

High-Current Density Surface Mount Schottky Rectifier


DO-214AC (SMA)
FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 30 V, 40 V |
| I_{FSM} | 75 A |
| V_F | 0.38 V, 0.42 V |
| $T_J \text{ max.}$ | 150 °C |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | |
|--|-------------|---------------|-------|------------|
| PARAMETER | SYMBOL | SSA33L | SSA34 | UNIT |
| Device marking code | | 33L | S34 | V |
| Maximum repetitive peak reverse voltage | V_{RRM} | 30 | 40 | V |
| Maximum RMS voltage | V_{RMS} | 21 | 28 | V |
| Maximum DC blocking voltage | V_{DC} | 30 | 40 | V |
| Maximum average forward rectified current at T_L (fig. 1) | $I_{F(AV)}$ | 3.0 | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 75 | | A |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | V/ μ s |
| Operating junction temperature range | T_J | - 65 to + 150 | | °C |
| Storage temperature range | T_{STG} | - 65 to + 150 | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | |
|--|-----------------|-----------------------------------|--------|--------|------|-------|------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | SSA33L | | SSA34 | | UNIT |
| | | | | TYP. | MAX. | TYP. | MAX. | |
| Maximum instantaneous forward voltage ⁽¹⁾ | 3.0 A | $T_J = 25\text{ }^\circ\text{C}$ | V_F | 0.43 | 0.45 | 0.46 | 0.49 | V |
| | | $T_J = 125\text{ }^\circ\text{C}$ | | 0.34 | 0.38 | 0.38 | 0.42 | |
| Maximum reverse current at rated V_R ⁽²⁾ | | $T_J = 25\text{ }^\circ\text{C}$ | I_R | - | 0.5 | - | 0.2 | mA |
| | | $T_J = 125\text{ }^\circ\text{C}$ | | 20 | 35 | 17 | 30 | |

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 | SSA33L | SSA34 | UNIT |
| Typical thermal resistance ⁽¹⁾ | $R_{\theta JA}$ | 110 | | $^\circ\text{C/W}$ |
| | $R_{\theta JL}$ | 28 | | |

Note

- (1) Aluminum substrate mounted

| ORDERING INFORMATION (Example) | | | | |
|---------------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SSA33L-E3/61T | 0.064 | 61T | 1800 | 7" diameter plastic tape and reel |
| SSA33L-E3/5AT | 0.064 | 5AT | 7500 | 13" diameter plastic tape and reel |
| SSA33LHE3/61T ⁽¹⁾ | 0.064 | 61T | 1800 | 7" diameter plastic tape and reel |
| SSA33LHE3/5AT ⁽¹⁾ | 0.064 | 5AT | 7500 | 13" diameter plastic tape and reel |

Note

- (1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

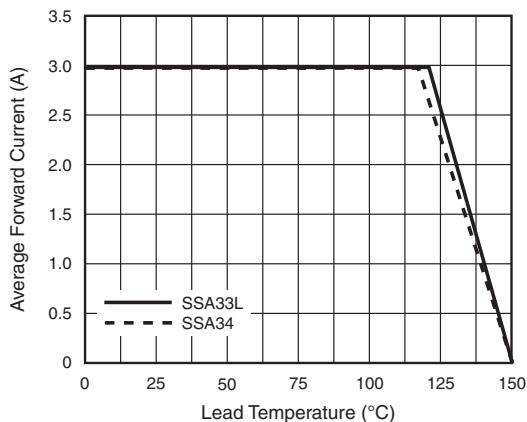


Fig. 1 - Forward Current Derating Curve

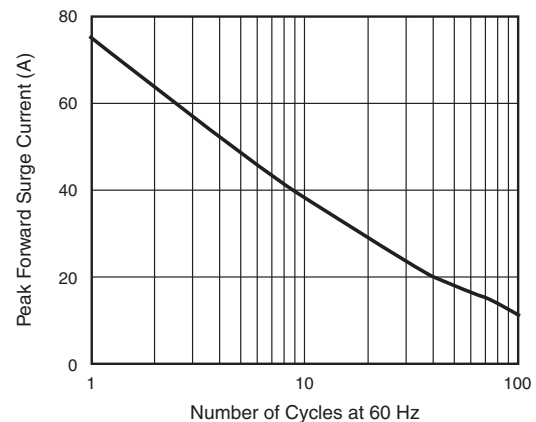


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

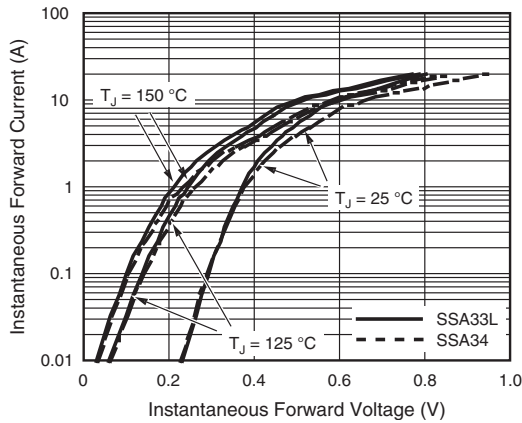


Fig. 3 - Typical Instantaneous Forward Characteristics

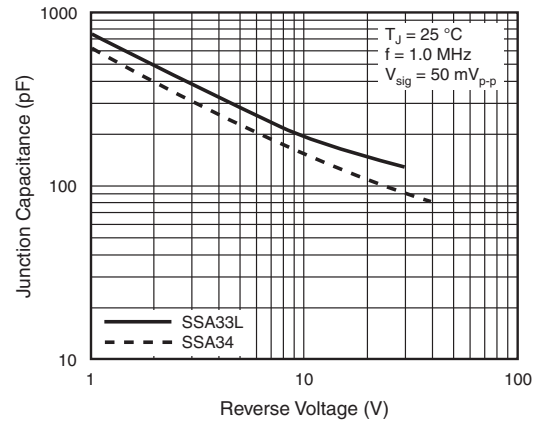


Fig. 5 - Typical Junction Capacitance

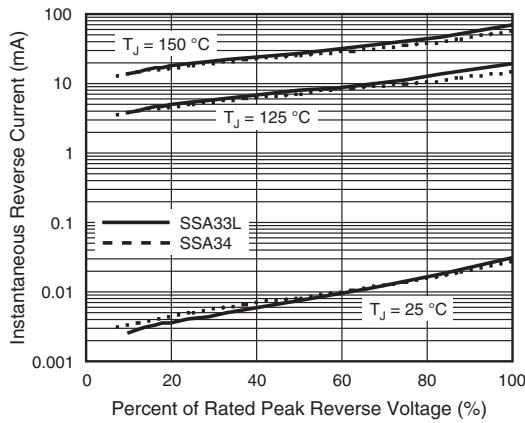
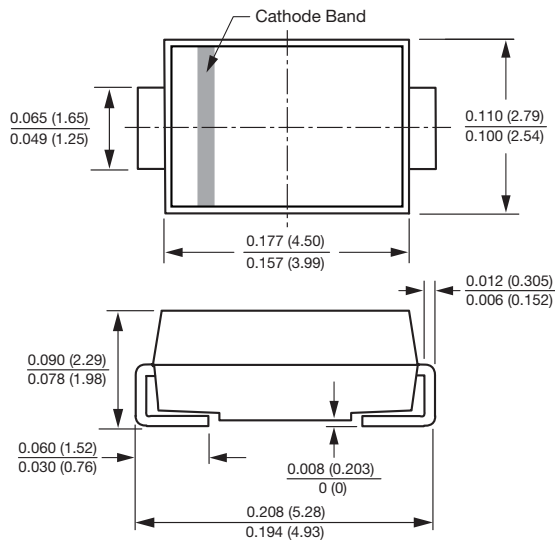
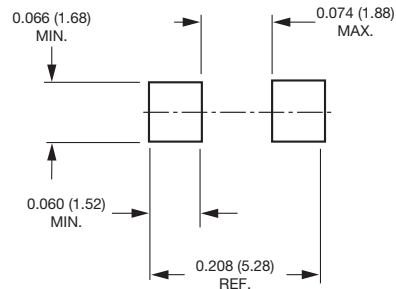


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)
DO-214AC (SMA)



Mounting Pad Layout





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