

Surface-Mount Ultrafast Plastic Rectifier


SMB (DO-214AA)

 Cathode  Anode

LINKS TO ADDITIONAL RESOURCES



FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
 COMPLIANT
 HALOGEN
FREE

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

MECHANICAL DATA

Case: SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 400 V, 600 V |
| I_{FSM} | 35 A |
| t_{rr} | 50 ns |
| V_F at $I_F = 3.0$ A | 1.20 V |
| T_J max. | 175 °C |
| Package | SMB (DO-214AA) |
| Circuit configuration | Single |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | |
|--|----------------|-------------------|----------|------|
| PARAMETER | SYMBOL | MURS340S | MURS360S | UNIT |
| Device marking codes | | 3GS | 3JS | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 400 | 600 | V |
| Maximum average forward rectified current | $T_M = 130$ °C | $I_{F(AV)}^{(1)}$ | 3.0 | A |
| | $T_A = 25$ °C | $I_{F(AV)}^{(2)}$ | 1.5 | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 35 | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -65 to +175 | | °C |

Notes

(1) Units mounted on PCB with 8 mm x 8 mm, 1 oz. copper pad areas (fig. 1)

(2) Free air, mounted on recommended copper pad area (fig. 2)

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

| PARAMETER | TEST CONDITIONS | SYMBOL | MURS340S | MURS360S | UNIT |
|---------------------------------------|--|-------------|-----------------------------------|----------|---------------|
| Maximum instantaneous forward voltage | $I_F = 3.0\text{ A}$ | $V_F^{(1)}$ | $T_J = 25\text{ }^\circ\text{C}$ | 1.45 | V |
| | | | $T_J = 150\text{ }^\circ\text{C}$ | 1.20 | |
| Maximum instantaneous reverse current | Rated V_R | $I_R^{(2)}$ | $T_J = 25\text{ }^\circ\text{C}$ | 5.0 | μA |
| | | | $T_J = 150\text{ }^\circ\text{C}$ | 150 | |
| Maximum reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | 50 | | ns |
| Maximum reverse recovery time | $I_F = 1.0\text{ A}$, $dI/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$, $I_{rr} = 10\% I_{RM}$ | t_{rr} | 75 | | ns |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | MURS340S | MURS360S | UNIT |
|----------------------------|-----------------------|----------|----------|---------------------------|
| Typical thermal resistance | $R_{\theta JM}^{(1)}$ | 12 | | $^\circ\text{C}/\text{W}$ |
| | $R_{\theta JA}^{(2)}$ | 120 | | |

Notes

- (1) Units mounted on PCB with 8 mm x 8 mm, 1 oz. copper pad areas. Thermal resistance $R_{\theta JM}$ - junction to mount
(2) Free air, mounted on recommended copper pad area. Thermal resistance $R_{\theta JA}$ - junction to ambient

ORDERING INFORMATION (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|-----------------|-----------------|------------------------|---------------|------------------------------------|
| MURS360S-M3/52T | 0.093 | 52T | 750 | 7" diameter plastic tape and reel |
| MURS360S-M3/5BT | 0.093 | 5BT | 3200 | 13" diameter plastic tape and reel |

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

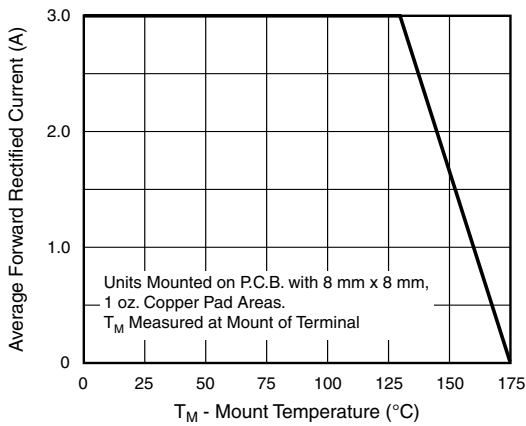


Fig. 1 - Forward Current Derating Curve

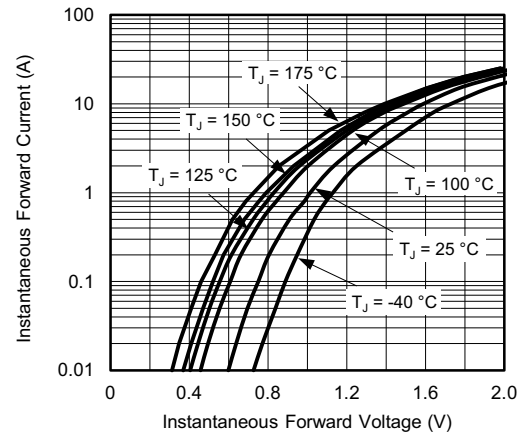


Fig. 4 - Typical Instantaneous Forward Characteristics

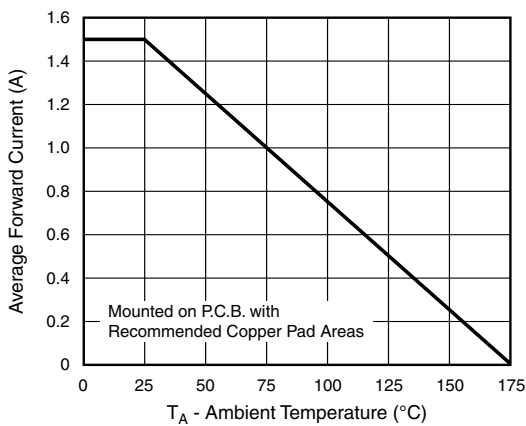


Fig. 2 - Forward Current Derating Curve

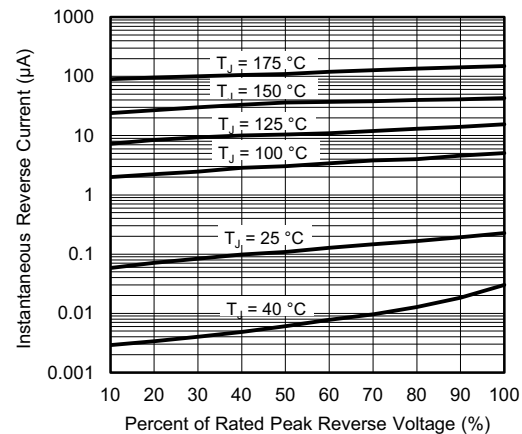


Fig. 5 - Typical Reverse Characteristics

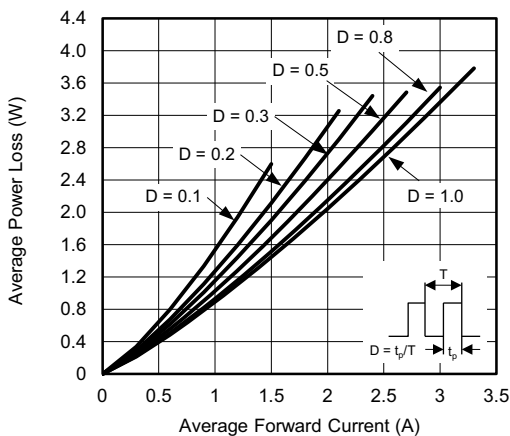


Fig. 3 - Forward Power Loss Characteristics

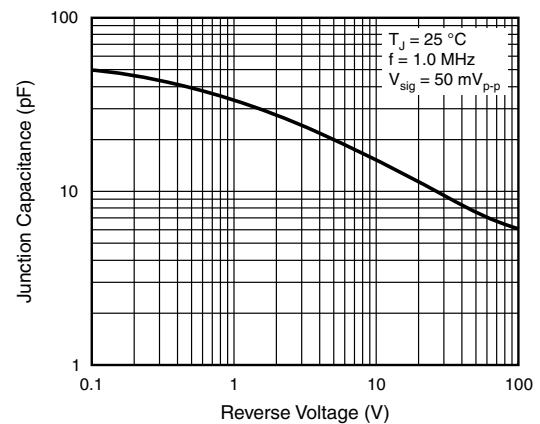
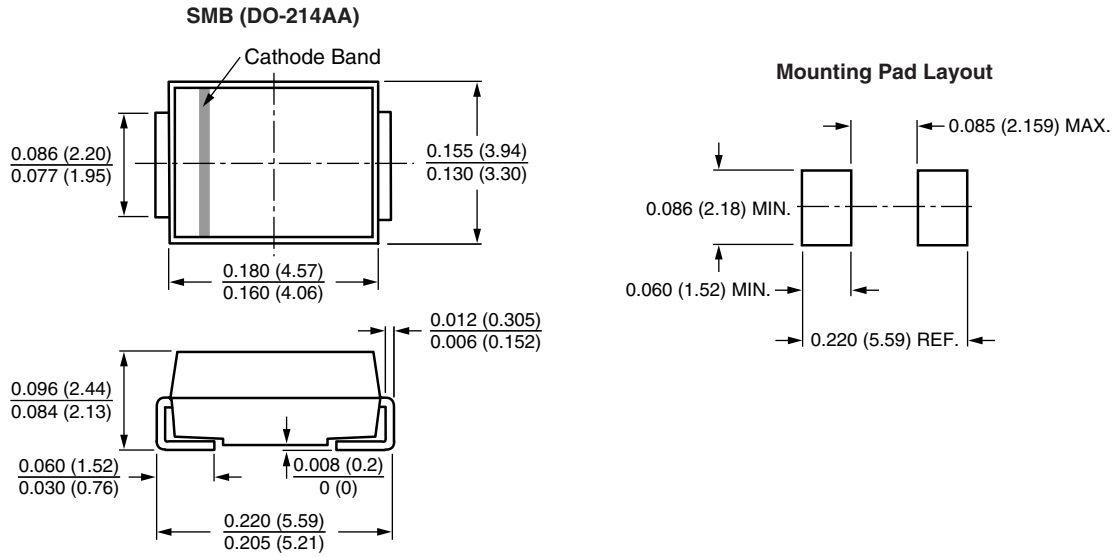


Fig. 6 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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