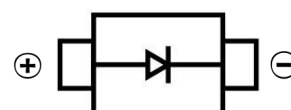


**ULTRA FAST RECOVERY RECTIFIER DIODE**
**FEATURES**

- 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)

**ABSOLUTE MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS**

(Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter                                                                                      |                       | Symbol                            | US1A        | US1B | US1D | US1G | US1J | US1K | US1M | Unit |
|------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------|-------------|------|------|------|------|------|------|------|
| Maximum repetitive peak reverse voltage                                                        |                       | V <sub>RRM</sub>                  | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| Maximum RMS voltage                                                                            |                       | V <sub>RMS</sub>                  | 35          | 70   | 140  | 280  | 420  | 560  | 700  | V    |
| Maximum DC blocking voltage                                                                    |                       | V <sub>DC</sub>                   | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V    |
| Maximum average forward current at T <sub>A</sub> =75°C                                        |                       | I <sub>F(AV)</sub>                | 1.0         |      |      |      |      |      |      | A    |
| Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load             |                       | I <sub>FSM</sub>                  | 30          |      |      |      |      |      |      | A    |
| Maximum forward voltage @ I <sub>F</sub> =1A                                                   |                       | V <sub>F</sub>                    | 1.0         |      |      | 1.3  | 1.7  |      |      | V    |
| Maximum DC reverse current at rated DC blocking voltage                                        | T <sub>J</sub> =25°C  | I <sub>R</sub>                    | 5           |      |      |      |      |      |      | μA   |
|                                                                                                | T <sub>J</sub> =100°C |                                   | 50          |      |      |      |      |      |      | μA   |
| Typical junction capacitance V <sub>R</sub> =4.0V, f=1MHz                                      |                       | C <sub>J</sub>                    | 7           |      |      |      |      |      |      | pF   |
| Maximum reverse recovery time I <sub>F</sub> =0.5A, I <sub>R</sub> =1A, I <sub>rr</sub> =0.25A |                       | t <sub>rr</sub>                   | 50          |      |      |      | 75   |      |      | ns   |
| Operating junction and storage temperature range                                               |                       | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150 |      |      |      |      |      |      | °C   |

**ULTRA FAST RECOVERY RECTIFIER DIODE**

**Typical Characteristics**

FIG.1: FORWARD CURRENT DERATING CURVE

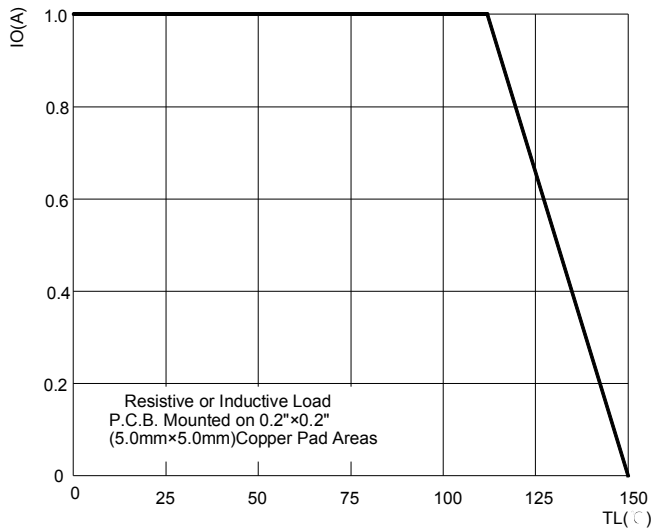


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

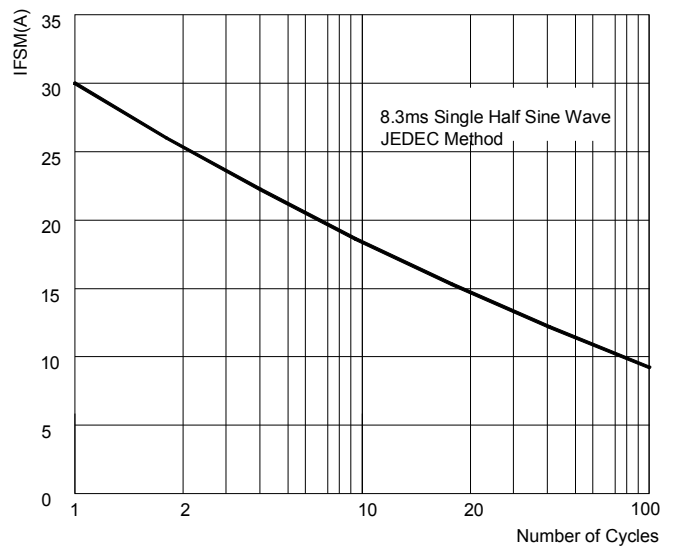


FIG.3: TYPICAL FORWARD CHARACTERISTICS

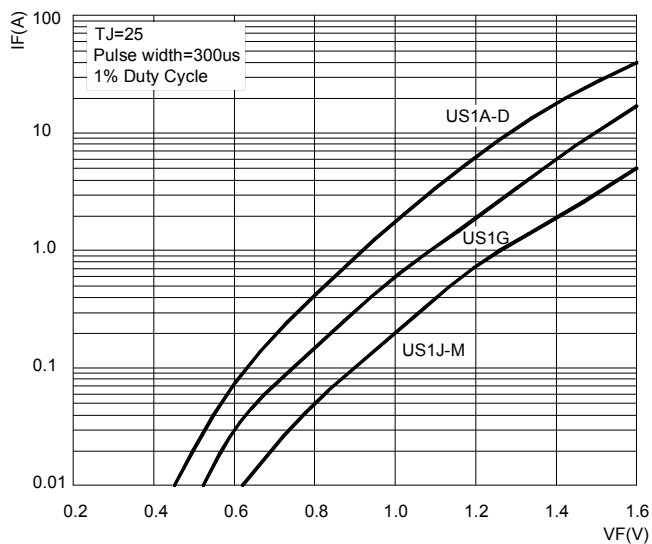
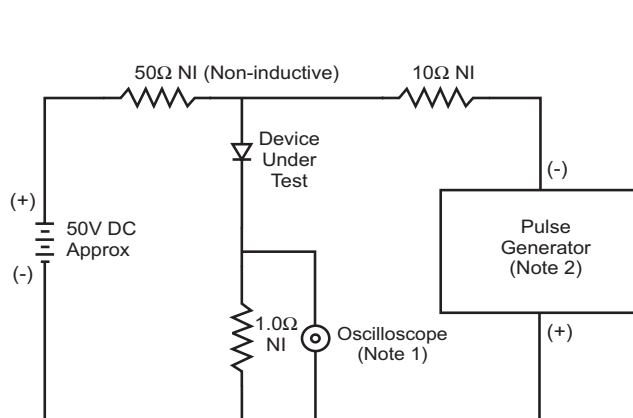
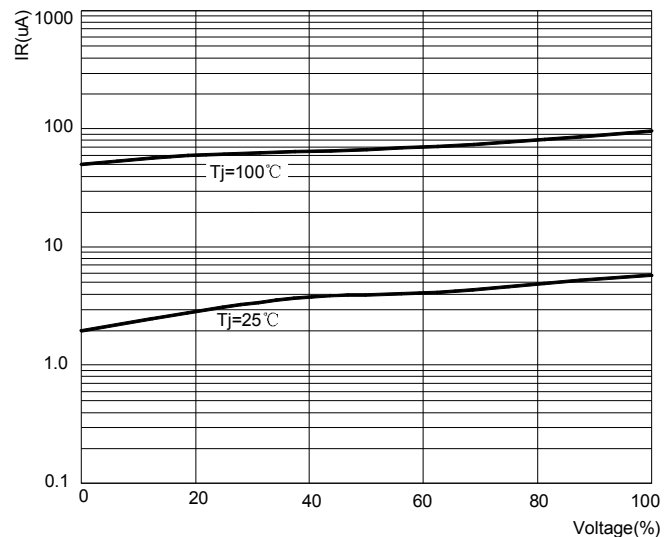


FIG.4: TYPICAL REVERSE CHARACTERISTICS



Notes:

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

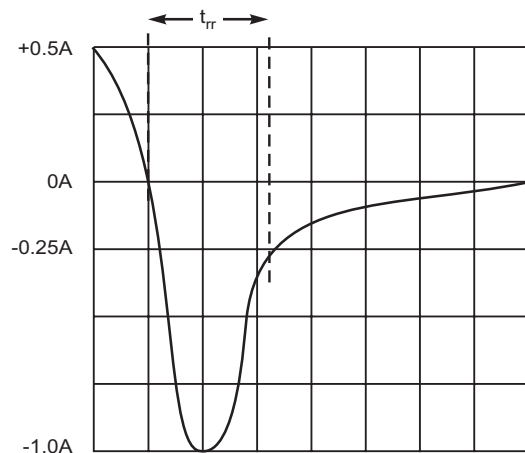
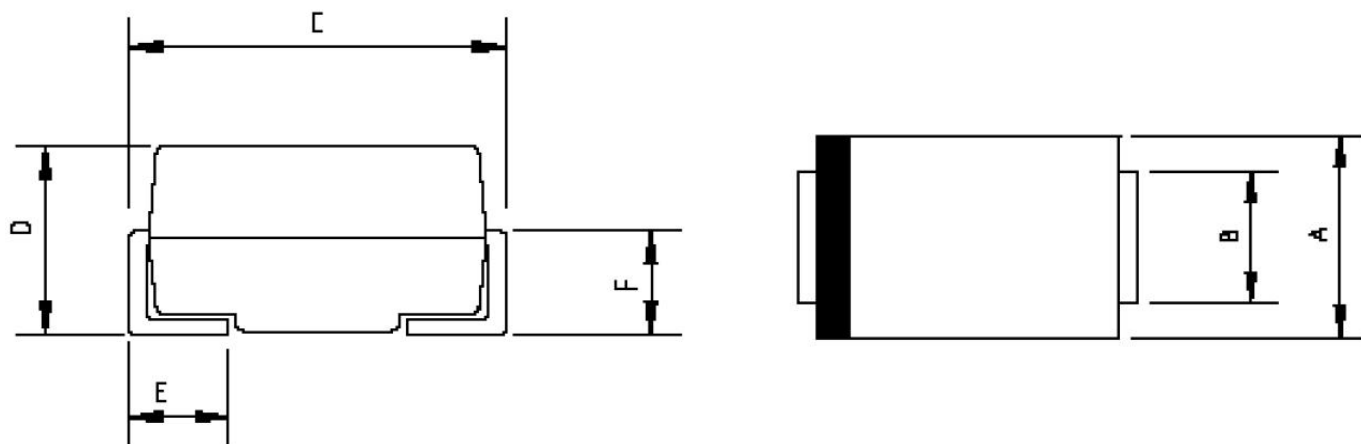


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

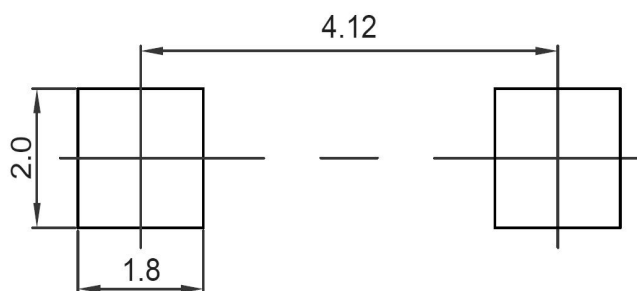
ULTRA FAST RECOVERY RECTIFIER DIODE

**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**



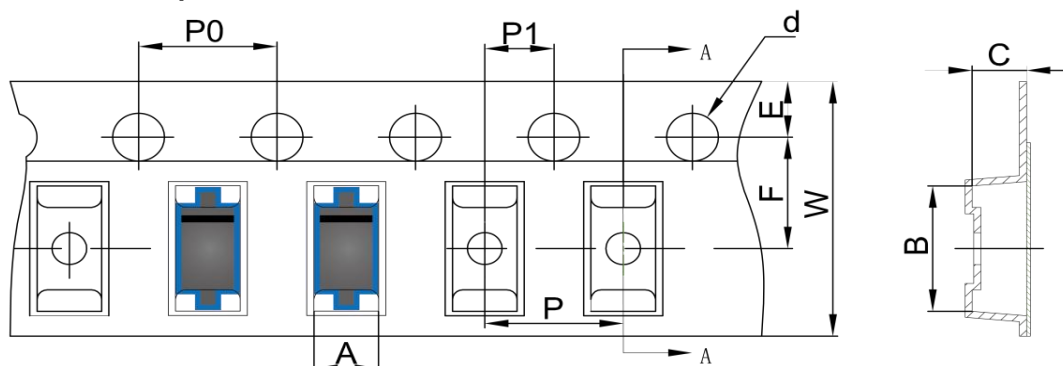
**Note:**

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

ULTRA FAST RECOVERY RECTIFIER DIODE

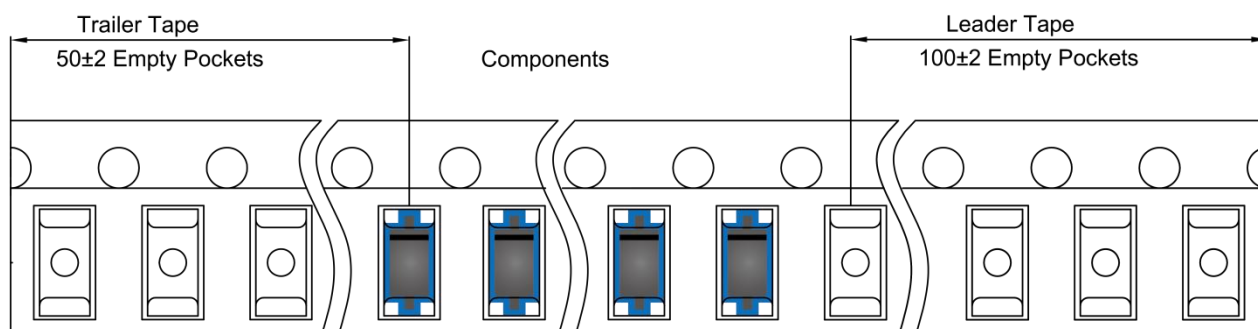
**SMA Tape and Reel**

**SMA Embossed Carrier Tape**

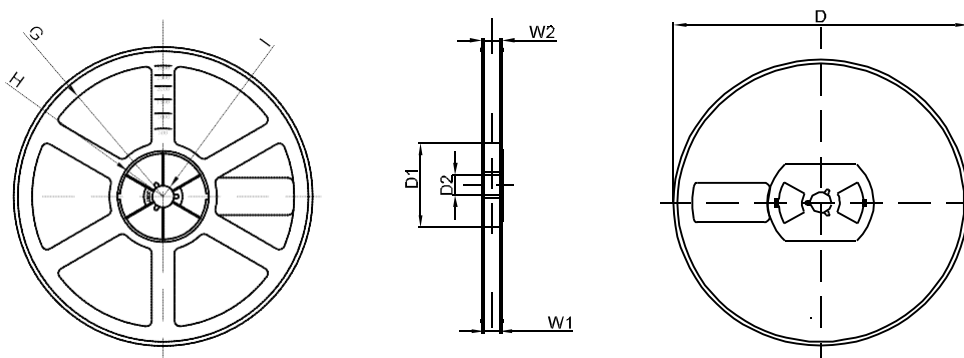


| DIMENSIONS ARE IN MILLIMETER |      |      |      |       |      |      |      |      |      |       |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| TYPE                         | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | 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    |