

Surface Mount Glass Passivated Rectifier



DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- 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

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|-----------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 100 V to 1000 V |
| I_{FSM} | 55 A |
| I_R | 3.0 μ A |
| V_F at $I_F = 2.0$ A | 0.854 V |
| T_J max. | 150 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | | |
|---|----------------|---------------|------|------|------|------|------|------|
| PARAMETER | SYMBOL | SA2B | SA2D | SA2G | SA2J | SA2K | SA2M | UNIT |
| Device marking code | | 2B | 2D | 2G | 2J | 2K | 2M | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Average forward current | $I_{F(AV)}$ | 2.0 | | | | | | A |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | I_{FSM} | 55 | | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 55 to + 150 | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | | | |
|--|--|----------------|-----------|----------------|---------|---------|
| PARAMETER | TEST CONDITIONS | SYMBOL | TYP. | MAX. | UNIT | |
| Instantaneous forward voltage | $I_F = 1.0$ A | $T_J = 25$ °C | V_F (1) | 0.911 | - | V |
| | | | | $I_F = 2.0$ A | 0.954 | |
| | $I_F = 1.0$ A | $T_J = 125$ °C | | 0.805 | - | |
| | | | | $I_F = 2.0$ A | 0.854 | |
| Reverse current | Rated V_R | $T_J = 25$ °C | I_R (2) | 0.19 | 3 | μ A |
| | | | | $T_J = 125$ °C | 28 | |
| Typical reverse recovery time | $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A | t_{rr} | 1.5 | - | μ s | |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 11 | - | pF | |

Notes

(1) Pulse test: 300 μ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms



| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | |
|--|-----------------------|------|------|------|------|------|------|--------------------|
| PARAMETER | SYMBOL | SA2B | SA2D | SA2G | SA2J | SA2K | SA2M | UNIT |
| Typical thermal resistance | $R_{\theta JA}^{(1)}$ | 80 | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}^{(1)}$ | 12 | | | | | | |

Note

(1) Thermal resistance from junction to ambient and from junction to lead, P.C.B. mounted on 0.79" x 0.79" (20 mm x 20 mm) copper pad areas

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SA2J-E3/61T | 0.064 | 61T | 1800 | 7" diameter plastic tape and reel |
| SA2J-E3/5AT | 0.064 | 5AT | 7500 | 13" diameter plastic tape and reel |

RATINGS AND CHARACTERISTICS CURVES

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

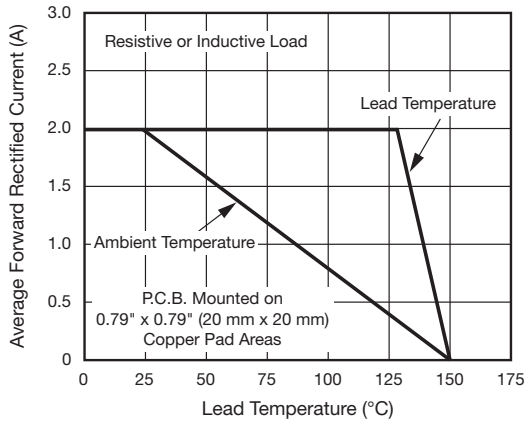


Fig. 1 - Maximum Forward Current Derating Curve

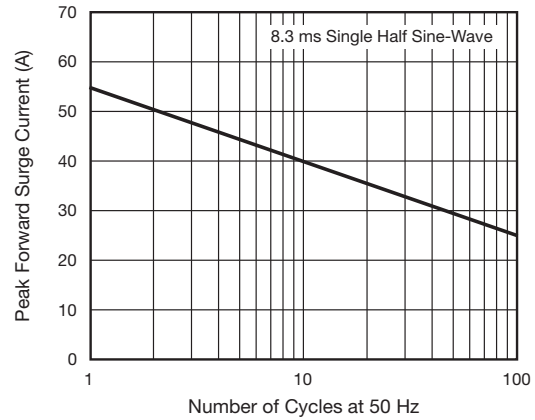


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

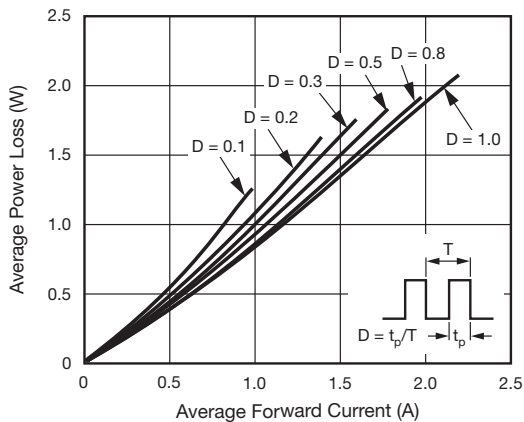


Fig. 2 - Forward Power Loss Characteristics

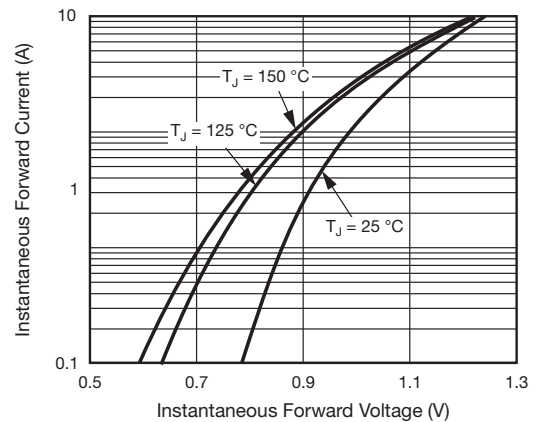


Fig. 4 - Typical Instantaneous Forward Characteristics

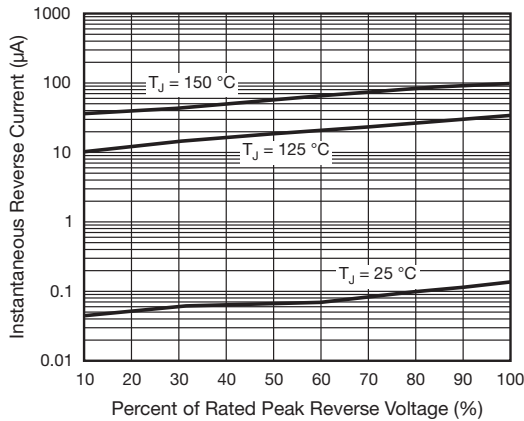


Fig. 5 - Typical Reverse Leakage Characteristics

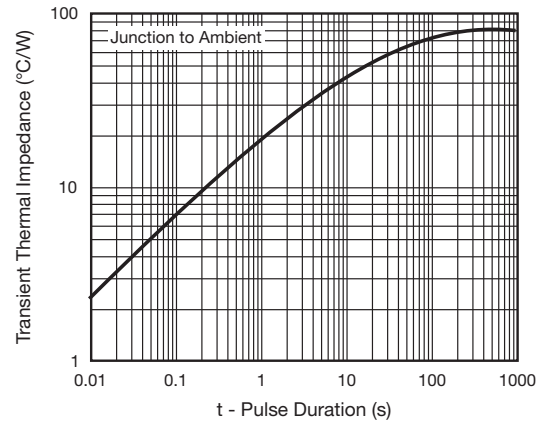


Fig. 7 - Typical Transient Thermal Impedance

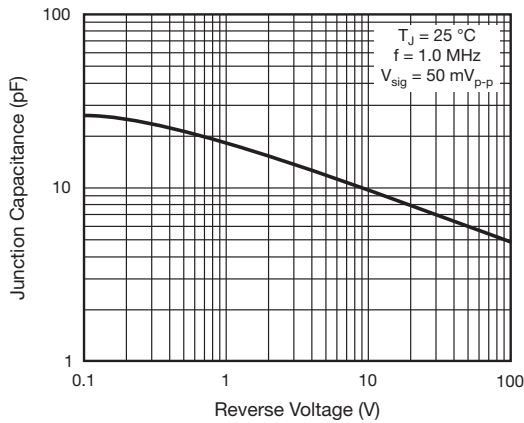
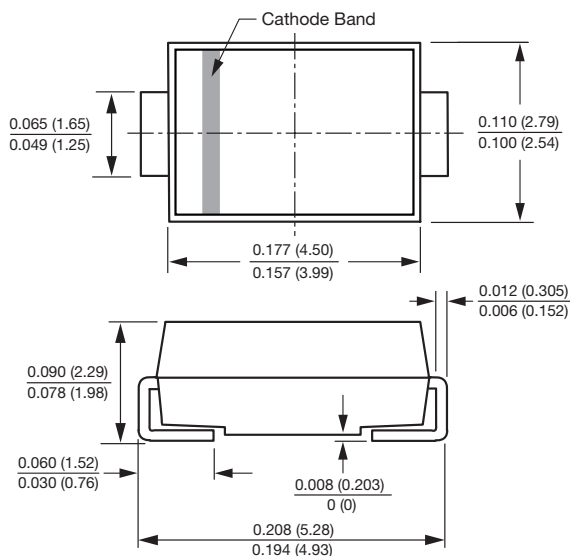


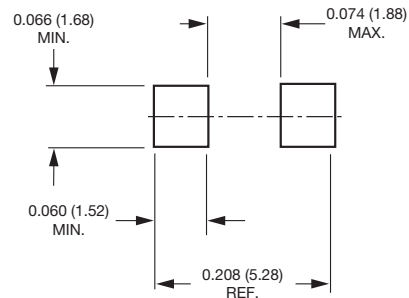
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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