

2A, 20V - 40V Surface Mount Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified
- Very low profile - typical height of 0.68mm
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

| KEY PARAMETERS | | |
|----------------|-----------|------|
| PARAMETER | VALUE | UNIT |
| $I_{F(AV)}$ | 2 | A |
| V_{RRM} | 20 - 40 | V |
| I_{FSM} | 25 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | Micro SMA | |

APPLICATIONS

- Converter
- Free wheeling
- LED lighting
- Adapters



MECHANICAL DATA

- Case: Micro 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: As marked
- Weight: 0.006 g (approximately)



Micro SMA

| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|-------------|--------------|-------|-------|------|
| PARAMETER | SYMBOL | SS22M | SS23M | SS24M | UNIT |
| Marking code on the device | | D | E | F | |
| Repetitive peak reverse voltage | V_{RRM} | 20 | 30 | 40 | V |
| Forward current | $I_{F(AV)}$ | 2 | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 25 | | | 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 | $R_{\theta JL}$ | 15 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 105 | °C/W |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 20 | °C/W |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|--|---------------|-------------|-------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP. | MAX. | UNIT |
| Forward voltage per diode ⁽¹⁾ | $I_F = 2\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 0.60 | V |
| | $I_F = 2\text{A}, T_J = 125^\circ\text{C}$ | | - | 0.55 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 150 | μA |
| | $T_J = 125^\circ\text{C}$ | | - | 15 | mA |
| Junction capacitance | 1 MHz, $V_R = 4.0\text{V}$ | C_J | 35 | - | pF |

Notes:

1. Pulse test with $PW = 0.3\text{ ms}$
2. Pulse test with $PW = 30\text{ ms}$

| ORDERING INFORMATION | | |
|-----------------------------|----------------|------------------------|
| ORDERING CODE | PACKAGE | PACKING |
| SS22MHRSG | Micro SMA | 3000 / 7" Plastic reel |
| SS23MHRSG | Micro SMA | 3000 / 7" Plastic reel |
| SS24MHRSG | Micro SMA | 3000 / 7" Plastic reel |
| SS22M RSG | Micro SMA | 3000 / 7" Plastic reel |
| SS23M RSG | Micro SMA | 3000 / 7" Plastic reel |
| SS24M RSG | Micro SMA | 3000 / 7" Plastic reel |

Note: "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

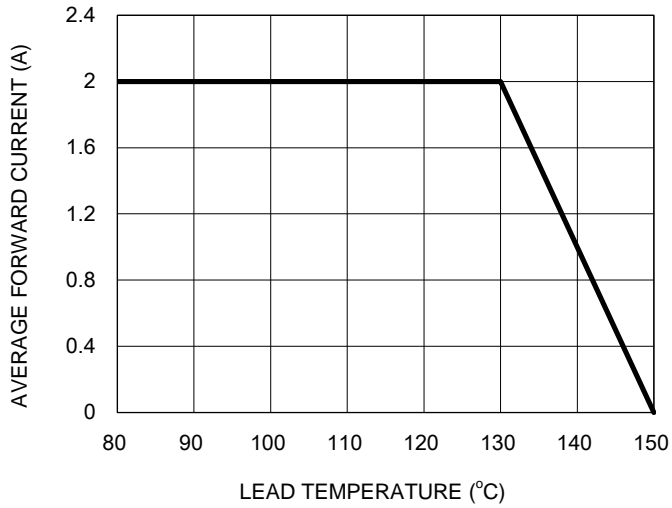


Fig.2 Typical Junction Capacitance

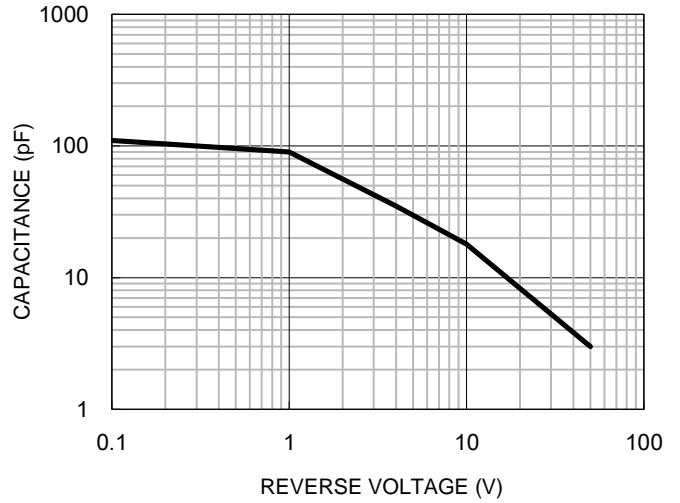


Fig.3 Typical Reverse Characteristics

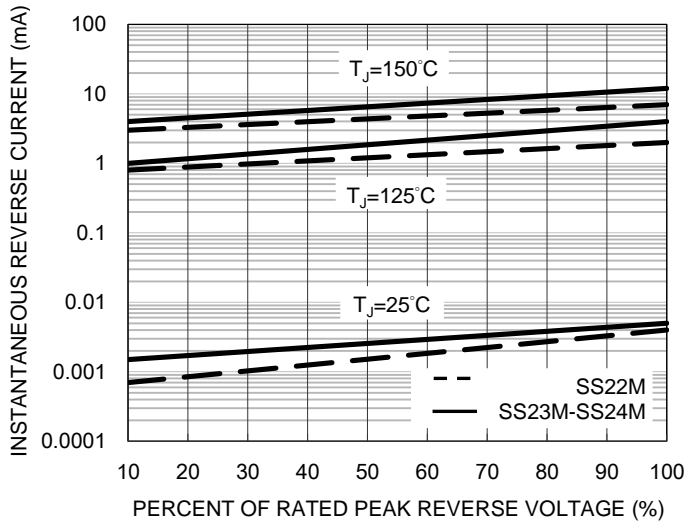
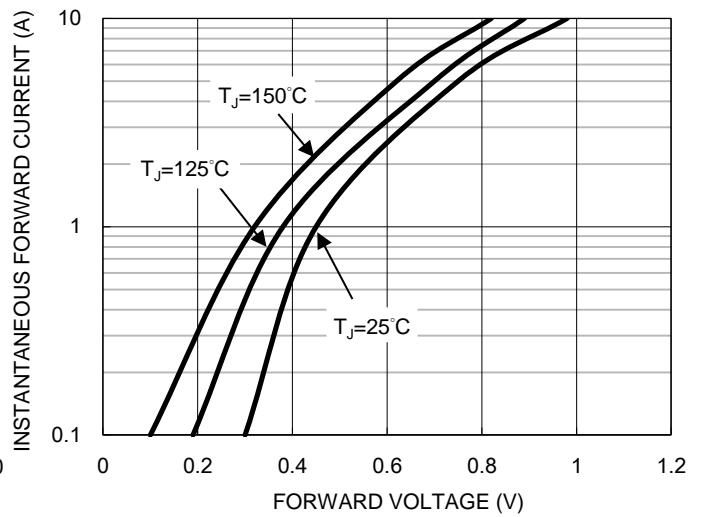


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.7 Maximum Forward Surge Current

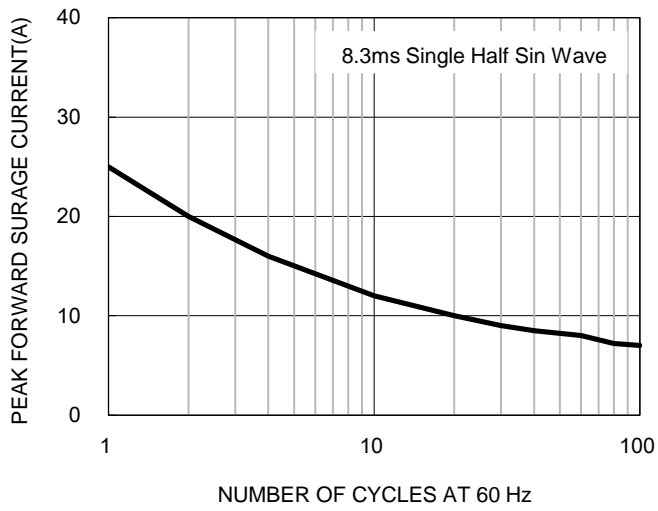
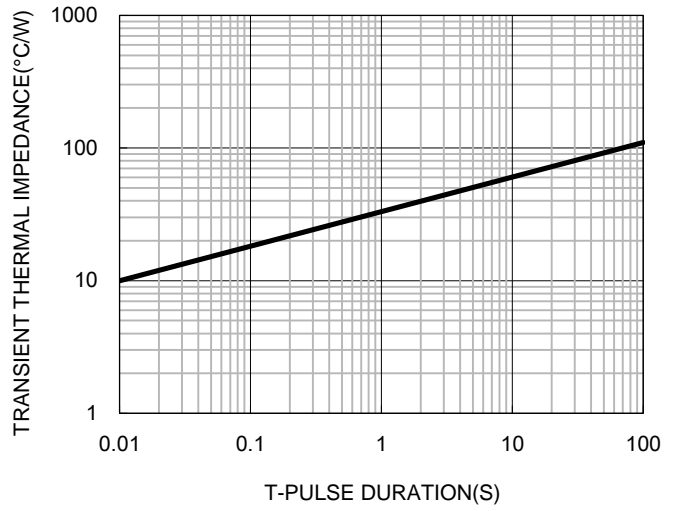
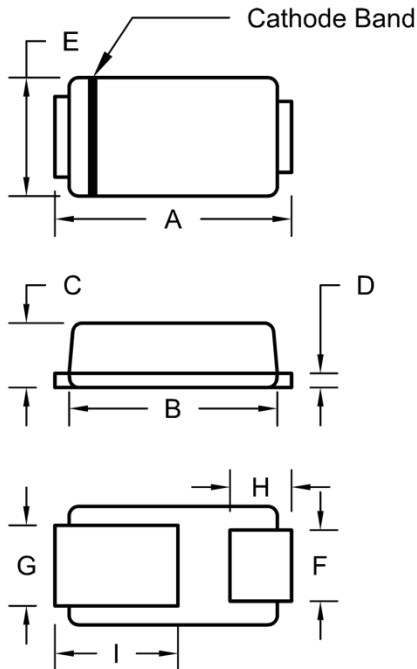


Fig.8 Typical Transient Thermal Impedance



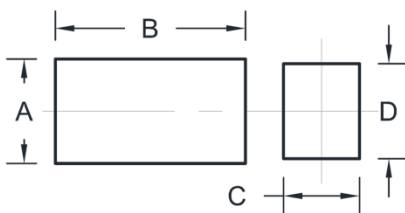
PACKAGE OUTLINE DIMENSIONS

Micro SMA



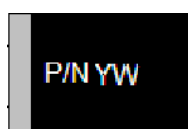
| DIM | Unit (mm) | | Unit (inch) | |
|-----|-----------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.30 | 2.70 | 0.091 | 0.106 |
| B | 2.10 | 2.30 | 0.083 | 0.091 |
| C | 0.63 | 0.73 | 0.025 | 0.029 |
| D | 0.10 | 0.20 | 0.004 | 0.008 |
| E | 1.15 | 1.35 | 0.045 | 0.053 |
| F | 0.65 | 0.85 | 0.026 | 0.034 |
| G | 0.75 | 0.95 | 0.030 | 0.037 |
| H | 0.55 | 0.75 | 0.022 | 0.030 |
| I | 1.10 | 1.50 | 0.043 | 0.059 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.10 | 0.043 |
| B | 2.00 | 0.079 |
| C | 0.80 | 0.031 |
| D | 1.00 | 0.039 |

MARKING DIAGRAM



P/N = Marking Code
YW = Date Code

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