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HIGH DIODE

# MURS120 THRU MURS160

## SMB Plastic-Encapsulate Diodes

### Super Fast Recovery Rectifier Diode

### Features

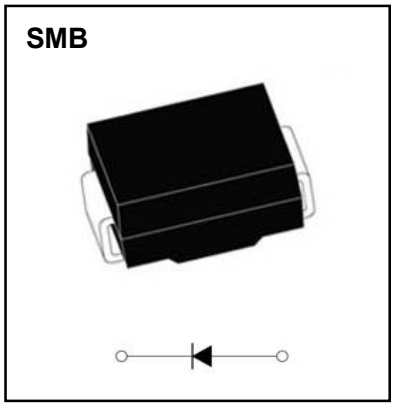
- $I_O$ 1A
- VRRM 200V-600V
- High surge current capability
- Glass passivated chip
- Polarity: Color band denotes cathode

### Applications

- Rectifier

### Marking

- MURS1X0
  X：From 2 To 6




### Limiting Values (Absolute Maximum Rating)

| Item | Symbol | Unit | Conditions | MUR | | |
|---|---|---|---|---|---|---|
| | | | | S120 | S140 | S160 |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | | 200 | 400 | 600 |
| **Maximum RMS Voltage** | $V_{RMS}$ | V | | 140 | 280 | 420 |
| Average Forward Current | $I_{F(AV)}$ | A | 60Hz Half-sine wave, Resistance load, Ta= 100℃ | 1.0 | | |
| Surge(Non-repetitive)Forward Current | $I_{FSM}$ | A | 60Hz Half-sine wave,1 cycle, Ta=25℃ | 30 | | |
| Junction Temperature | $T_J$ | ℃ | | -55~+150 | | |
| Storage Temperature | $T_{STG}$ | ℃ | | - 55~+150 | | |

### Electrical Characteristics ($T_a$=25℃ Unless otherwise specified)

| Item | Symbol | Unit | Test Condition | | MUR | | |
|---|---|---|---|---|---|---|---|
| | | | | | S120 | S140 | S160 |
| Peak Forward Voltage | $V_{FM}$ | V | $I_{FM}$=1.0A | | 0.875 | 1.25 | |
| Peak Reverse Current | $I_{RRM1}$ | μA | $V_{RM}=V_{RRM}$ | $T_a$=25℃ | 2 | 5 | |
| | $I_{RRM2}$ | | | $T_a$=125℃ | 50 | | |
| Reverse Recovery time | $t_{rr}$ | ns | $I_F$=0.5A $I_R$=1A $I_{RR}$=0.25A | | 25 | 50 | |
| Thermal Resistance(Typical) | $R_{\theta J-A}$ | ℃/W | Between junction and ambient | | 55 | | |
| | $R_{\theta J-L}$ | | Between junction and lead | | 25 | | |

### Notes:

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.27" x 0.27" (7.0 mm x 7.0 mm) copper pad areas

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## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

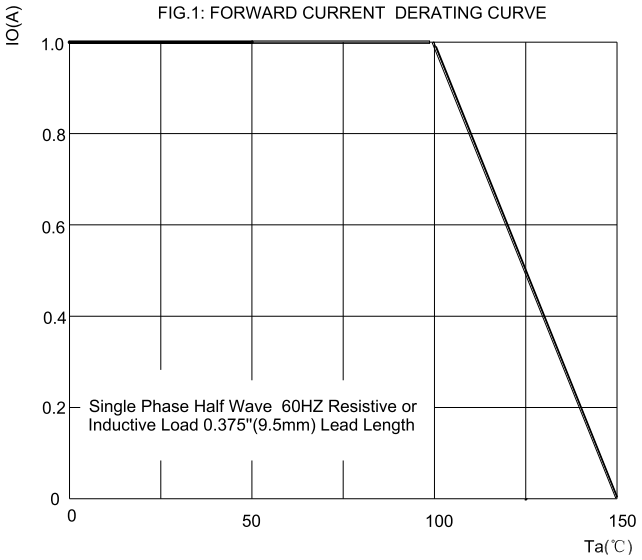



FIG.2:MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

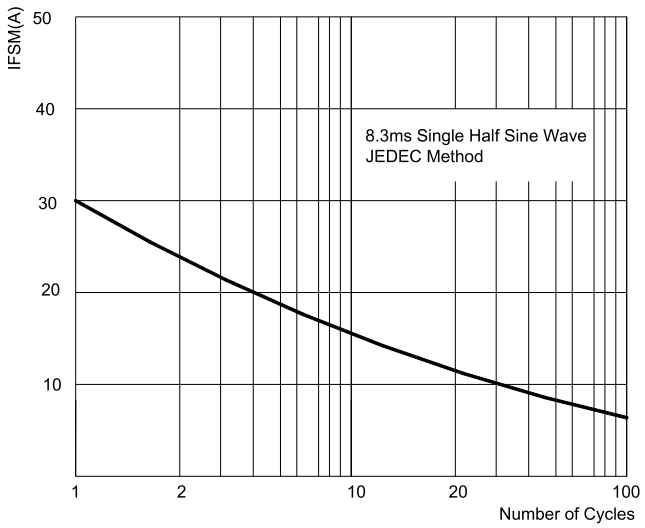



FIG.3: TYPICAL FORWARD CHARACTERISTICS

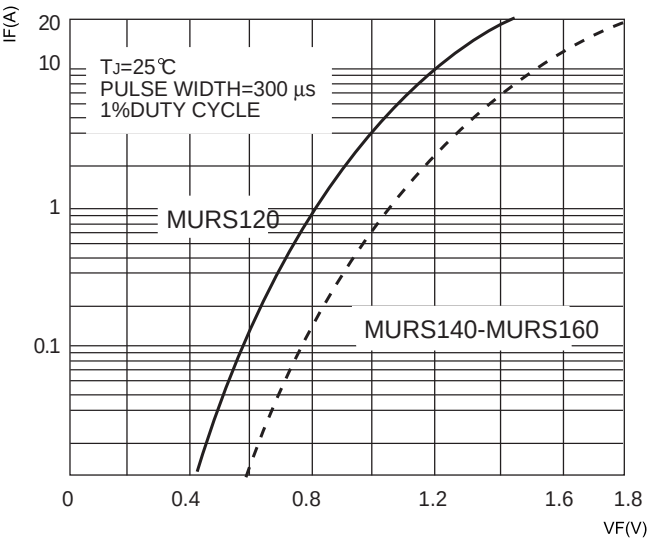



FIG.4: TYPICAL REVERSE CHARACTERISTICS

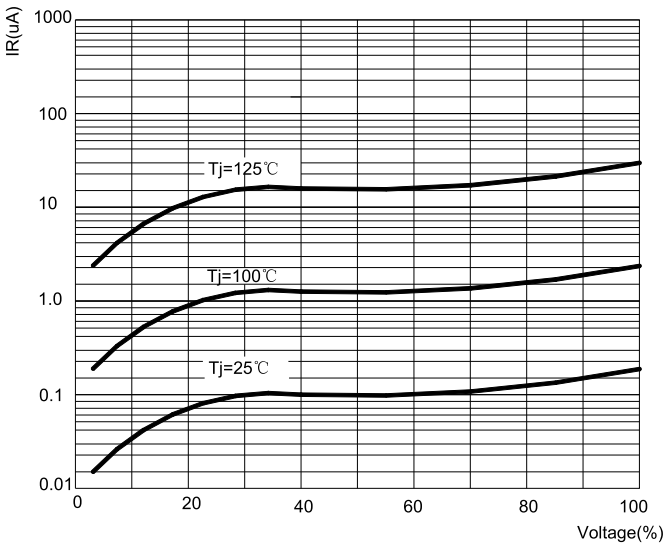
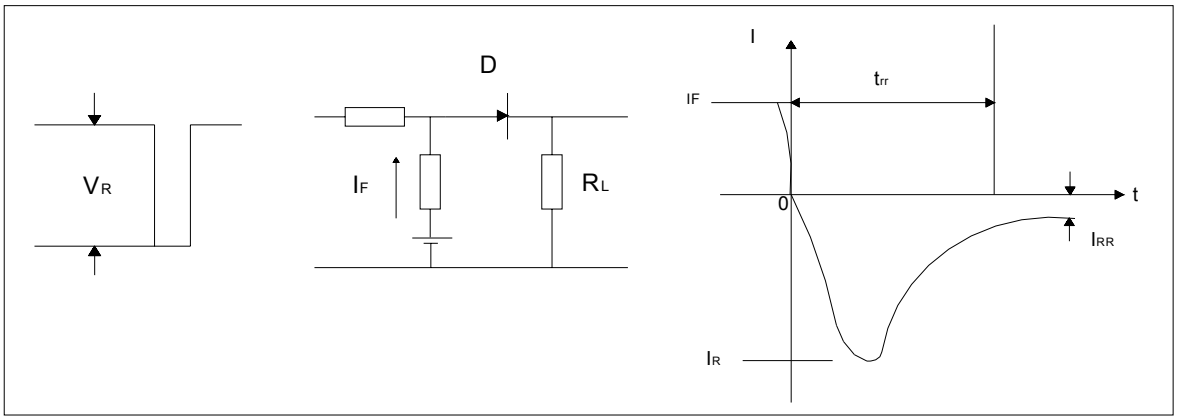
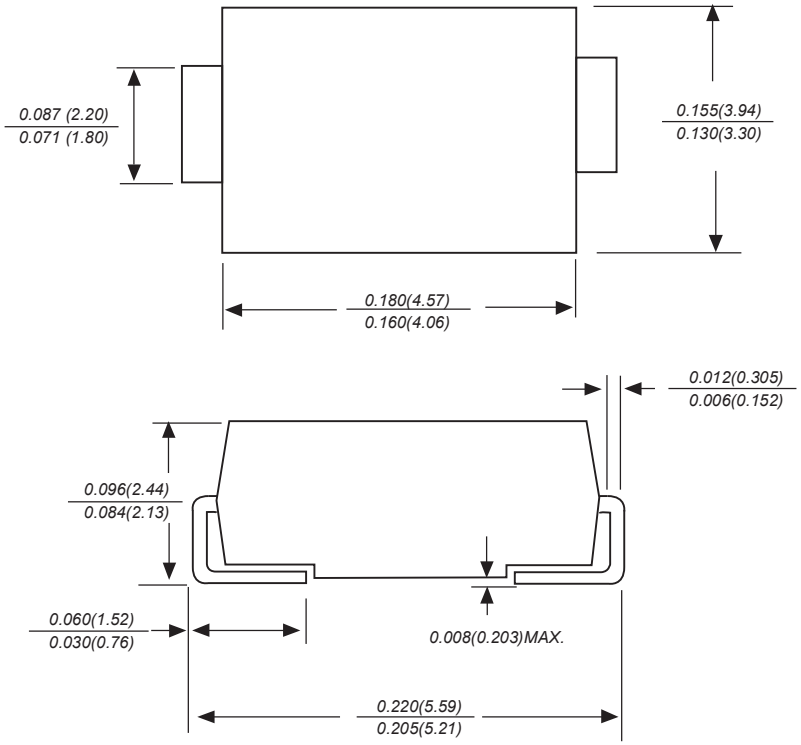



FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



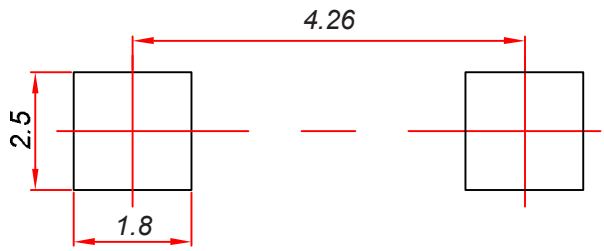
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## SMB Package Outline Dimensions




*Dimensions in inches and (millimeters)*

## SMB Suggested Pad Layout




**Note:**
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

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# Reel Taping Specifications For Surface Mount Devices–SMB

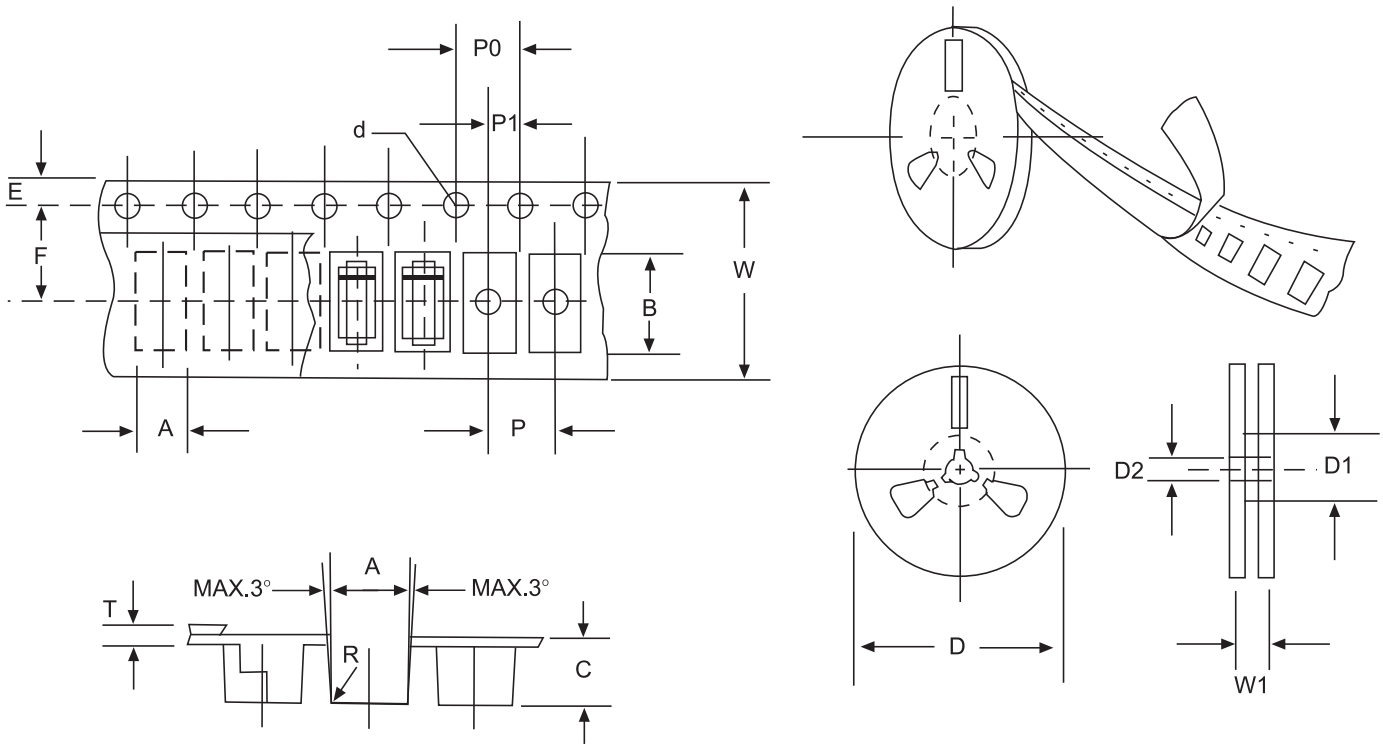



FIG:CONFIGURATION OF AXIAL TAPING

| ITEM | SYMBOL | SMB mm(inch) |
|---|---|---|
| Carrier width | A | 4.09±0.1(0.161±0.004) |
| Carrier length | B | 5.82±0.1(0.229±0.004) |
| Carrier depth | C | 3.33±0.1(0.131±0.004) |
| Sprocket hole | d | 1.55±0.05(0.061±0.0002 |
| Reel outside diameter | D | 330/178±2.0(13/7.0±0.79) |
| Reel inner diameter | D1 | 8.0±0.2(0.315±0.008) |
| Feed hole diameter | D2 | 13±0.5(0.512±0.020) |
| Stroket hole position | E | 1.75±0.1(0.069±0.004) |
| Punch hole position | F | 5.65±0.05(0.222±0.002) |
| Punch hole pitch | P | 8.0±0.1(0.315±0.004) |
| Sprocket hole pitch | P0 | 4.0±0.1(0.157±0.004) |
| Embossment center | P1 | 2.0±0.1(0.079±0.004) |
| Totall tape thickness | T | 0.32±0.1(0.013±0.004) |
| Tape width | W | 12.0±0.2(0.472±0.008) |
| Reel width | W1 | 16.8±2.0(0.661±0.079) |

NOTE:Devices are packde in accordance with EIA standard RS-481-A and specification given above.