

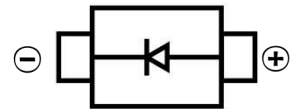
SURFACE MOUNT SUPER FAST RECOVERY DIODES

Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



SMC



Mechanical Data

- Case: SMC/DO-214AB, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.21 grams (approx.)

Maximum Ratings and Electrical Characteristics T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic | Symbol | MURS305 | MURS310 | MURS315 | MURS320 | MURS330 | MURS340 | MURS360 | Unit | |
|---|-----------------------------------|-------------|---------|---------|---------|---------|---------|---------|------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | | | | | | | | | |
| Working Peak Reverse Voltage | V _{RWM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V | |
| DC Blocking Voltage | V _R | | | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V | |
| Average Rectified Output Current @T _L = 75°C | I _O | 3.0 | | | | | | | A | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 100 | | | | | | | A | |
| Forward Voltage @I _F = 3.0A | V _{FM} | 0.95 | | | | 1.25 | | 1.7 | V | |
| Peak Reverse Current @T _A = 25°C At Rated DC Blocking Voltage @T _A = 100°C | I _{RM} | 5.0 | | | | | 500 | | μA | |
| Reverse Recovery Time (Note 1) | t _{rr} | 35 | | | | | | | | nS |
| Typical Junction Capacitance (Note 2) | C _j | 45 | | | | | | | | pF |
| Typical Thermal Resistance (Note 3) | R _{θJL} | 16 | | | | | | | | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +150 | | | | | | | | °C |

- Note: 1. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
 3. Mounted on P.C. Board with 8.0mm² land area.

Typical Characteristics

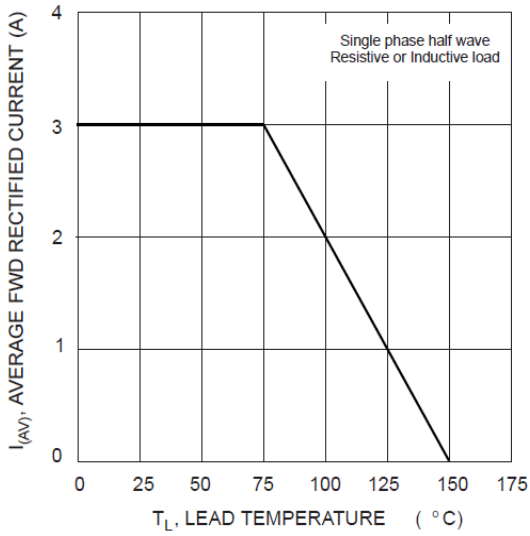


Fig. 1 Forward Current Derating Curve

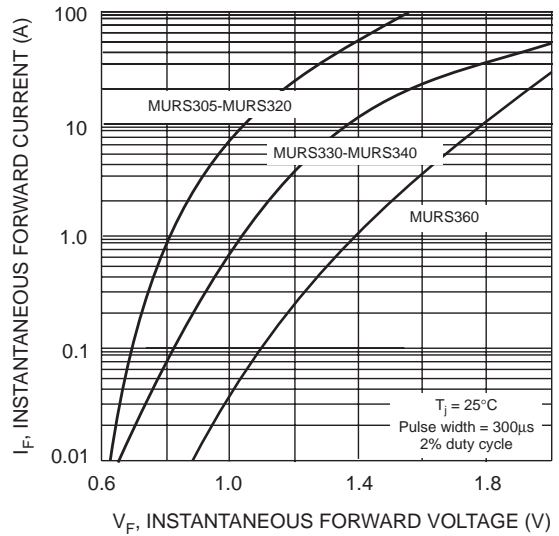


Fig. 2 Typical Forward Characteristics

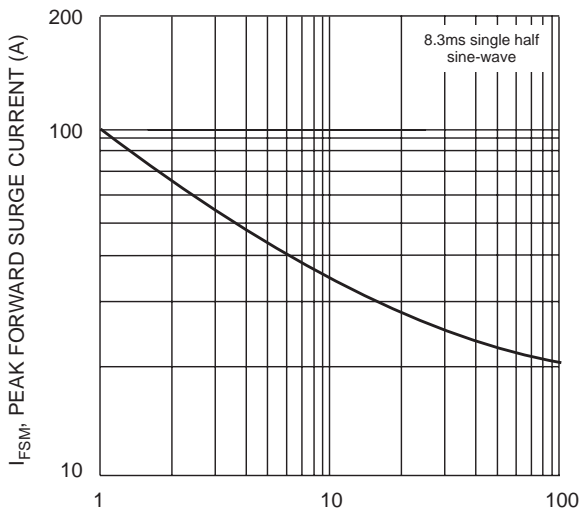


Fig. 3 Peak Forward Surge Current

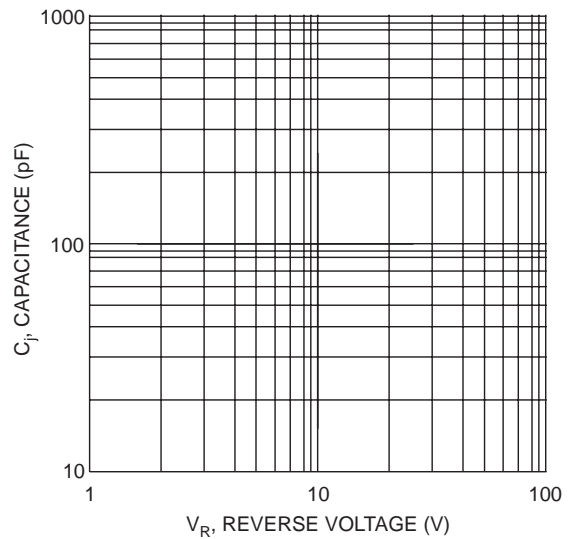
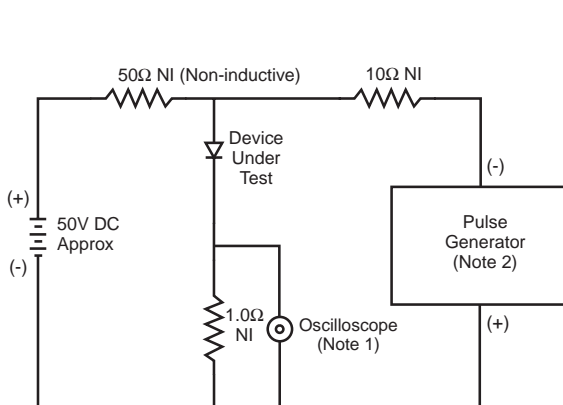
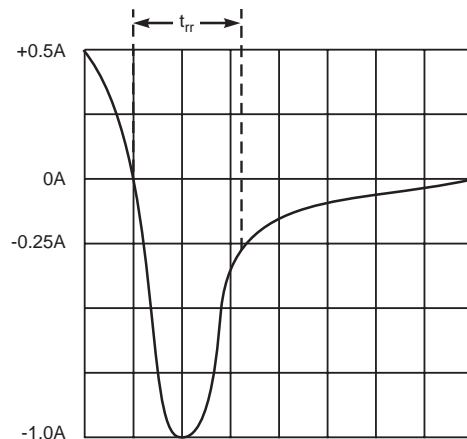


Fig. 4 Typical Junction Capacitance



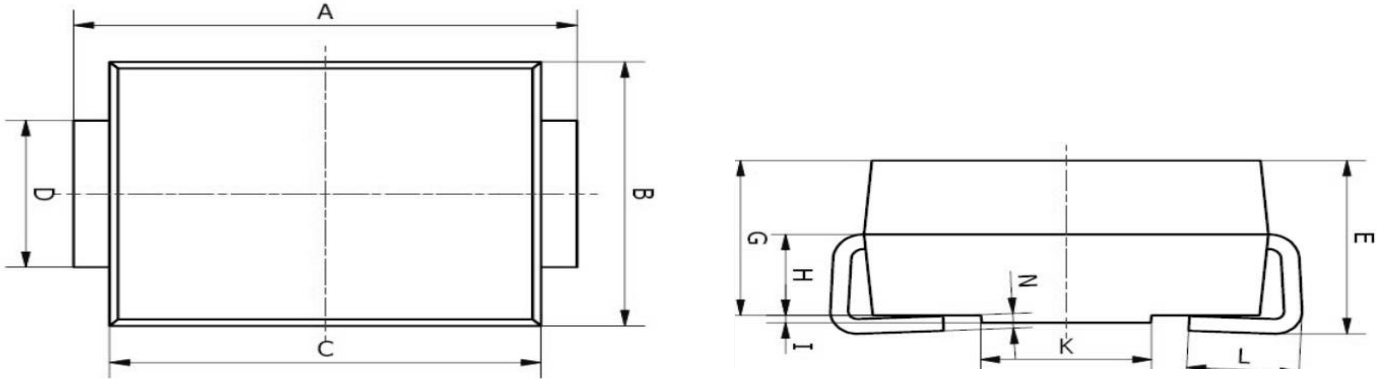
- Notes:
 1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
 2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 5/10ns/cm

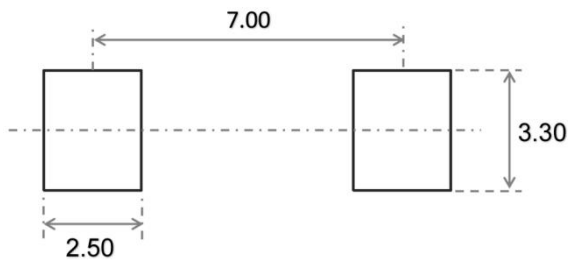
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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

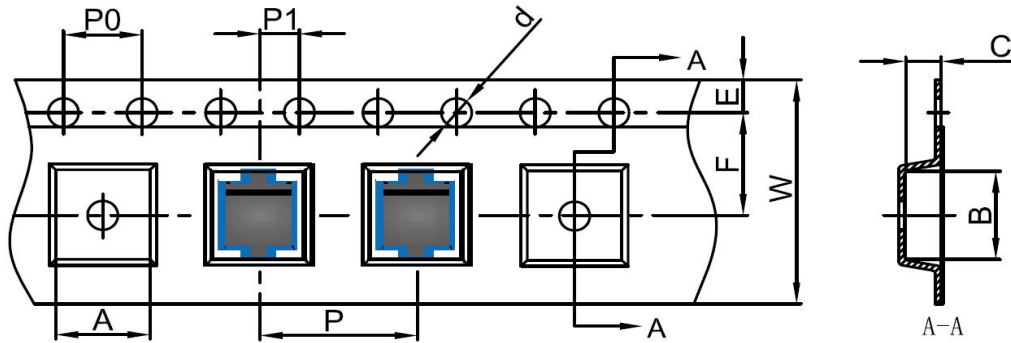


Note:

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

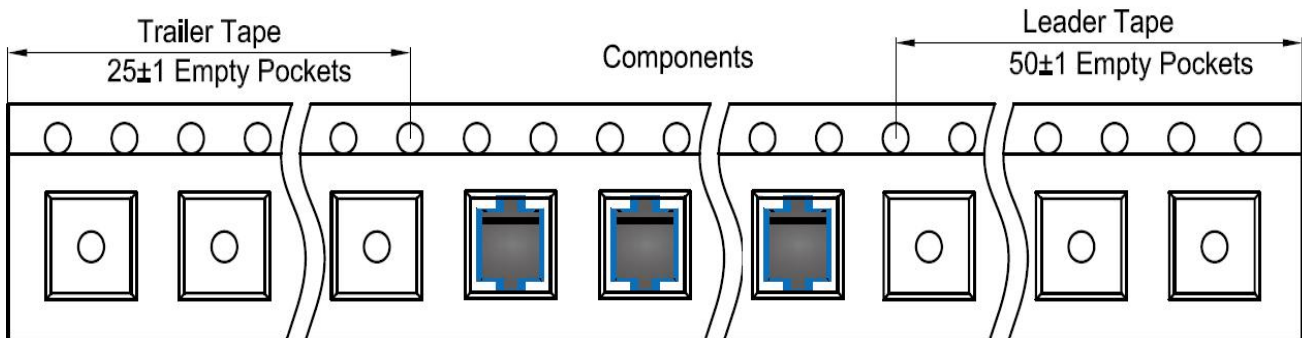
SMC Tape and Reel

SMC Embossed Carrier Tape

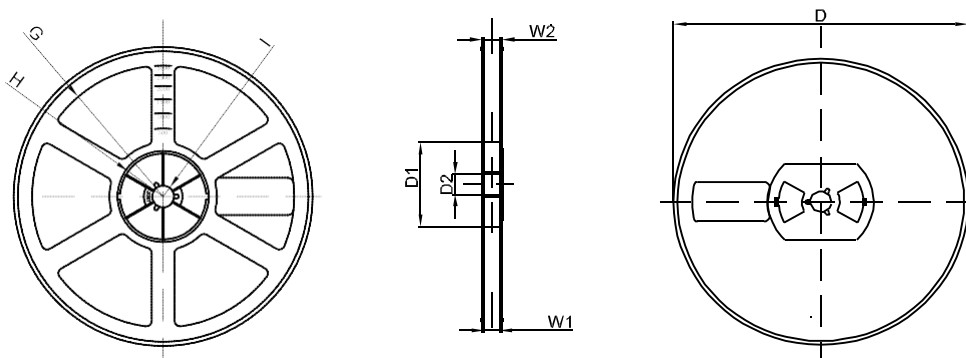


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 | W |
| SMC | 6.3 | 8.25 | 2.90 | Ø1.55 | 1.75 | 7.50 | 4.00 | 8.00 | 2.00 | 16.00 |
| TOLERANCE |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