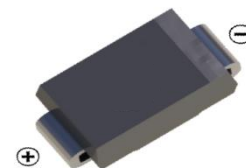


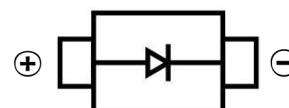
## FAST RECOVERY RECTIFIER DIODE

### FEATURES

- Glass Passivated Die Construction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- Surface Mount device



### SMA



### MECHANICAL DATA

- Case: SMA(DO-214AC)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.065 grams (approximate)

### MAXIMUM RATINGS AND CHARACTERISTICS(T<sub>A</sub> = 25°C unless otherwise noted)

| Parameter   | Symbol              | RS1A      | RS1B | RS1D | RS1G | RS1J | RS1K | RS1M | Unit |
|---|---------------------|-----------|------|------|------|------|------|------|------|
| Maximum Recurrent Peak Reverse Voltage  | V <sub>RRM</sub>    | 50        | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| DC Blocking Reverse Voltage   | V <sub>R</sub>      | 50        | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub> | 35        | 70   | 140  | 280  | 420  | 560  | 700  | V    |
| Maximum Average Forward Rectified Current   | I <sub>F</sub>      | 1         |      |      |      |      |      |      | A    |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms  | I <sub>FSM</sub>    | 30        |      |      |      |      |      |      | A    |
| Reverse Recovery Time (@I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A) | t <sub>rr</sub>     | 150       |      |      |      | 250  | 500  |      | nS   |
| Thermal Resistance From Junction To Ambient   | R <sub>θJA</sub>    | 50        |      |      |      |      |      |      | °C/W |
| Junction Temperature  | T <sub>J</sub>      | -55 ~+150 |      |      |      |      |      |      | °C   |
| Storage Temperature   | T <sub>STG</sub>    | -55 ~+150 |      |      |      |      |      |      | °C   |

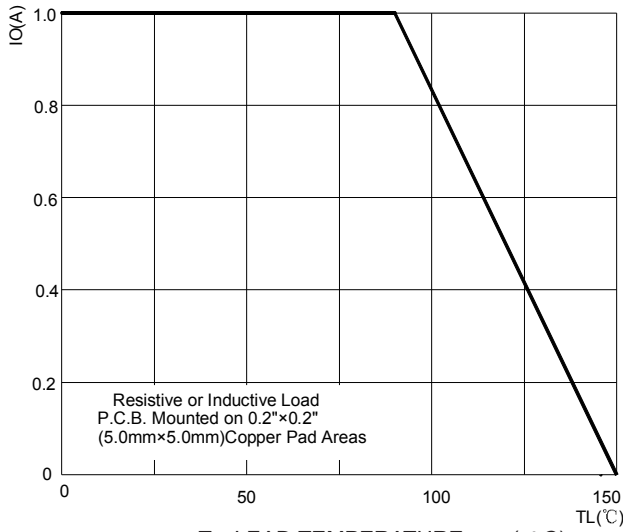
### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter         | Symbol         | Min | Typ | Max | Unit | Conditions                       |
|-------------------|----------------|-----|-----|-----|------|----------------------------------|
| Forward voltage   | V <sub>F</sub> |     |     | 1.3 | V    | I <sub>F</sub> =1A               |
| Reverse current   | I <sub>R</sub> |     |     | 5   | uA   | V <sub>R</sub> =V <sub>RRM</sub> |
| Diode capacitance | C <sub>D</sub> |     | 10  |     | pF   | V <sub>R</sub> =4V, f=1MHz       |

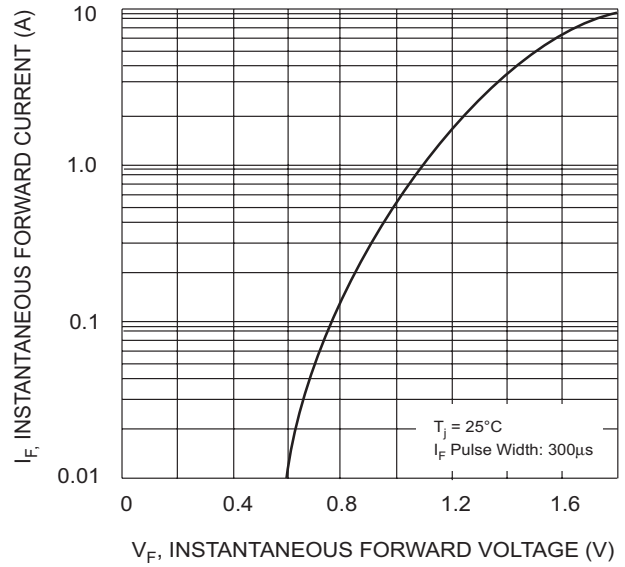
**FAST RECOVERY RECTIFIER DIODE**

**Typical Characteristics**

FIG.1: FORWARD CURRENT DERATING CURVE



$T_L$ , LEAD TEMPERATURE ( °C)  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics

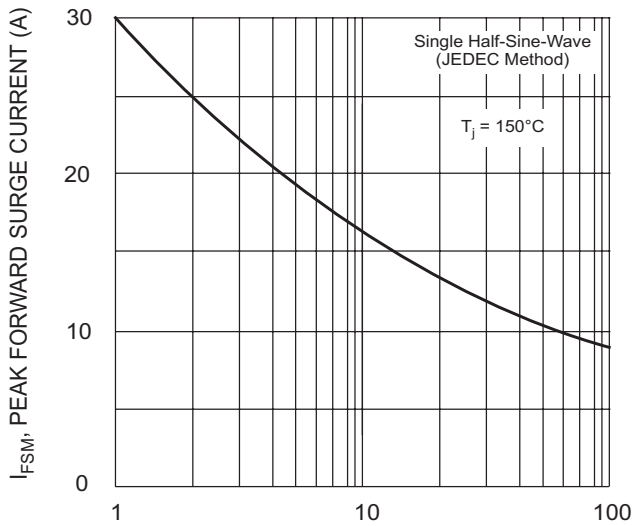


Fig. 3 Forward Surge Current Derating Curve

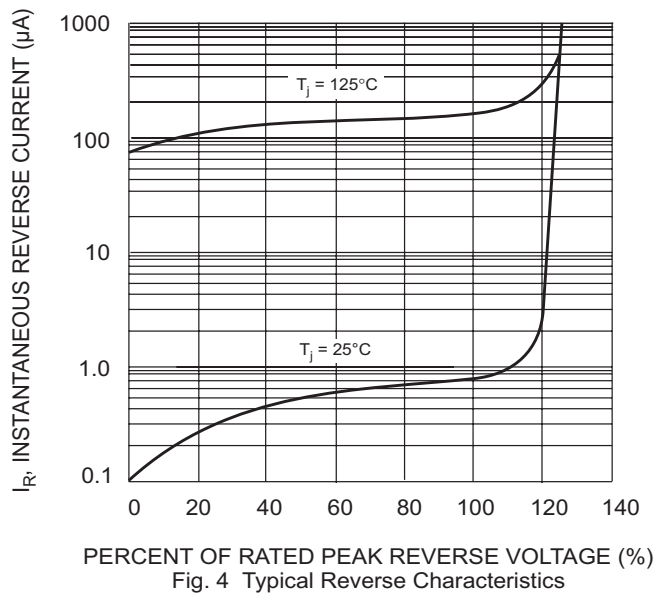
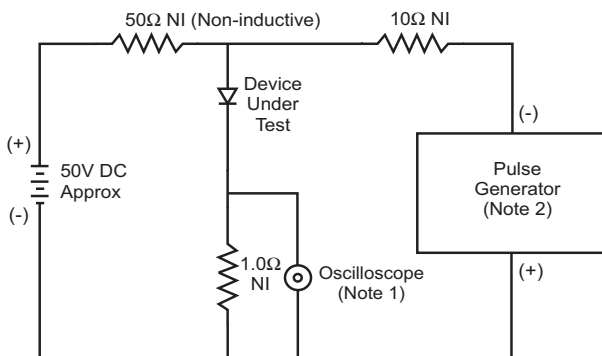
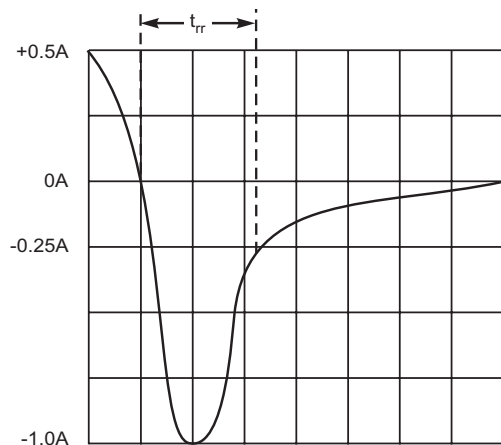


Fig. 4 Typical Reverse Characteristics



- Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.

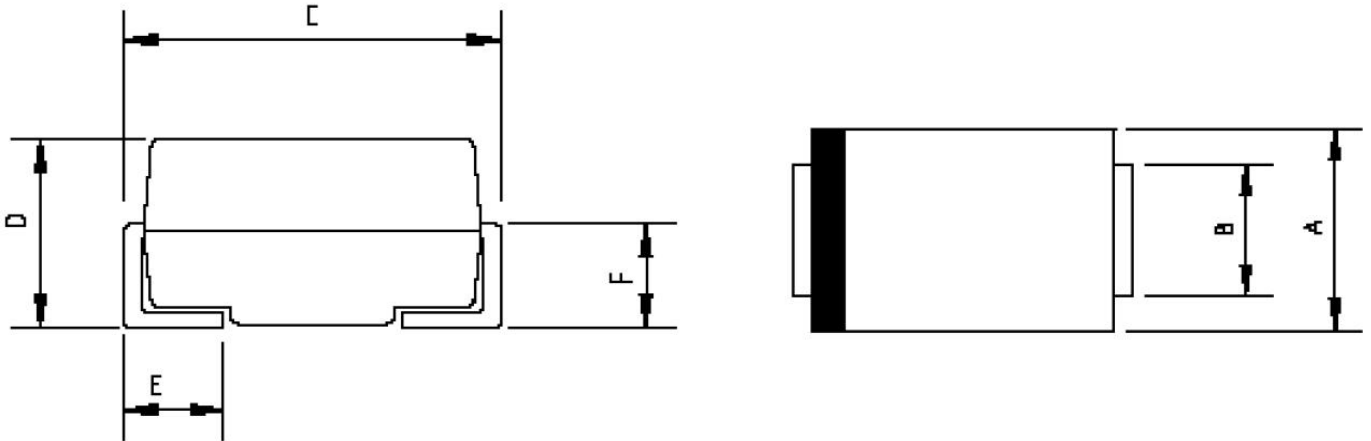


Set time base for 10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

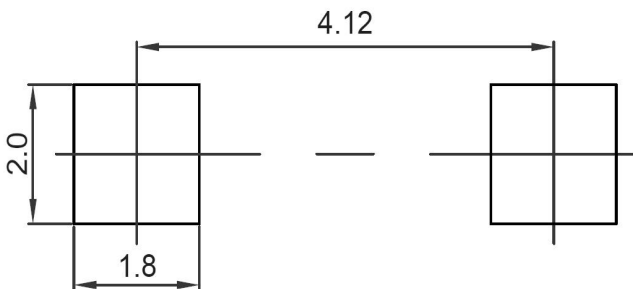
**FAST RECOVERY RECTIFIER DIODE**

**SMA Package Outline Dimensions**



| Symbol | Dimensions In Millimeters |      | Dimensions In Inches |       |
|--------|---------------------------|------|----------------------|-------|
|        | Min.                      | Max. | Min.                 | Max.  |
| A      | 2.20                      | 2.80 | 0.086                | 0.110 |
| B      | 1.30                      | 1.70 | 0.051                | 0.067 |
| C      | 4.70                      | 5.30 | 0.185                | 0.209 |
| D      | 1.70                      | 2.55 | 0.067                | 0.100 |
| E      | 0.90                      | 1.50 | 0.035                | 0.059 |
| F      | 0.90                      | 1.50 | 0.035                | 0.059 |

**SMA Suggested Pad Layout**



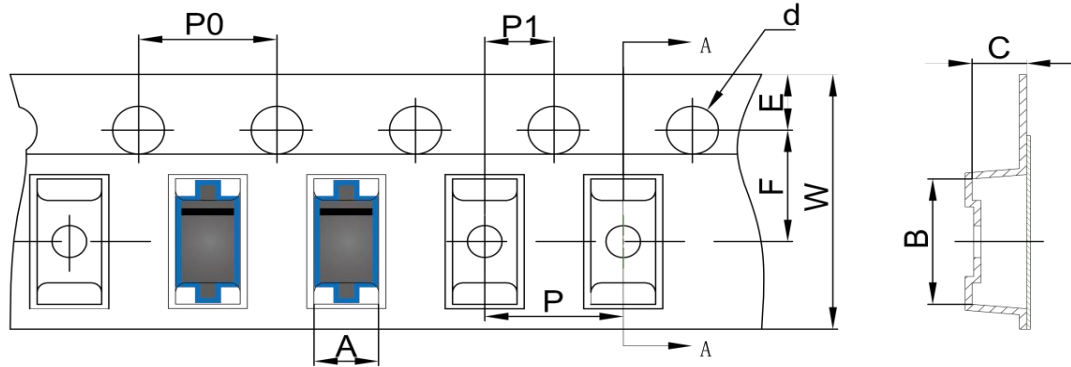
**Note:**

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

**FAST RECOVERY RECTIFIER DIODE**

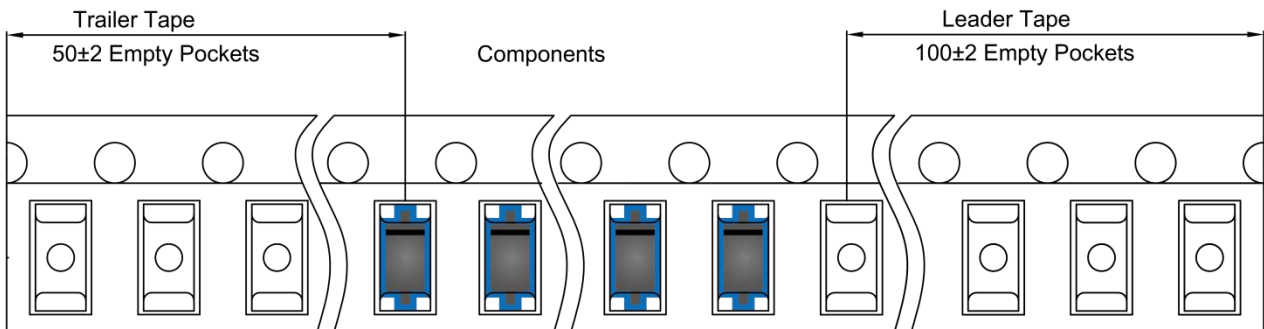
**SMA Tape and Reel**

**SMA Embossed Carrier Tape**

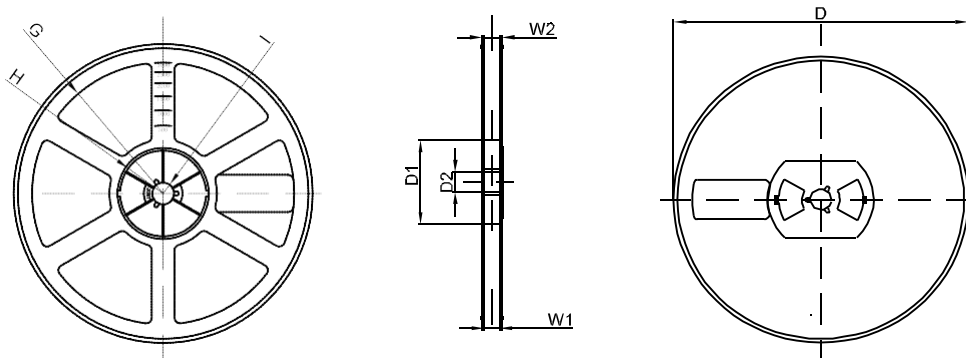


| DIMENSIONS ARE IN MILLIMETER |      |      |      |       |      |      |      |      |      |       |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| TYPE                         | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W     |
| SMA                          | 2.89 | 5.35 | 2.68 | Ø1.50 | 1.75 | 5.50 | 4.00 | 4.00 | 2.00 | 12.00 |
| TOLERANCE                    | ±0.1 | ±0.1 | ±0.1 | ±0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1  |

**SMA Tape Leader and Trailer**



**SMA Reel**



| DIMENSIONS ARE IN MILLIMETER |      |       |       |     |        |       |       |       |
|------------------------------|------|-------|-------|-----|--------|-------|-------|-------|
| REEL OPTION                  | D    | D1    | D2    | G   | H      | I     | W1    | W2    |
| 7" DIA                       | Ø178 | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 12.40 | 17.60 |
| TOLERANCE                    | ±2   | ±1    | ±1    | ±1  | ±1     | ±1    | ±1    | ±1    |

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