# 2A, 40V - 200V Schottky Barrier Surface Mount Rectifier

## FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

## APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

## MECHANICAL DATA

- Case: Thin SMA
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.028g (approximately)

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_F$ | 2 | A |
| $V_{RRM}$ | 40 - 200 | V |
| $I_{FSM}$ | 50 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | Thin SMA | |
| Configuration | Single die | |

Pb-Free RoHS COMPLIANT HALOGEN FREE

**Thin SMA**


| ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C unless otherwise noted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | | **SYMBOL** | **SS24 ALH** | **SS26 ALH** | **SS210 ALH** | **SS215 ALH** | **SS220 ALH** | **UNIT** |
| Marking code on the device | | | 24ALH | 26ALH | 210ALH | 215ALH | 220ALH | |
| Repetitive peak reverse voltage | | $V_{RRM}$ | 40 | 60 | 100 | 150 | 200 | V |
| Reverse voltage, total rms value | | $V_{R(RMS)}$ | 28 | 42 | 70 | 105 | 140 | V |
| Forward current | | $I_F$ | 2 | | | | | A |
| Surge peak forward current, single half sine-wave superimposed on rated load | t = 8.3ms | $I_{FSM}$ | 50 | | | | | A |
| | t = 1.0ms | | 145 | | | | | A |
| Junction temperature | | $T_J$ | -55 to +150 | | | | | °C |
| Storage temperature | | $T_{STG}$ | -55 to +150 | | | | | °C |

## THERMAL PERFORMANCE

| PARAMETER | SYMBOL | TYP | UNIT |
|---|---|---|---|
| Junction-to-lead thermal resistance | $R_{\Theta JL}$ | 21 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\Theta JA}$ | 78 | °C/W |
| Junction-to-case thermal resistance | $R_{\Theta JC}$ | 20 | °C/W |

**Thermal Performance Note:** Units mounted on PCB (5mm x 5mm Cu pad test board)

## ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Forward voltage[1] | SS24ALH | $I_F$ = 1A, $T_J$ = 25°C | $V_F$ | 0.40 | - | V |
| | | $I_F$ = 2A, $T_J$ = 25°C | | 0.46 | 0.57 | V |
| | | $I_F$ = 1A, $T_J$ = 125°C | | 0.34 | - | V |
| | | $I_F$ = 2A, $T_J$ = 125°C | | 0.40 | 0.56 | V |
| | SS26ALH | $I_F$ = 1A, $T_J$ = 25°C | | 0.50 | - | V |
| | | $I_F$ = 2A, $T_J$ = 25°C | | 0.60 | 0.70 | V |
| | | $I_F$ = 1A, $T_J$ = 125°C | | 0.44 | - | V |
| | | $I_F$ = 2A, $T_J$ = 125°C | | 0.54 | 0.62 | V |
| | SS210ALH | $I_F$ = 1A, $T_J$ = 25°C | | 0.66 | - | V |
| | | $I_F$ = 2A, $T_J$ = 25°C | | 0.76 | 0.85 | V |
| | | $I_F$ = 1A, $T_J$ = 125°C | | 0.57 | - | V |
| | | $I_F$ = 2A, $T_J$ = 125°C | | 0.62 | 0.76 | V |
| | SS215ALH | $I_F$ = 1A, $T_J$ = 25°C | | 0.75 | - | V |
| | | $I_F$ = 2A, $T_J$ = 25°C | | 0.81 | 0.95 | V |
| | | $I_F$ = 1A, $T_J$ = 125°C | | 0.61 | - | V |
| | | $I_F$ = 2A, $T_J$ = 125°C | | 0.67 | 0.80 | V |
| | SS220ALH | $I_F$ = 1A, $T_J$ = 25°C | | 0.78 | - | V |
| | | $I_F$ = 2A, $T_J$ = 25°C | | 0.84 | 0.95 | V |
| | | $I_F$ = 1A, $T_J$ = 125°C | | 0.63 | - | V |
| | | $I_F$ = 2A, $T_J$ = 125°C | | 0.71 | 0.89 | V |
| Reverse current @ rated $V_R$[2] | SS24ALH SS26ALH | $T_J$ = 25°C | $I_R$ | - | 200 | μA |
| | | $T_J$ = 125°C | | - | 40 | mA |
| | SS210ALH SS215ALH SS220ALH | $T_J$ = 25°C | | - | 10 | μA |
| | | $T_J$ = 125°C | | - | 5 | mA |
| Junction capacitance | SS24ALH | 1MHz, $V_R$ = 4.0V | $C_J$ | 124 | - | pF |
| | SS26ALH | | | 95 | - | pF |
| | SS210ALH | | | 61 | - | pF |
| | SS215ALH | | | 48 | - | pF |
| | SS220ALH | | | 39 | - | pF |

**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

| ORDERING INFORMATION | | |
|---|---|---|
| **ORDERING CODE[1]** | **PACKAGE** | **PACKING** |
| SS2xALH | Thin SMA | 14,000 / Tape & Reel |

**Notes:**

1. "x" defines voltage from 40V(SS24ALH) to 200V(SS220ALH)

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Forward Current Derating Curve**

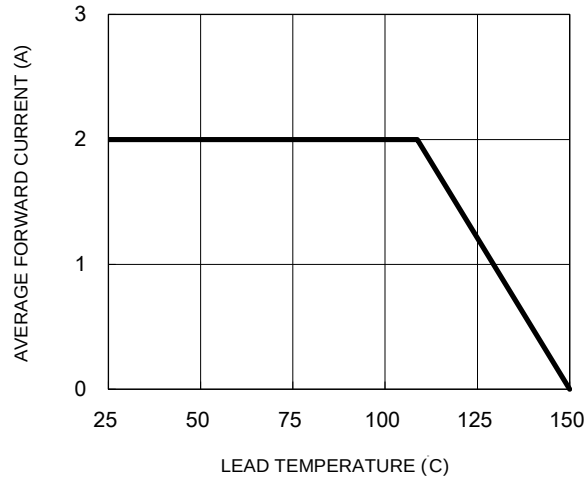



**Fig.2 Typical Junction Capacitance**

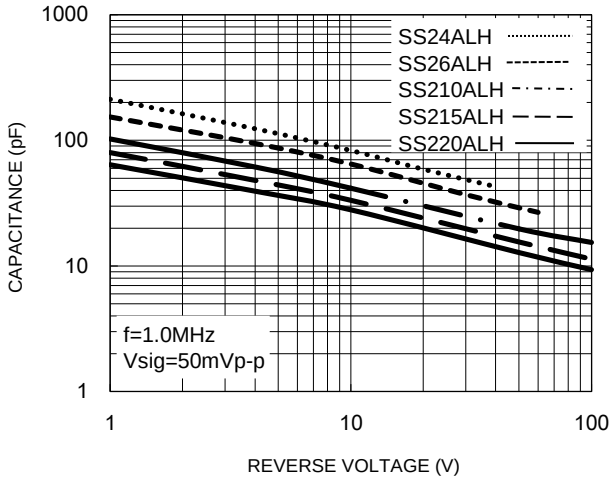



**Fig.3 Typical Reverse Characteristics**

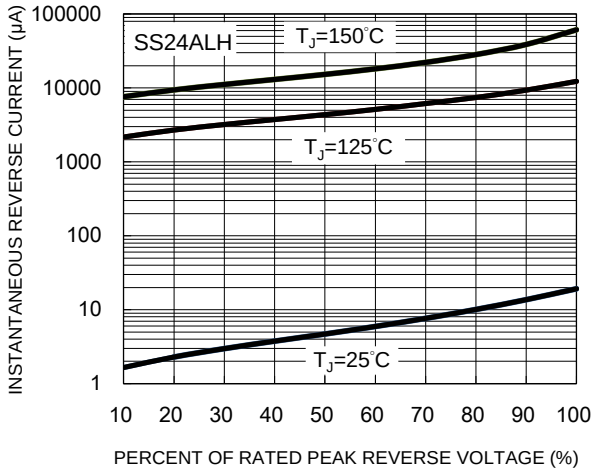



**Fig.4 Typical Forward Characteristics**

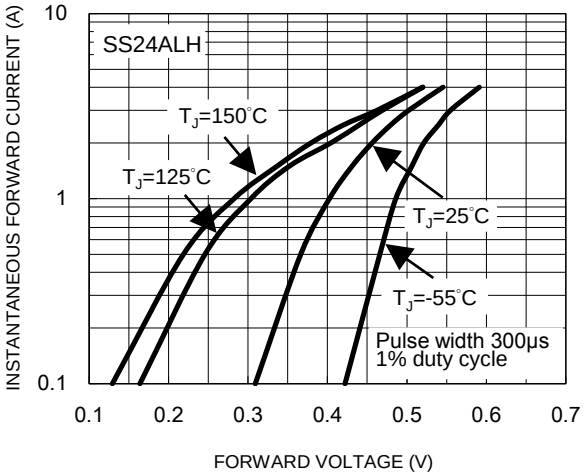



**Fig.5 Typical Reverse Characteristics**

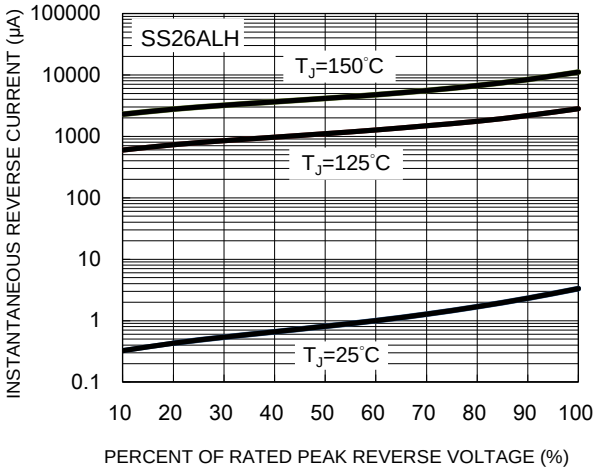
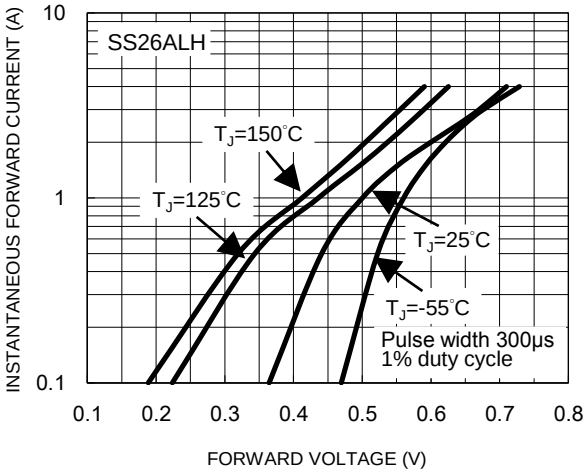



**Fig.6 Typical Forward Characteristics**



## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.7 Typical Reverse Characteristics**

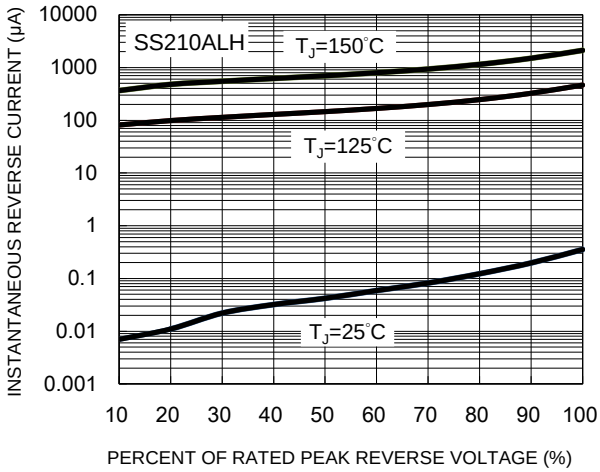



**Fig.8 Typical Forward Characteristics**

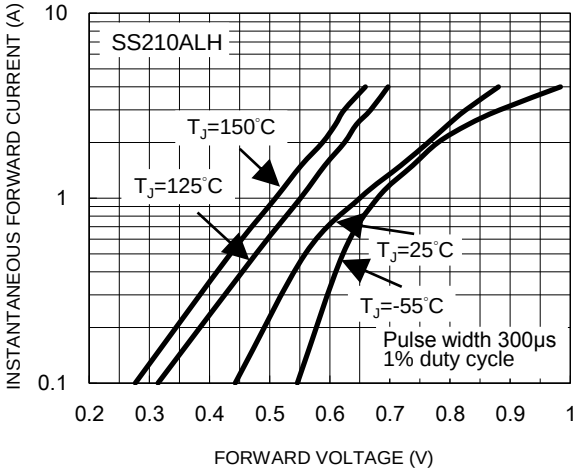



**Fig.9 Typical Reverse Characteristics**

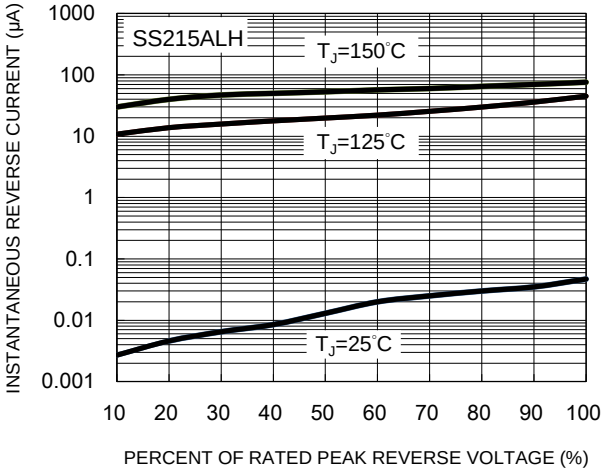



**Fig.10 Typical Forward Characteristics**

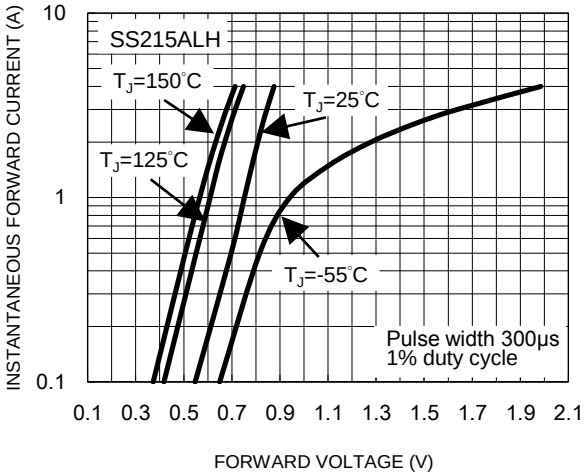



**Fig.11 Typical Reverse Characteristics**

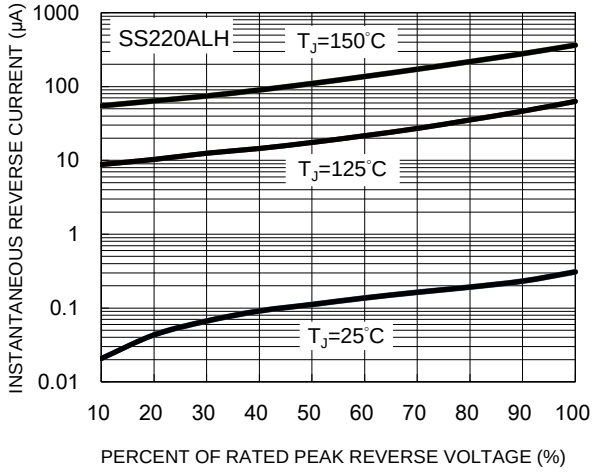
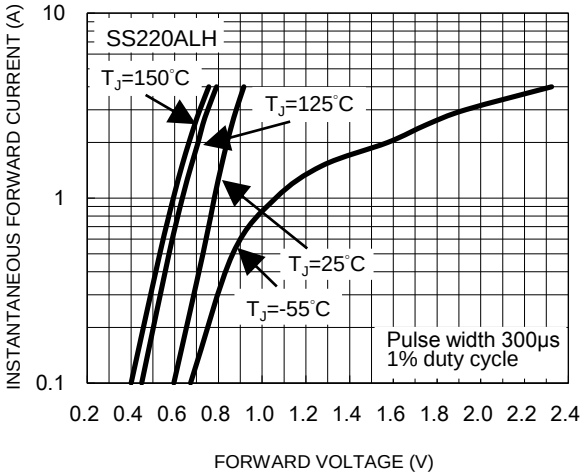


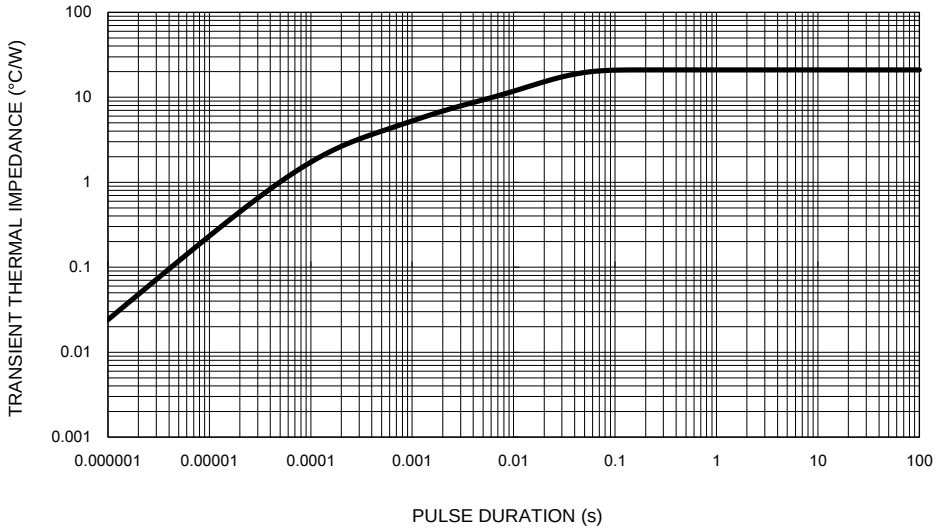

**Fig.12 Typical Forward Characteristics**



## CHARACTERISTICS CURVES

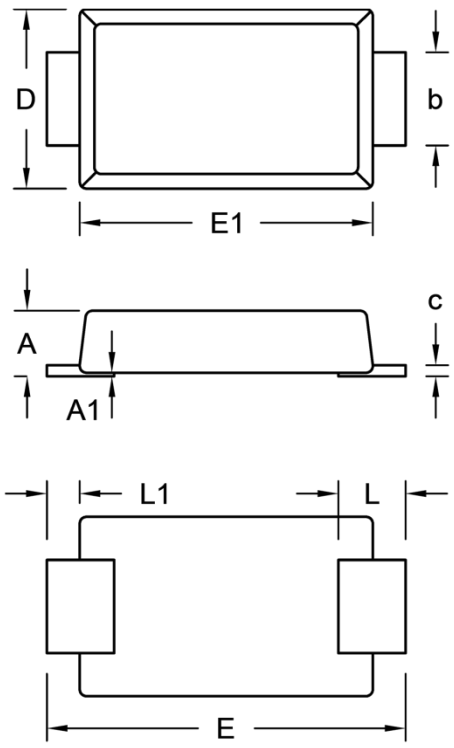
($T_A$ = 25°C unless otherwise noted)

**Fig.13 Typical Transient Thermal Impedance**



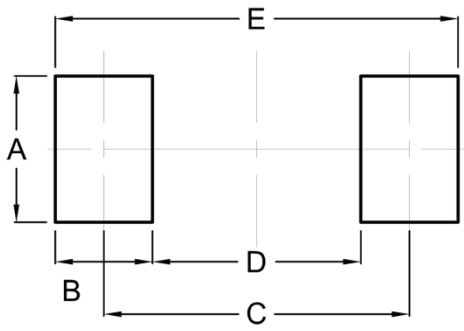
## PACKAGE OUTLINE DIMENSIONS

**Thin SMA**




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.90 | 1.00 | 0.035 | 0.039 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| b | 1.25 | 1.45 | 0.049 | 0.057 |
| c | 0.10 | 0.22 | 0.004 | 0.009 |
| D | 2.50 | 2.70 | 0.098 | 0.106 |
| E | 5.05 | 5.35 | 0.199 | 0.211 |
| E1 | 4.15 | 4.35 | 0.163 | 0.171 |
| L | 0.75 | 1.20 | 0.030 | 0.047 |
| L1 | 0.30 | 0.60 | 0.012 | 0.024 |

## SUGGESTED PAD LAYOUT




| Symbol | Unit (mm) | Unit (inch) |
|---|---|---|
| A | 2.10 | 0.083 |
| B | 1.40 | 0.055 |
| C | 4.40 | 0.173 |
| D | 3.00 | 0.118 |
| E | 5.80 | 0.228 |

## MARKING DIAGRAM


P/N = Marking Code
YW = Date Code
F = Factory Code

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