

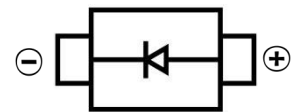
## SUPER FAST RECOVERY RECTIFIER DIODE

### FEATURES

- Glass passivated junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- Super fast recovery time
- Surface Mount device



### SMB



### MECHANICAL DATA

- Case: SMB(DO-214AA)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.088 grams (approximate)

### MAXIMUM RATINGS AND CHARACTERISTICS( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Parameter                                                                               | Symbol          | Value     | Unit               |
|-----------------------------------------------------------------------------------------|-----------------|-----------|--------------------|
| Maximum Recurrent Peak Reverse Voltage                                                  | $V_{RRM}$       | 50        | V                  |
| DC Blocking Reverse Voltage                                                             | $V_R$           | 50        | V                  |
| RMS Reverse Voltage                                                                     | $V_{R(RMS)}$    | 35        | V                  |
| Maximum Average Forward Rectified Current                                               | $I_F$           | 2         | A                  |
| Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$                            | $I_{FSM}$       | 50        | A                  |
| Thermal Resistance From Junction To Ambient                                             | $R_{\theta JA}$ | 25        | $^\circ\text{C/W}$ |
| Reverse Recovery Time(@ $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{RR}=0.25\text{A}$ ) | $t_{rr}$        | 35        | nS                 |
| Junction Temperature                                                                    | $T_J$           | -55 ~+150 | $^\circ\text{C}$   |
| Storage Temperature                                                                     | $T_{STG}$       | -55 ~+150 | $^\circ\text{C}$   |

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                                 | Symbol | Min | Typ | Max  | Unit          | Conditions                     |
|-------------------------------------------|--------|-----|-----|------|---------------|--------------------------------|
| Forward voltage                           | $V_F$  |     |     | 0.95 | V             | $I_F=2\text{A}$                |
| Reverse current @ $T_A=25^\circ\text{C}$  | $I_R$  |     |     | 5    | $\mu\text{A}$ | $V_R=50\text{V}$               |
| Reverse current @ $T_A=125^\circ\text{C}$ | $I_R$  |     |     | 350  | $\mu\text{A}$ | $V_R=50\text{V}$               |
| Diode capacitance                         | $C_D$  |     | 25  |      | pF            | $V_R=4\text{V}, f=1\text{MHz}$ |

**SUPER FAST RECOVERY RECTIFIER DIODE**

**Typical Characteristics**

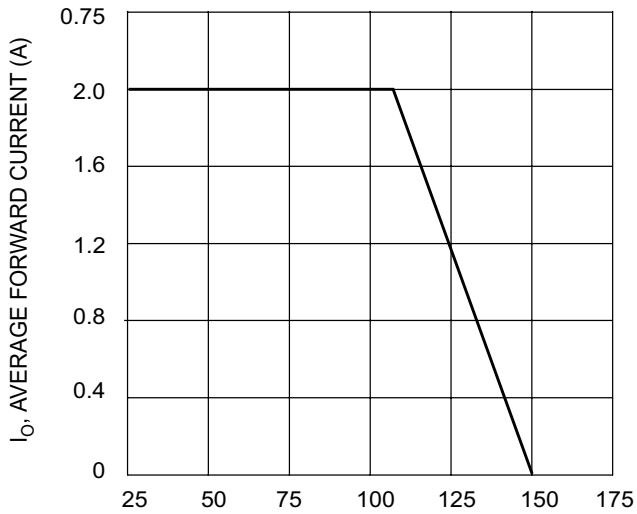


Fig. 1 Forward Current Derating Curve

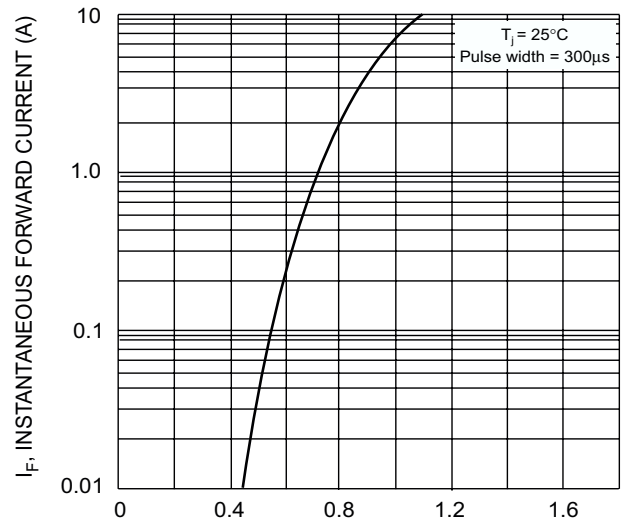


Fig. 2 Typical Forward Characteristics

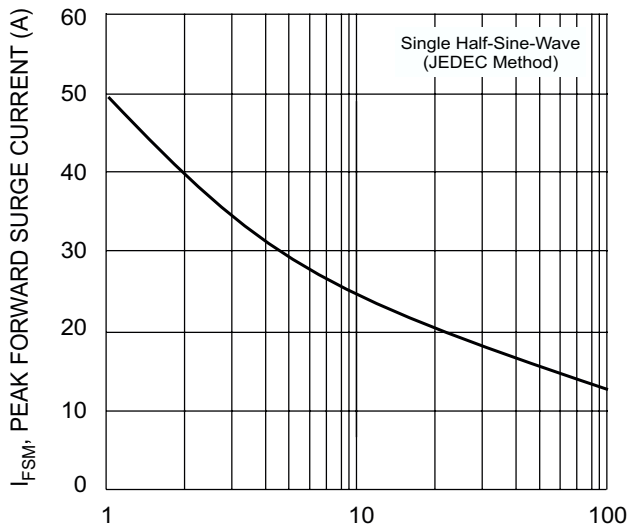


Fig. 3 Surge Current Derating Curve

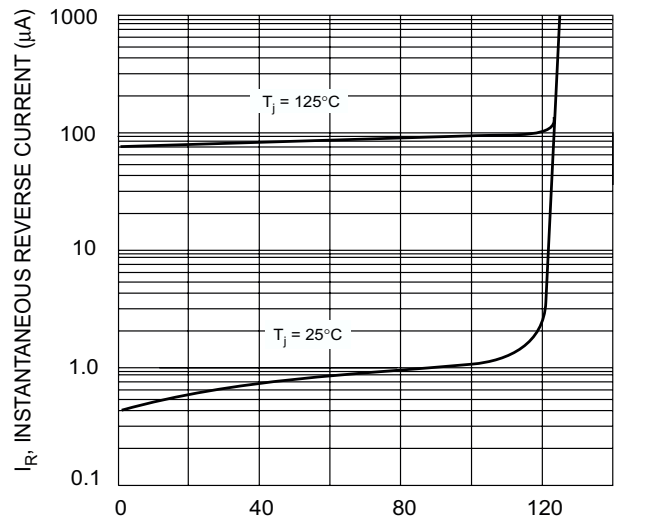
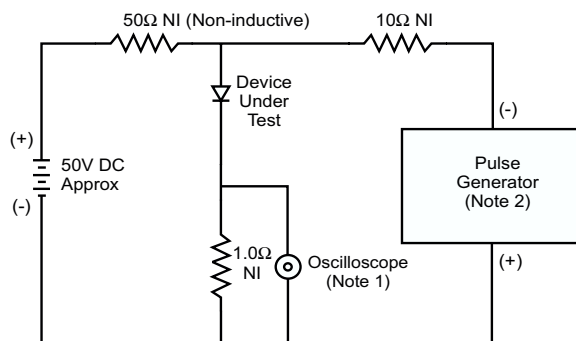


Fig. 4 Typical Reverse Characteristics



Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .

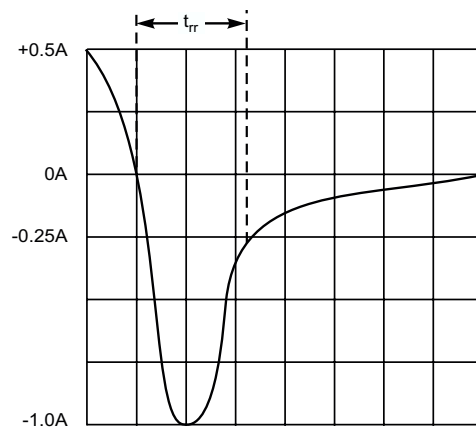
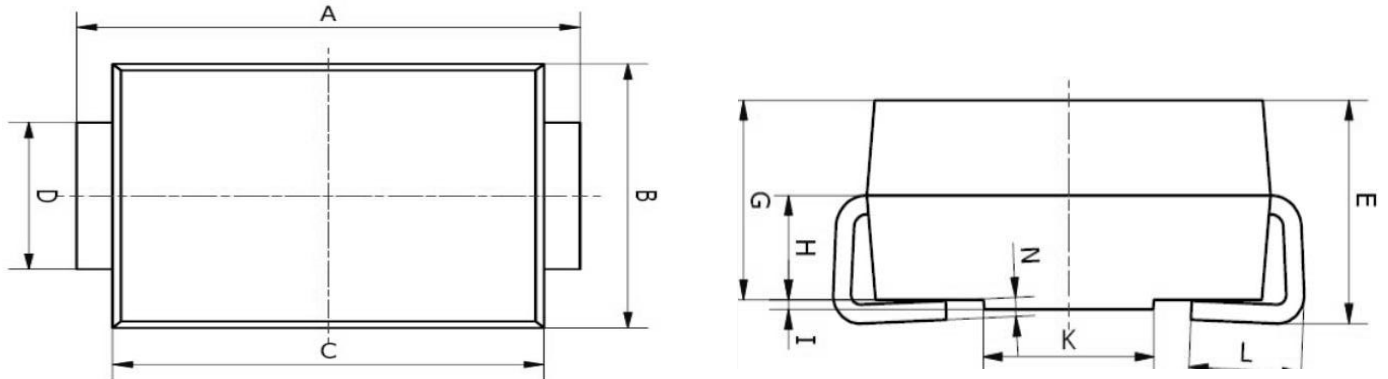


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

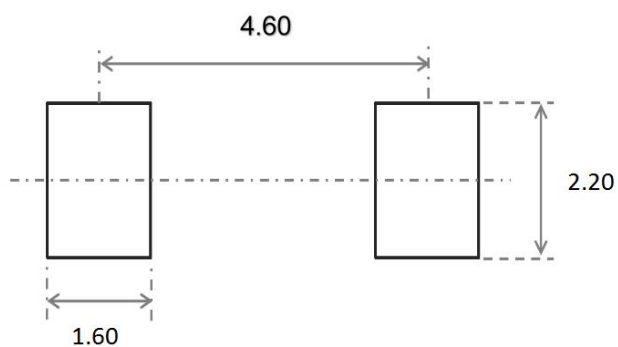
**SUPER FAST RECOVERY RECTIFIER DIODE**

**SMB Package Outline Dimensions**



| Symbol | Dimensions In Millimeters |      | Dimensions In Inches |       |
|--------|---------------------------|------|----------------------|-------|
|        | Min.                      | Max. | Min.                 | Max.  |
| A      | 5.00                      | 5.45 | 0.197                | 0.215 |
| B      | 3.20                      | 4.00 | 0.126                | 0.157 |
| C      | 4.30                      | 4.70 | 0.169                | 0.185 |
| D      | 1.80                      | 2.20 | 0.071                | 0.087 |
| E      | 2.20                      | 2.50 | 0.087                | 0.098 |
| G      | 1.90                      | 2.30 | 0.075                | 0.090 |
| H      | 0.95                      | 1.25 | 0.037                | 0.049 |
| I      | 0.05                      | 0.15 | 0.002                | 0.006 |
| K      | 1.70                      | 2.10 | 0.067                | 0.083 |
| L      | 0.90                      | 1.60 | 0.035                | 0.063 |
| N      | 0.10                      | 0.30 | 0.004                | 0.012 |

**SMB Suggested Pad Layout**



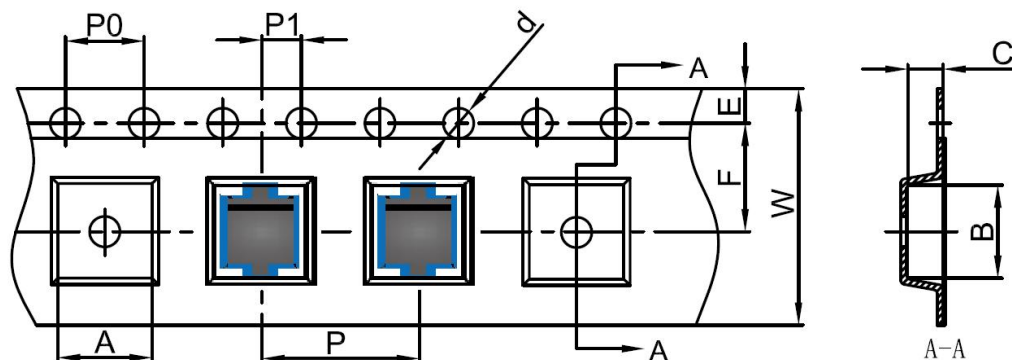
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

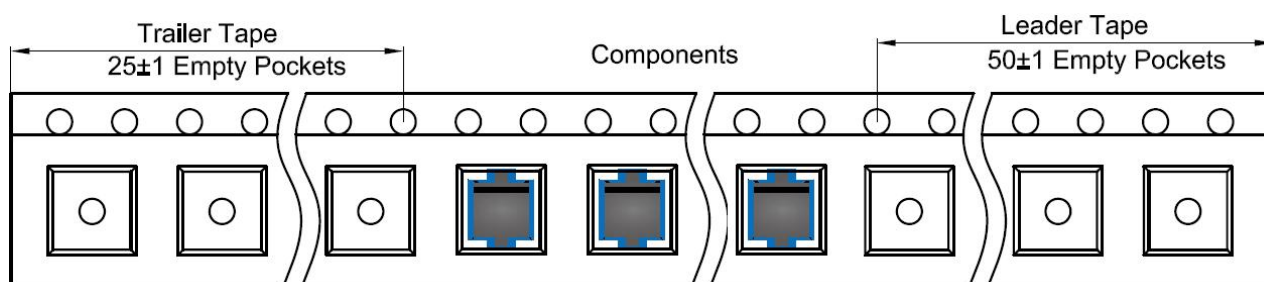
## SUPER FAST RECOVERY RECTIFIER DIODE

## SMB Tape and Reel

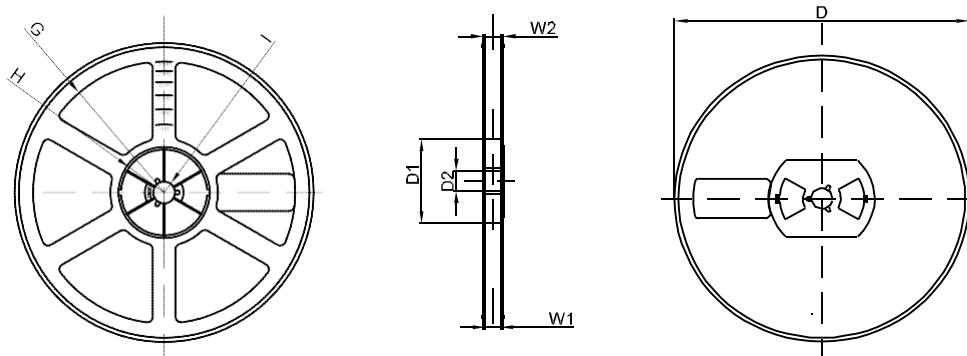
## SMB Embossed Carrier Tape

[illegible]

## SMB Tape Leader and Trailer



## SMB Reel



|             |                              |      |       |      |        |       |       |       |
|-------------|------------------------------|------|-------|------|--------|-------|-------|-------|
|             | DIMENSIONS ARE IN MILLIMETER |      |       |      |        |       |       |       |
| REEL OPTION | D                            | D1   | D2    | G    | H      | I     | W1    | W2    |
| 13" DIA     | Ø330                         | 75.0 | 13.00 | R165 | R37.50 | R6.50 | 12.40 | 17.60 |
| TOLERANCE   | ±2                           | ±1   | ±1    | ±1   | ±1     | ±1    | ±1    | ±1    |