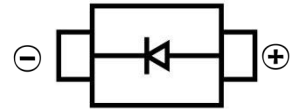


**SUPER FAST RECOVERY RECTIFIER DIODE****FEATURES**

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

**SMC****MECHANICAL DATA**

- Case: SMC(DO-214AB)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.21 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                                               | $I_F$           | 4         | A                    |
| Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$                            | $I_{FSM}$       | 100       | A                    |
| Thermal Resistance From Junction To Lead                                                | $R_{\theta JL}$ | 35        | $^{\circ}\text{C/W}$ |
| 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             | $I_F=4\text{A}$                |
| Reverse current @ $T_A=25^{\circ}\text{C}$  | $I_R$  |     |     | 5    | $\mu\text{A}$ | $V_R=50\text{V}$               |
| Reverse current @ $T_A=125^{\circ}\text{C}$ | $I_R$  |     |     | 500  | $\mu\text{A}$ | $V_R=50\text{V}$               |
| Diode capacitance                           | $C_D$  |     | 45  |      | pF            | $V_R=4\text{V}, f=1\text{MHz}$ |

## SUPER FAST RECOVERY RECTIFIER DIODE

## Typical Characteristics

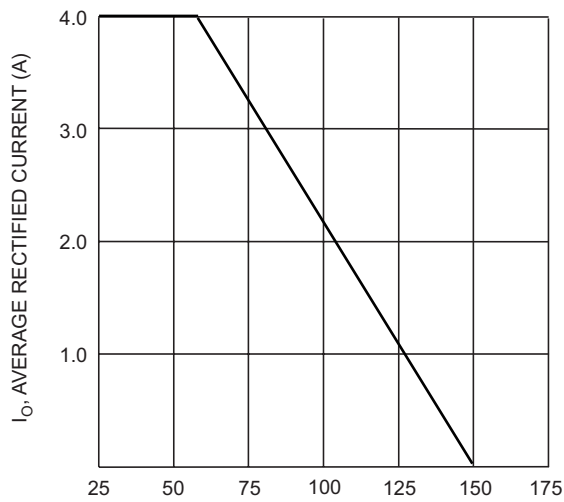


Fig. 1 Forward Current Derating Curve

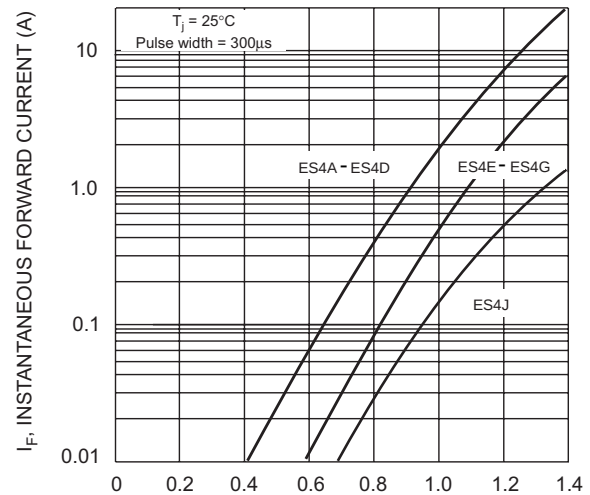


Fig. 2 Typical Forward Characteristics

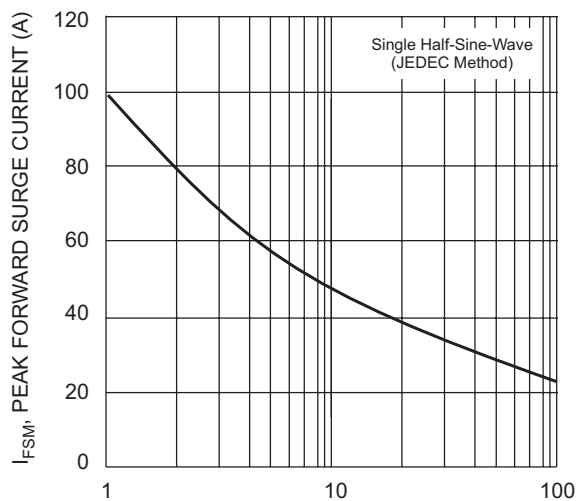


Fig. 3 Surge Current Derating Curve

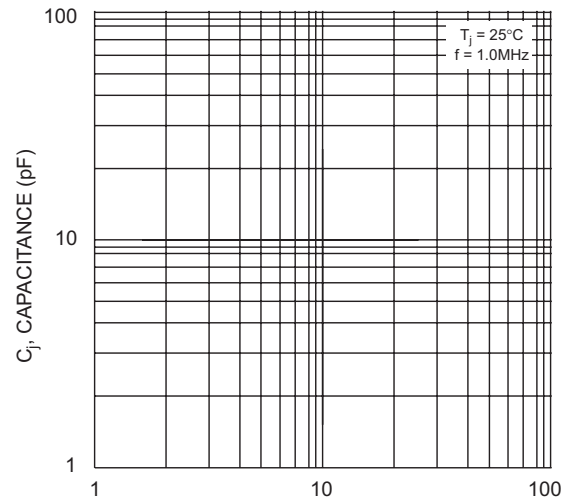
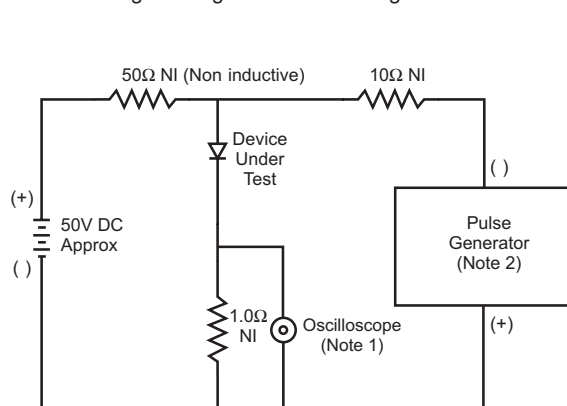
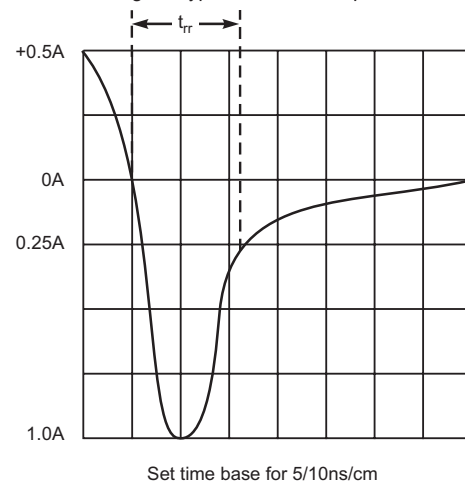


Fig. 4 Typical Junction Capacitance

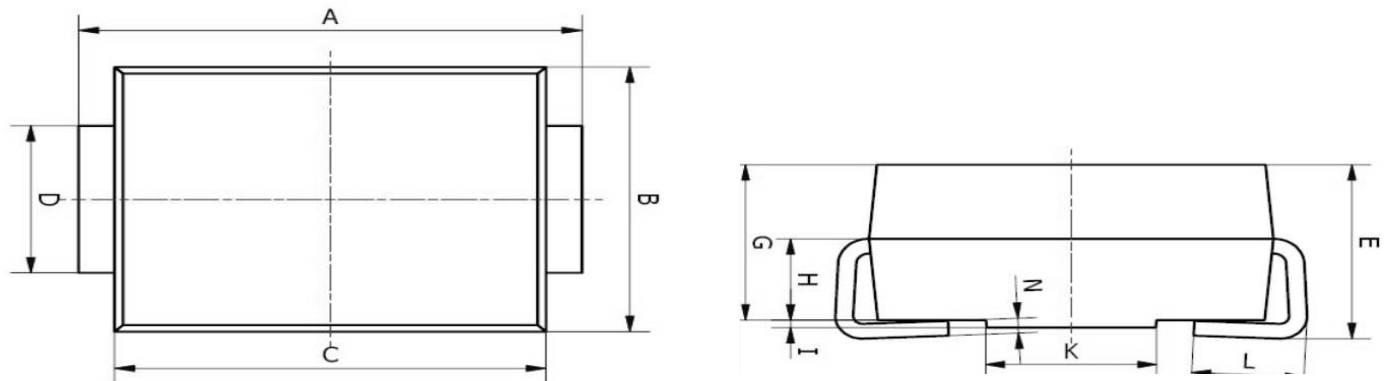


- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0M $\Omega$ , 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50 $\Omega$ .

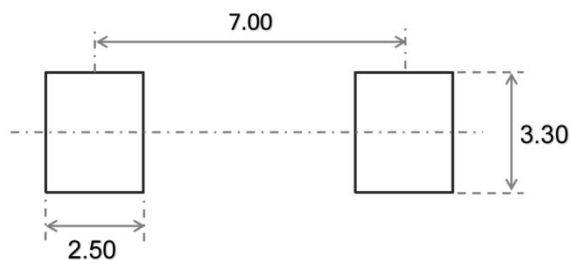
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit



Set time base for 5/10ns/cm

**SUPER FAST RECOVERY RECTIFIER DIODE****SMC Package Outline Dimensions**

| Symbol | Dimensions In Millimeters |      | Dimensions In Inches |       |
|--------|---------------------------|------|----------------------|-------|
|        | Min.                      | Max. | Min.                 | Max.  |
| A      | 7.75                      | 8.13 | 0.305                | 0.320 |
| B      | 5.59                      | 6.22 | 0.220                | 0.245 |
| C      | 6.60                      | 7.11 | 0.260                | 0.280 |
| D      | 2.75                      | 3.25 | 0.108                | 0.128 |
| E      | 2.25                      | 2.82 | 0.089                | 0.111 |
| G      | 2.00                      | 2.62 | 0.079                | 0.103 |
| H      | 1.26                      | 1.56 | 0.050                | 0.061 |
| I      | 0.05                      | 0.15 | 0.002                | 0.006 |
| K      | 4.30                      | 6.00 | 0.169                | 0.236 |
| L      | 1.25                      | 1.75 | 0.049                | 0.069 |
| N      | 0.10                      | 0.30 | 0.004                | 0.012 |

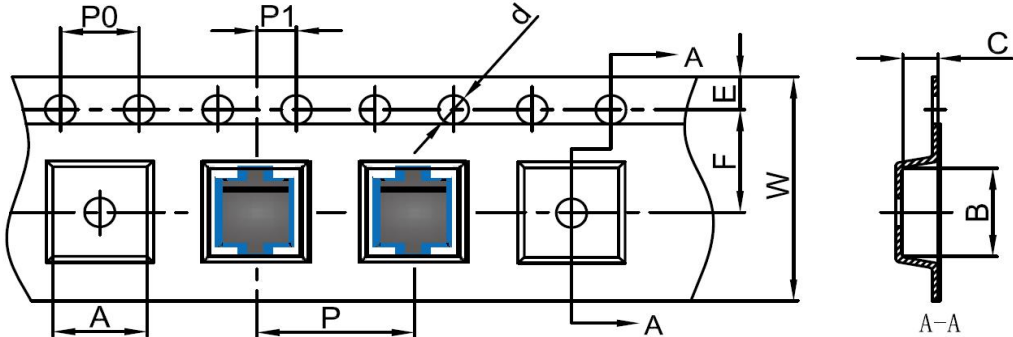
**SMC Suggested Pad Layout****Note:**

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**

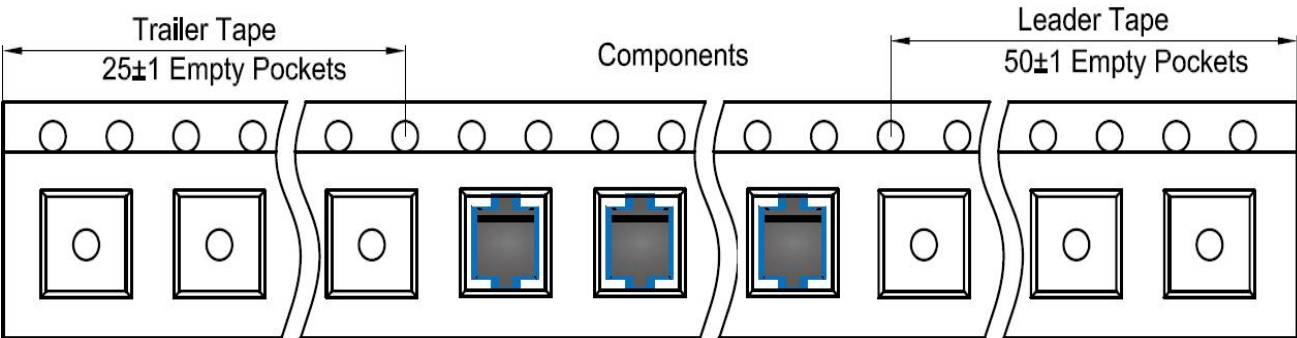
**SMC Tape and Reel**

**SMC Embossed Carrier Tape**

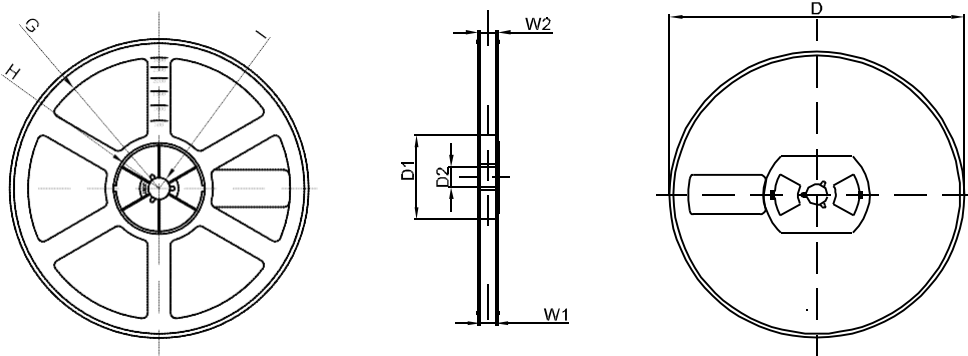


|           | DIMENSIONS ARE IN MILLIMETER |      |      |       |      |      |      |      |      |       |
|-----------|------------------------------|------|------|-------|------|------|------|------|------|-------|
| TYPE      | A                            | B    | C    | d     | E    | F    | P0   | P    | P1   | W     |
| SMC       | 6.3                          | 8.25 | 2.90 | Ø1.55 | 1.75 | 7.50 | 4.00 | 8.00 | 2.00 | 16.00 |
| TOLERANCE | ±0.1                         | ±0.1 | ±0.1 | ±0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1  |

**SMC Tape Leader and Trailer**



**SMC Reel**



|             | DIMENSIONS ARE IN MILLIMETER |     |    |      |     |       |      |       |
|-------------|------------------------------|-----|----|------|-----|-------|------|-------|
| REEL OPTION | D                            | D1  | D2 | G    | H   | I     | W1   | W2    |
| 13" DIA     | Ø330                         | 100 | 21 | R165 | R50 | R6.50 | 16.4 | 21.00 |
| TOLERANCE   | ±2                           | ±1  | ±1 | ±1   | ±1  | ±1    | ±1   | ±1    |