

Surface Mount Ultrafast Plastic Rectifier



DO-214AB (SMC)

| MAJOR RATINGS AND CHARACTERISTICS | |
|-----------------------------------|--------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 400 V, 600 V |
| I_{FSM} | 125 A |
| t_{tr} | 50 ns |
| V_F | 1.05 V |
| $T_j \text{ max.}$ | 175 °C |

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in high frequency rectification and free-wheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

MECHANICAL DATA

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | |
|--|----------------|--|---------|------|
| PARAMETER | SYMBOL | MURS340 | MURS360 | UNIT |
| Device marking code | | MG | MJ | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 400 | 600 | V |
| Working peak reverse voltage | V_{RWM} | 400 | 600 | V |
| Maximum DC blocking voltage | V_{DC} | 400 | 600 | V |
| Maximum average forward rectified current at: (see Fig. 1) | $I_{F(AV)}$ | $T_L = 130\text{ °C}$ $T_L = 115\text{ °C}$ | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 125 | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 65 to + 175 | | °C |

MURS340 & MURS360



Vishay General Semiconductor

| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | |
|---|---|-----------------|----------------------|---------|------|
| PARAMETER | TEST CONDITIONS | SYMBOL | MURS340 | MURS360 | UNIT |
| Maximum instantaneous forward voltage ⁽¹⁾ | I _F = 3.0 A, T _J = 25 °C I _F = 4.0 A, T _J = 25 °C I _F = 3.0 A, T _J = 150 °C | V _F | 1.25 1.28 1.05 | | V |
| Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾ | T _J = 25 °C T _J = 150 °C | I _R | 10 250 | | μA |
| Maximum reverse recovery time | at I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | t _{rr} | 50 | | ns |
| Maximum reverse recovery time | at I _F = 1.0 A, di/dt = 50 A/μs, V _R = 30 V, I _{rr} = 10 % I _{RM} | t _{rr} | 75 | | ns |
| Maximum forward recovery time | I _F = 1.0 A, di/dt = 100 A/μs, Rec. to 1.0 V | t _{fr} | 25 | | ns |

Note:

(1) Pulse test: t_p = 300 μs, duty cycle ≤ 2 %

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | |
|---|------------------|---------|---------|------|
| PARAMETER | SYMBOL | MURS340 | MURS360 | UNIT |
| Typical thermal resistance junction to ambient | R _{θJL} | 11 | | °C/W |

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| MURS340-E3/57T | 0.211 | 57T | 850 | 7" Diameter Plastic Tape & Reel |
| MURS340-E3/9AT | 0.211 | 9AT | 3200 | 13" Diameter Plastic Tape & Reel |
| MURS340HE3/57T ⁽¹⁾ | 0.211 | 57T | 850 | 7" Diameter Plastic Tape & Reel |
| MURS340HE3/9AT ⁽¹⁾ | 0.211 | 9AT | 3200 | 13" Diameter Plastic Tape & Reel |

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

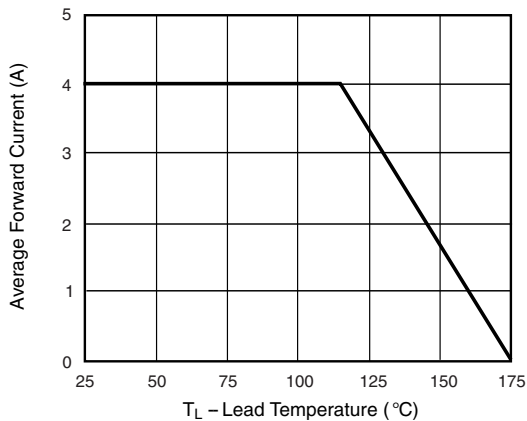


Figure 1. Forward Current Derating Curve

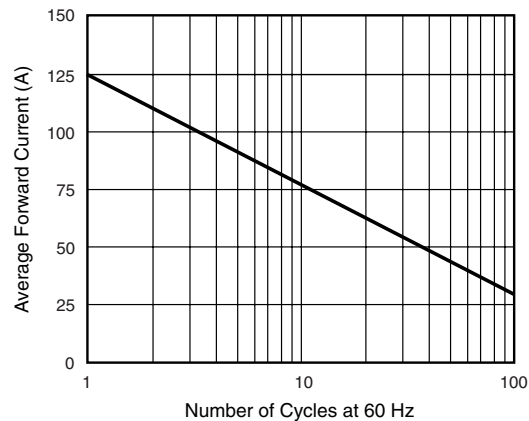


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

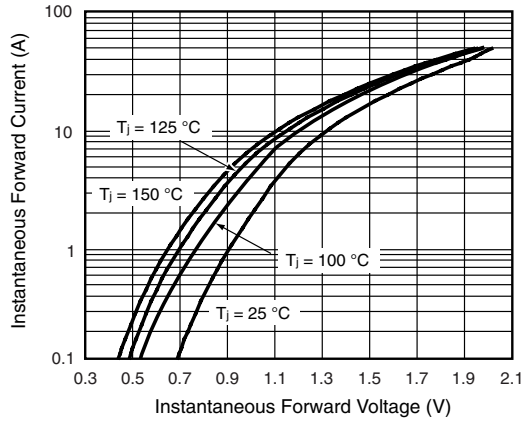


Figure 3. Typical Instantaneous Forward Characteristics

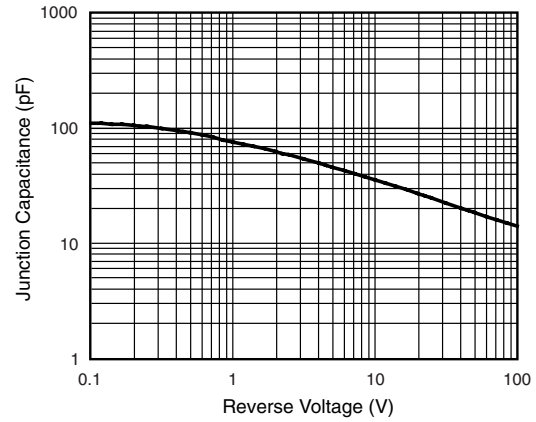


Figure 5. Typical Junction Capacitance

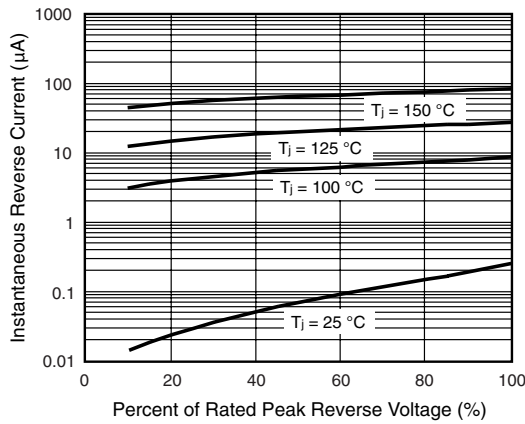


Figure 4. Typical Reverse Characteristics

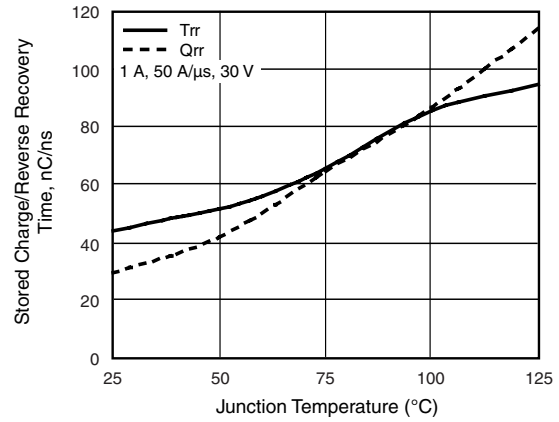
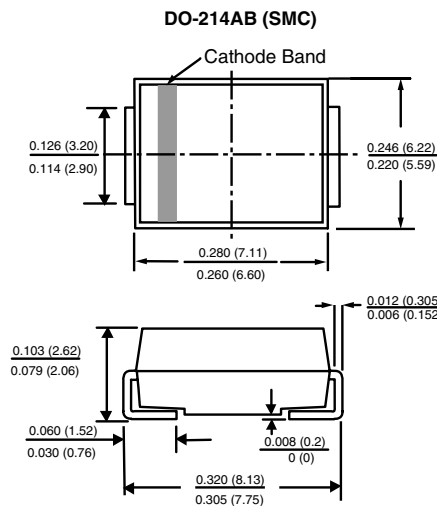
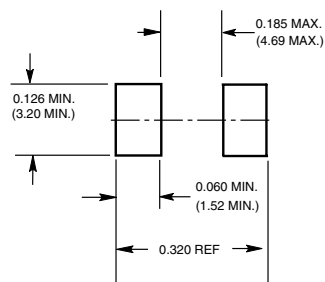


Figure 6. Typical Reverse Switching Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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