8. Package Information

| Package       | Tape Width (mm) | Reel Size |      | Quantity(pcs) |
|---------------|-----------------|-----------|------|---------------|
|               |                 | mm        | inch |               |
| SMB(DO-214AA) | 12              | 330       | 13   | 3000          |



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