



Surface-Mount Glass Passivated Rectifier



SMA (DO-214AC)

Cathode Anode

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated pellet 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

ADDITIONAL RESOURCES



3D Models

| PRIMARY CHARACTERISTICS | |
|--|------------------------------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 200 V, 400 V, 600 V, 800 V, 1000 V |
| I_{FSM} | 50 A |
| I_R | 5.0 μ A |
| V_F at $I_F = 2.0$ A ($T_A = 125$ °C) | 0.90 V |
| T_J max. | 150 °C |
| Package | SMA (DO-214AC) |
| Circuit configuration | Single |

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMA (DO-214AC)

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 2 whisker test

Polarity: color band denotes cathode end

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | | | |
|--|-------------------|-------------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | CSA2D | CSA2G | CSA2J | CSA2K | CSA2M | UNIT |
| Device marking code | | D2 | G2 | J2 | K2 | M2 | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 200 | 400 | 600 | 800 | 1000 | V |
| Average forward rectified current | $I_{F(AV)}^{(1)}$ | 1.6 | | | | | A |
| | $I_{F(AV)}^{(2)}$ | 2.0 | | | | | |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 50 | | | | | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | | | | | °C |

Notes

(1) Free air, mounted on recommended copper pad area

(2) Mounted on 14 mm x 14 mm copper pad areas



| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | |
|--|--|-------------------------|-------------------------------|------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Maximum instantaneous forward voltage | I _F = 1.0 A | T _A = 25 °C | V _F ⁽¹⁾ | 0.92 | - | V |
| | I _F = 2.0 A | | | 0.99 | 1.15 | |
| | I _F = 1.0 A | T _A = 125 °C | | 0.81 | - | |
| | I _F = 2.0 A | | | 0.90 | 0.98 | |
| Maximum DC reverse current at rated DC blocking voltage | Rated V _R | T _A = 25 °C | I _R ⁽²⁾ | - | 5.0 | μA |
| | | T _A = 125 °C | | - | 350 | |
| Typical reverse recovery time | I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | | t _{rr} | 2.1 | - | μs |
| Typical junction capacitance | 4.0 V, 1 MHz | | C _J | 11 | - | pF |

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | |
|---|---------------------------------|-------|-------|-------|-------|-------|------|
| PARAMETER | SYMBOL | CSA2D | CSA2G | CSA2J | CSA2K | CSA2M | UNIT |
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 102 | | | | | °C/W |
| | R _{θJM} ⁽²⁾ | 14 | | | | | |

Notes

- (1) Free air, mounted on recommended copper pad area; thermal resistance R_{θJA} - junction-to-ambient
- (2) Mounted on 14 mm x 14 mm copper pad areas, R_{θJM} - junction-to-mount at the terminal

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| CSA2J-E3/I | 0.064 | I | 7500 | 13" diameter plastic tape and reel |

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

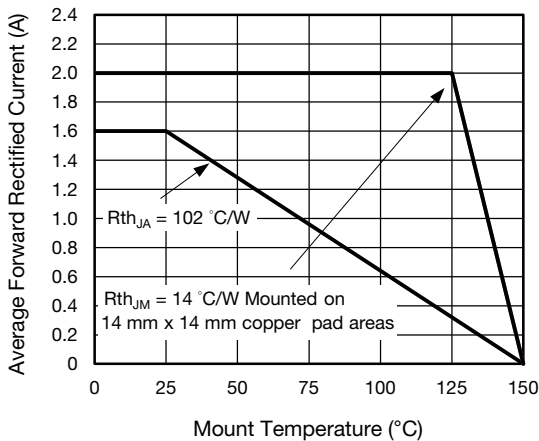


Fig. 1 - Maximum Forward Current Derating Curve

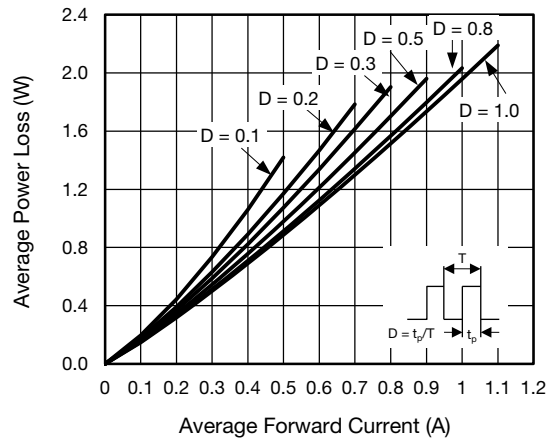


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

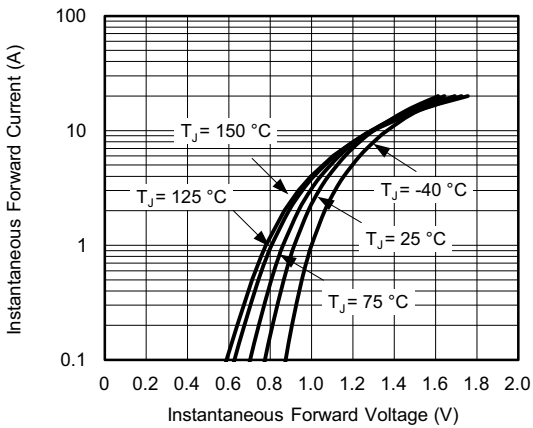


Fig. 3 - Typical Instantaneous Forward Characteristics

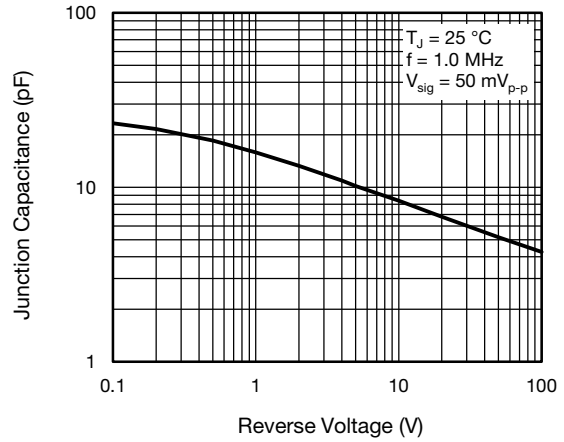


Fig. 5 - Typical Junction Capacitance

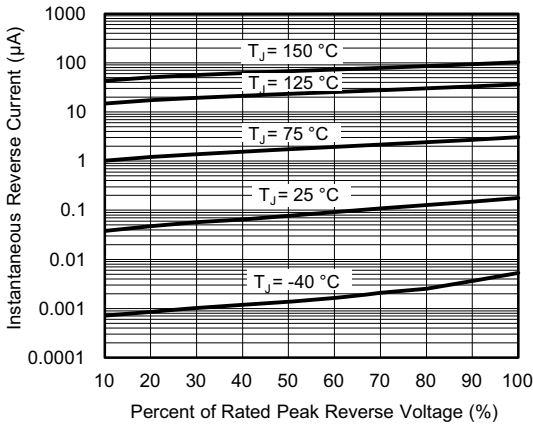


Fig. 4 - Typical Reverse Leakage Characteristics

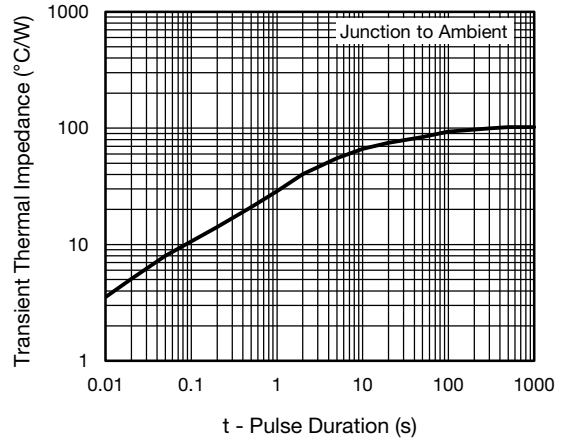
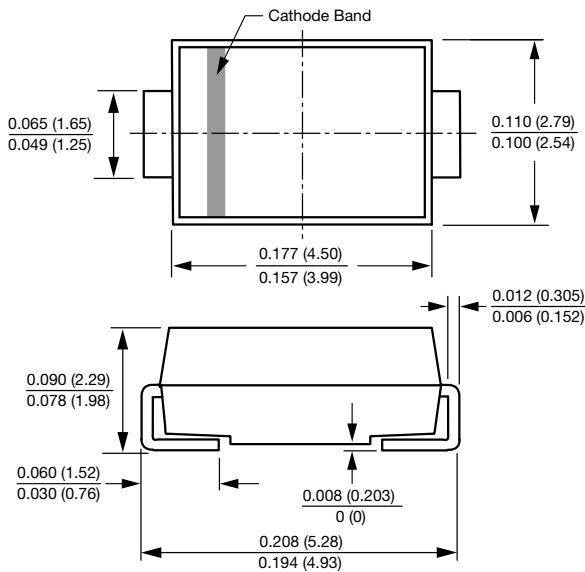


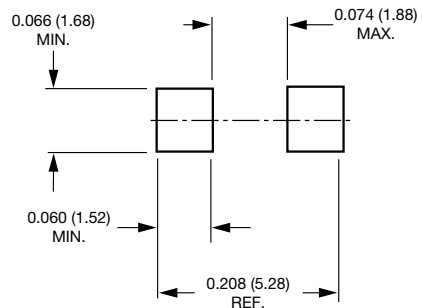
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



Mounting Pad Layout





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