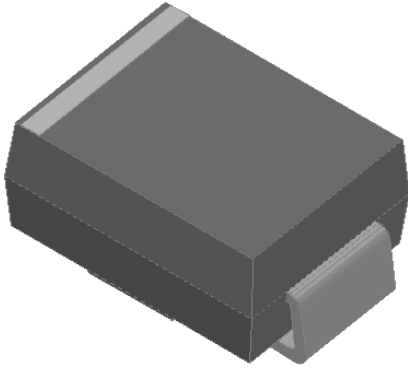


Surface Mount Super Fast Recovery Rectifier

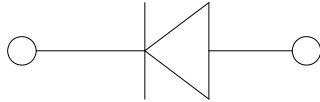


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



Mechanical Data

- **Package:** DO-214AA (SMB)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MURS220 | MURS240 | MURS260 |
|---|------------------|------------------|------------|---------|---------|
| Device marking code | | | MURS220 | MURS240 | MURS260 |
| Maximum Repetitive Peak Reverse Voltage | VRRM | V | 200 | 400 | 600 |
| Maximum RMS Voltage | VRMS | V | 140 | 280 | 420 |
| Maximum DC blocking Voltage | VDC | V | 200 | 400 | 600 |
| Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1) | I _O | A | 2.0 | | |
| Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C | I _{FSM} | A | 50 | | |
| Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C | | | 100 | | |
| Current squared time @1ms≤t≤8.3ms T _j =25°C, Rating of per diode | I ² t | A ² s | 10.375 | | |
| Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C | C _j | pF | 25 | 25 | 24 |
| Storage temperature | T _{stg} | °C | -55 ~ +150 | | |
| Junction temperature | T _j | °C | -55 ~ +150 | | |



MURS220 THRU MURS260

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | MURS220 | MURS240 | MURS260 |
|---|-----------------|------|--|---------|---------|---------|
| Maximum instantaneous forward voltage drop per diode | V _F | V | I _{FM} =2.0A | 0.92 | 1.25 | |
| Maximum reverse recovery time | t _{rr} | ns | I _F =0.5A, I _R =1.0A, I _{rr} =0.25A | 25 | 50 | |
| Maximum DC reverse current at rated DC blocking voltage per diode | I _R | μA | T _j =25°C | 5.0 | | |
| | | | T _j =125°C | 50 | | |

■ Dynamic Characteristics

◆ MURS220

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---------------------------------|------------------|------|-----------------------|---|------|------|-----|
| Reverse Recovery Time | T _{RR} | ns | T _j =25°C | I _F =1A, di/dt=-50A/us V _{RM} =30V | - | 26 | - |
| | | | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =100V | - | 23 | - |
| | | | T _j =125°C | | - | 30 | - |
| Peak recovery current | I _{RRM} | A | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =100V | - | 3.1 | - |
| | | | T _j =125°C | | - | 5.0 | - |
| Reverse recovery charge | Q _{rr} | nC | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =100V | - | 35.4 | - |
| | | | T _j =125°C | | - | 73.8 | - |
| Non-repetitive avalanche energy | E _{AS} | mJ | T _j =25°C | I _R =1.8 A, L=15 mH | 24.3 | - | - |

◆ MURS240

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---------------------------------|------------------|------|-----------------------|---|-----|-------|-----|
| Reverse Recovery Time | T _{RR} | ns | T _j =25°C | I _F =1A, di/dt=-50A/us V _{RM} =30V | - | 35 | - |
| | | | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =200V | - | 30 | - |
| | | | T _j =125°C | | - | 45 | - |
| Peak recovery current | I _{RRM} | A | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =200V | - | 3.7 | - |
| | | | T _j =125°C | | - | 5.8 | - |
| Reverse recovery charge | Q _{rr} | nC | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =200V | - | 55.4 | - |
| | | | T _j =125°C | | - | 130.6 | - |
| Non-repetitive avalanche energy | E _{AS} | mJ | T _j =25°C | I _R =0.5A, L=15 mH | 1.9 | - | - |

◆ MURS260

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---------------------------------|------------------|------|-----------------------|---|-----|-------|-----|
| Reverse Recovery Time | T _{RR} | ns | T _j =25°C | I _F =1A, di/dt=-50A/us V _{RM} =30V | - | 50 | - |
| | | | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =400V | - | 43 | - |
| | | | T _j =125°C | | - | 66 | - |
| Peak recovery current | I _{RRM} | A | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =400V | - | 5.0 | - |
| | | | T _j =125°C | | - | 7.4 | - |
| Reverse recovery charge | Q _{rr} | nC | T _j =25°C | I _F =2A di/dt=-200A/us V _{RM} =400V | - | 105.9 | - |
| | | | T _j =125°C | | - | 243.8 | - |
| Non-repetitive avalanche energy | E _{AS} | mJ | T _j =25°C | I _R =0.5A, L=15 mH | 1.9 | - | - |



MURS220 THRU MURS260

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MURS220 | MURS240 | MURS260 |
|----------------------------|----------------------------------|------|---------|---------|---------|
| Typical Thermal resistance | R _{θJ-A} ⁽¹⁾ | °C/W | 60 | | |
| | R _{θJ-L} ⁽¹⁾ | | 20 | | |
| | R _{θJ-C} ⁽¹⁾ | | 15 | | |

Note:
 (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

■ Characteristics (Typical)

FIG.1: I_o-TL Curve

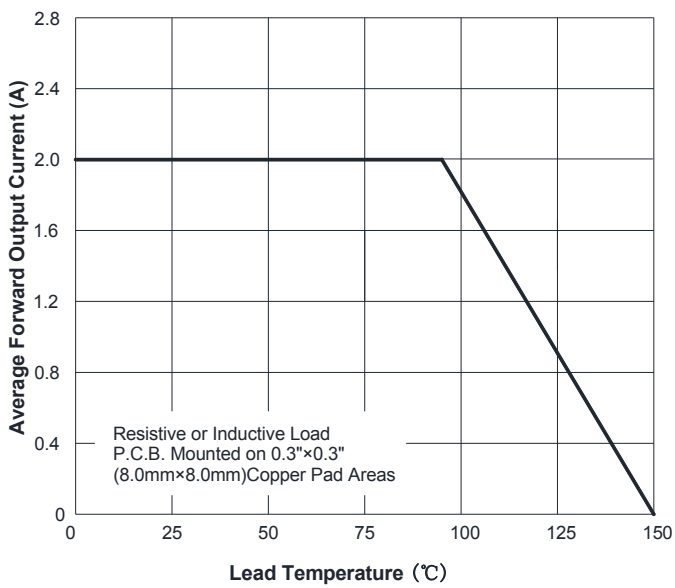


FIG.2: Forward Surge Current Capability

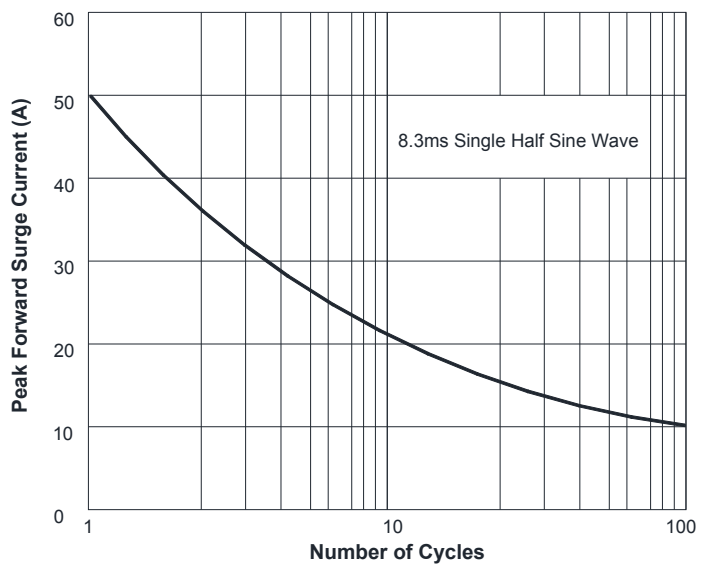


FIG.3: Typical Forward Voltage

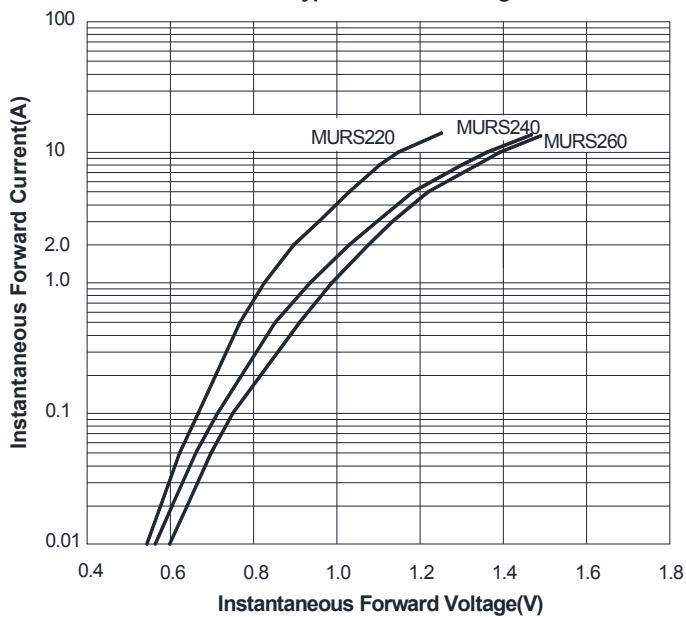
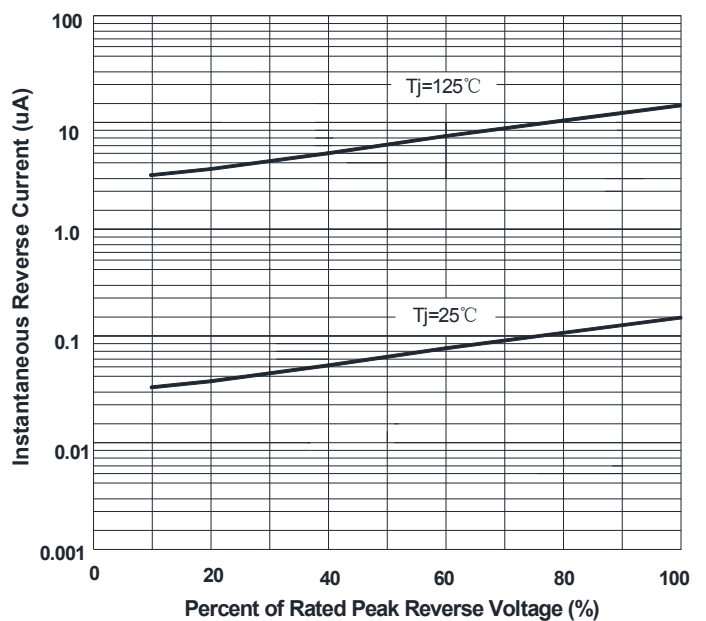


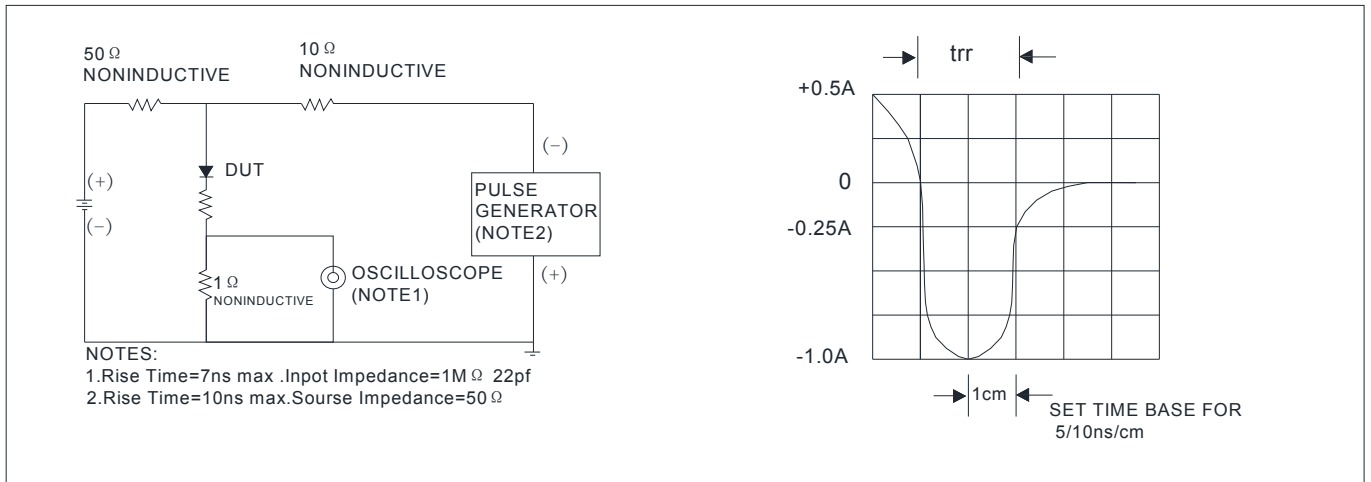
FIG.4: Typical Reverse Characteristics





MURS220 THRU MURS260

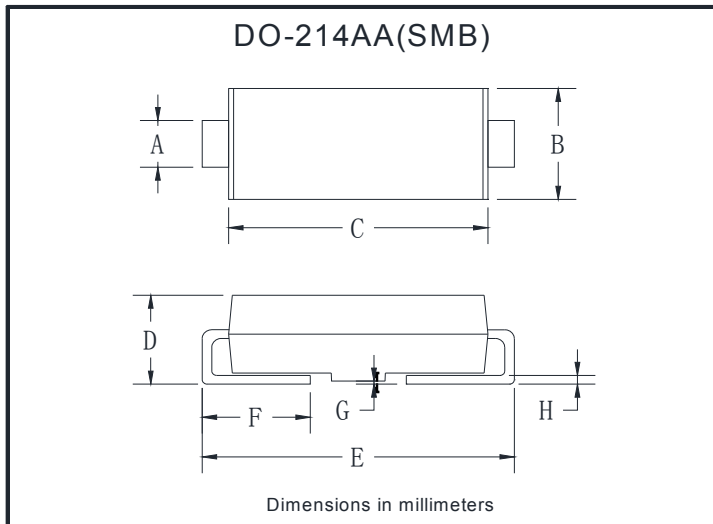
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|-----------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| MURS220-MURS260 | F1 | Approximate 0.096 | 3000 | 6000 | 48000 | 13" reel |
| MURS220-MURS260 | F2 | Approximate 0.096 | 750 | 6000 | 24000 | 7" reel |
| MURS220-MURS260 | F3 | Approximate 0.096 | 500 | 4000 | 16000 | 7" reel |

Outline Dimensions

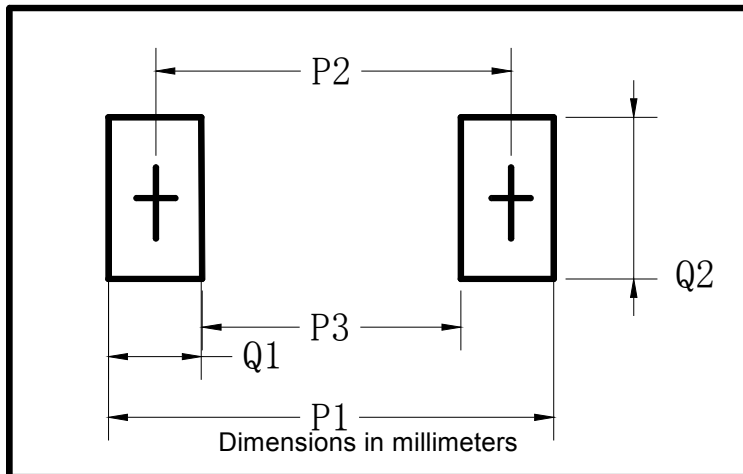


| DO-214AA(SMB) | | |
|---------------|------|------|
| Dim | Min | Max |
| A | 1.85 | 2.15 |
| B | 3.30 | 3.94 |
| C | 4.05 | 4.75 |
| D | 1.99 | 2.61 |
| E | 5.21 | 5.59 |
| F | 0.90 | 1.41 |
| G | 0.10 | 0.20 |
| H | 0.15 | 0.31 |



MURS220 THRU MURS260

■ Suggested pad layout



| DO-214AA(SMB) | |
|---------------|-------------|
| Dim | Millimeters |
| P1 | 6.8 |
| P2 | 4.3 |
| P3 | 1.8 |
| Q1 | 2.5 |
| Q2 | 2.3 |



MURS220 THRU MURS260

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