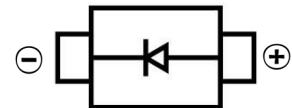


ULTRA FAST RECOVERY RECTIFIER DIODE
FEATURES

- Glass passivated junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- 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°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|---------------------|-----------|------|
| Maximum Recurrent Peak Reverse Voltage | V _{RRM} | 1000 | V |
| DC Blocking Reverse Voltage | V _R | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 700 | V |
| Maximum Average Forward Rectified Current | I _F | 2 | A |
| Non-Repetitive Peak Forward Surge Current @t@=8.3ms | I _{FSM} | 50 | A |
| Thermal Resistance From Junction To Ambient | R _{θJA} | 40 | °C/W |
| Reverse Recovery Time(@I _F =0.5A, I _R =1.0A, I _{RR} =0.25A) | t _{rr} | 75 | nS |
| Junction Temperature | T _J | -55 ~+150 | °C |
| Storage Temperature | T _{STG} | -55 ~+150 | °C |

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|-------------------|----------------|-----|-----|-----|------|----------------------------|
| Forward voltage | V _F | | | 1.7 | V | I _F =2A |
| Reverse current | I _R | | | 5 | uA | V _R =1000V |
| Diode capacitance | C _D | | 30 | | pF | V _R =4V, f=1MHz |

ULTRA FAST RECOVERY RECTIFIER DIODE

Typical Characteristics

FIG. 1 – FORWARD CURRENT DERATING CURVE

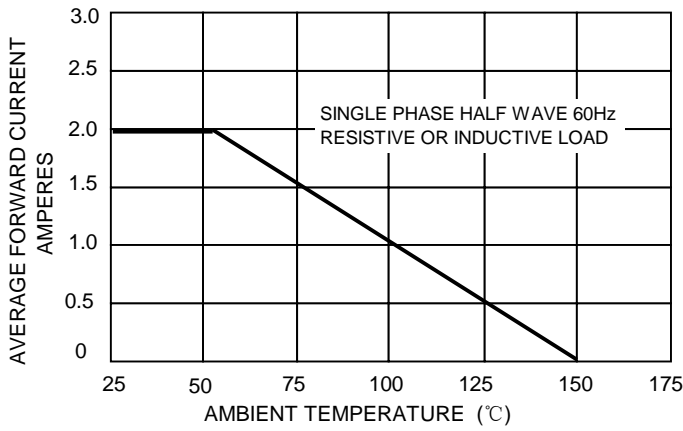


FIG. 2 – MAXIMUM NON-REPETITIVE SURGE CURRENT

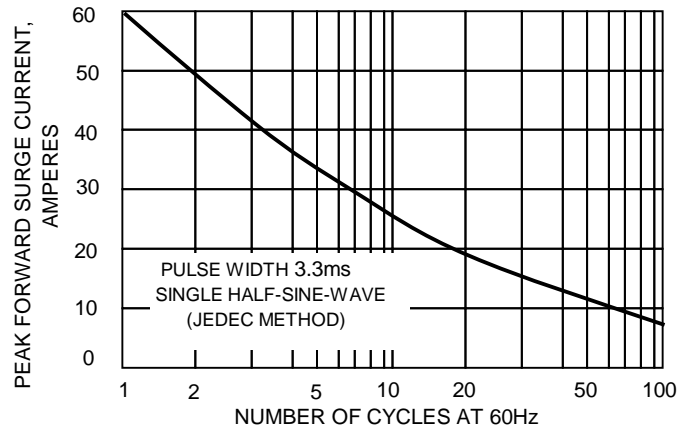


FIG.3 – TYPICAL JUNCTION CAPACITANCE

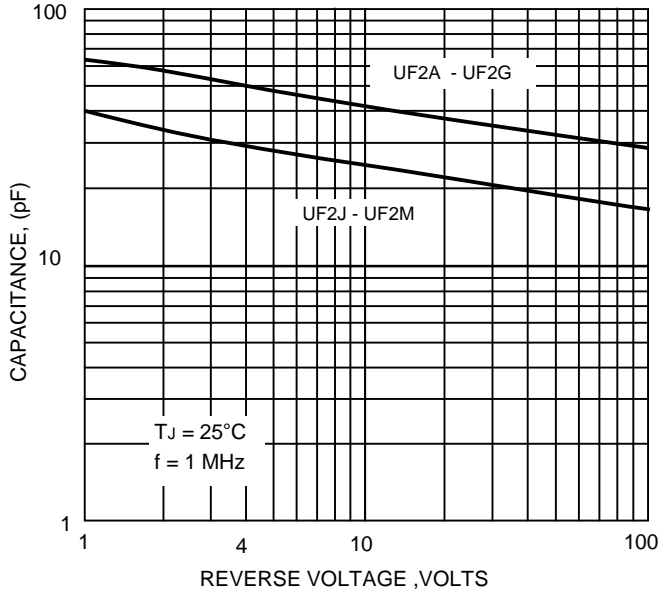
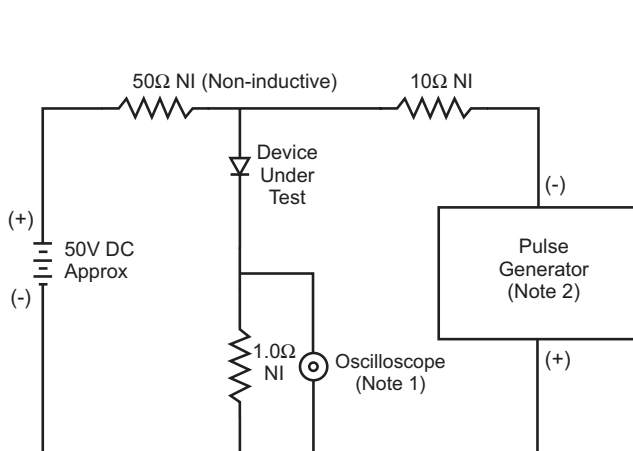
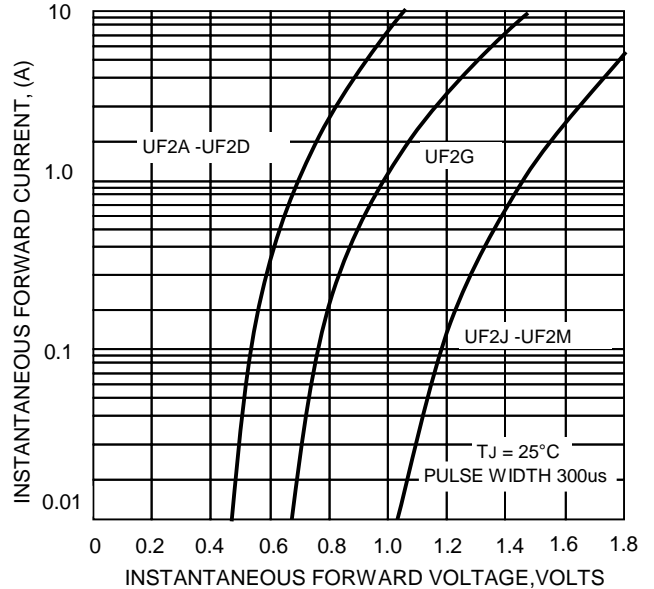
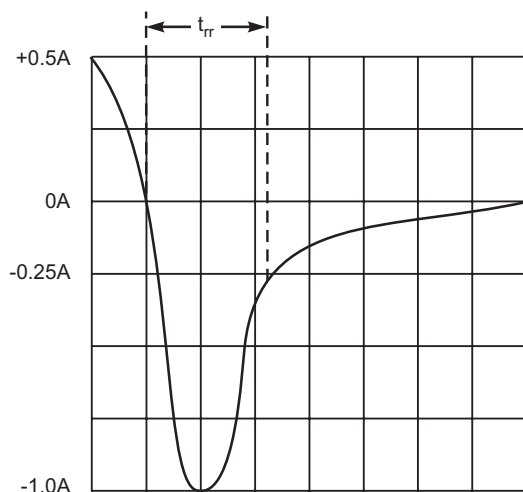


FIG.4-TYPICAL FORWARD CHARACTERISTICS

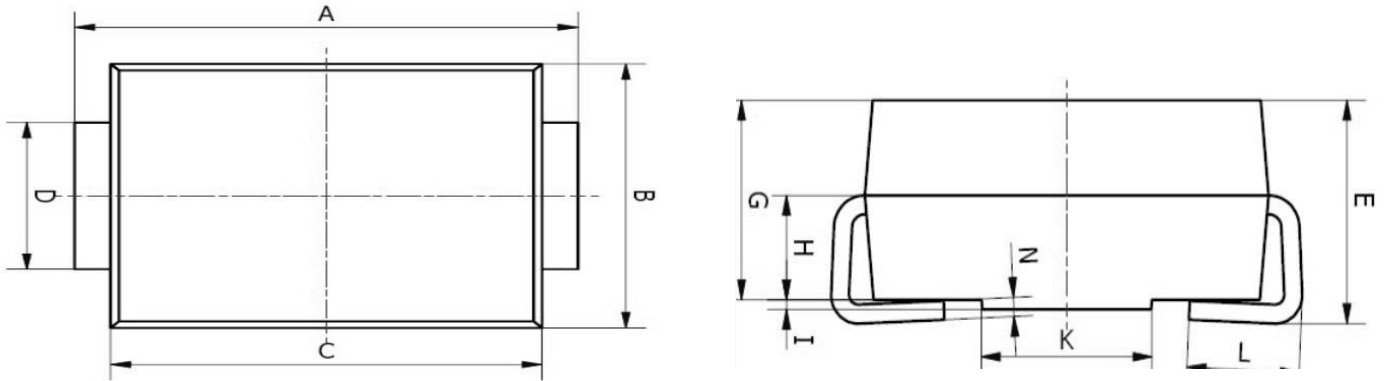


- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
 2. Rise Time = 10ns max. Input Impedance = 50Ω.

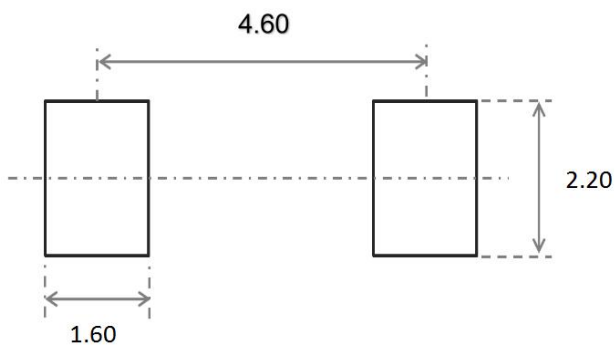


Set time base for 10ns/cm

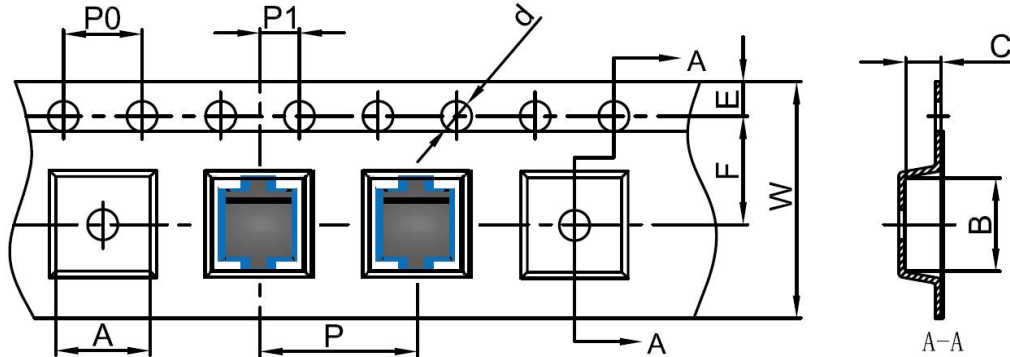
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

ULTRA FAST RECOVERY RECTIFIER DIODE
SMB Package Outline Dimensions


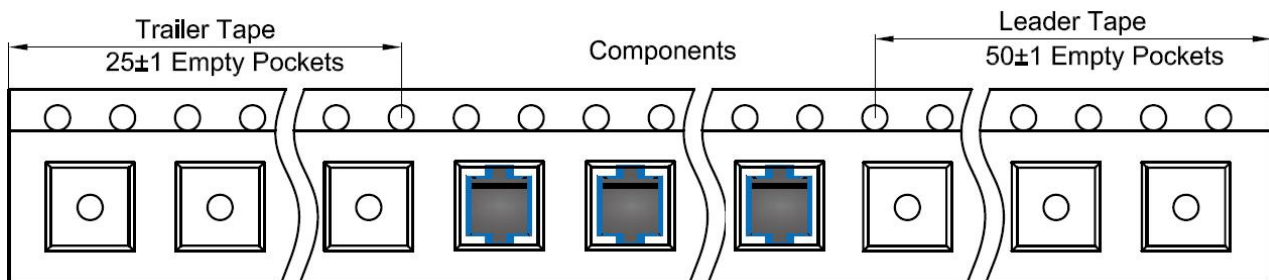
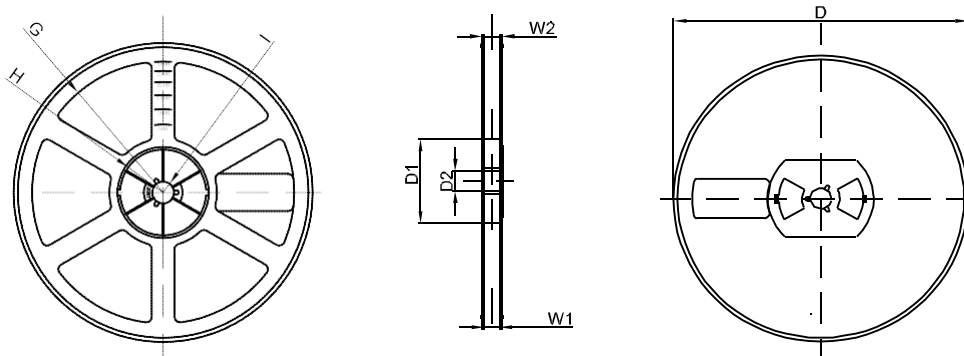
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 5.00 | 5.45 | 0.197 | 0.215 |
| B | 3.20 | 4.00 | 0.126 | 0.157 |
| C | 4.30 | 4.70 | 0.169 | 0.185 |
| D | 1.80 | 2.20 | 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

ULTRA FAST RECOVERY RECTIFIER DIODE
SMB Tape and Reel
SMB Embossed Carrier Tape


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 | W |
| SMB | 4.10 | 5.50 | 2.58 | Ø1.50 | 1.75 | 5.50 | 4.00 | 8.00 | 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 |

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 |