

1A, 400V - 600V Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Ideal for automated placement
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

| KEY PARAMETERS | | |
|----------------|-----------|------|
| PARAMETER | VALUE | UNIT |
| $I_{F(AV)}$ | 1 | A |
| V_{RRM} | 400 - 600 | V |
| I_{FSM} | 20 | A |
| $T_{J\ MAX}$ | 175 | °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 | S1GM | S1JM | UNIT |
| Marking code on the device | | A5 | A7 | |
| Repetitive peak reverse voltage | V_{RRM} | 400 | 600 | V |
| Forward current | $I_{F(AV)}$ | 1 | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 20 | | A |
| Junction temperature | T_J | - 55 to +175 | | °C |
| Storage temperature | T_{STG} | - 55 to +175 | | °C |

THERMAL PERFORMANCE

| PARAMETER | SYMBOL | TYP | UNIT |
|--|-----------------|-----|------|
| Junction-to-lead Thermal Resistance | $R_{\theta JL}$ | 30 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 110 | °C/W |

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

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|--|---|----------|-----|------|---------------|
| Forward voltage per diode ⁽¹⁾ | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 1.10 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 1 | μA |
| | $T_J = 125^\circ\text{C}$ | | - | 50 | μA |
| Junction capacitance | 1 MHz, $V_R = 4.0\text{V}$ | C_J | 5 | - | pF |
| Reverse recovery time | $I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$ | t_{rr} | 780 | - | ns |

Notes:

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

ORDERING INFORMATION

| ORDERING CODE ⁽¹⁾ | PACKAGE | PACKING |
|------------------------------|-----------|------------------------|
| S1GMHRSG | Micro SMA | 3000 / 7" Plastic reel |
| S1JMHRSG | Micro SMA | 3000 / 7" Plastic reel |
| S1GM RSG | Micro SMA | 3000 / 7" Plastic reel |
| S1JM RSG | Micro SMA | 3000 / 7" Plastic reel |

Note :

1. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

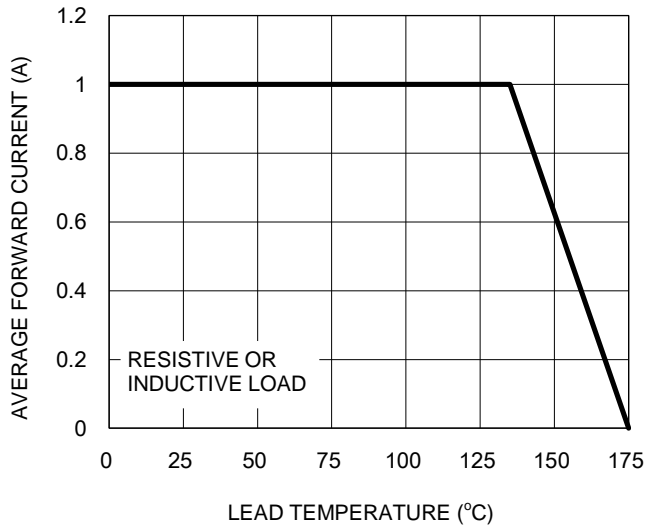


Fig.2 Typical Junction Capacitance

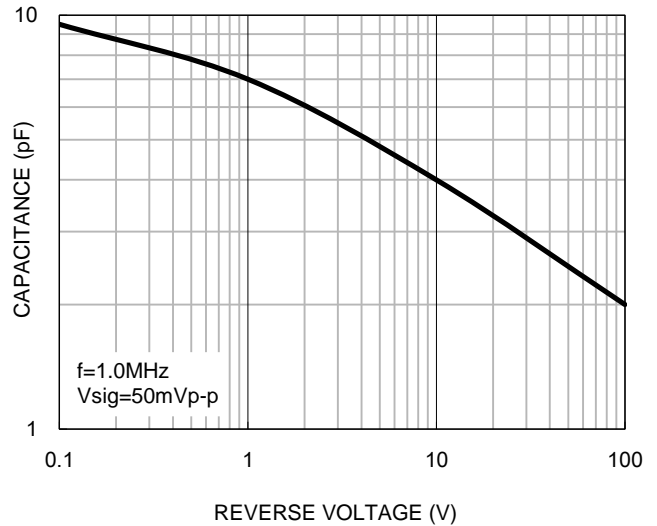


Fig.3 Typical Reverse Characteristics

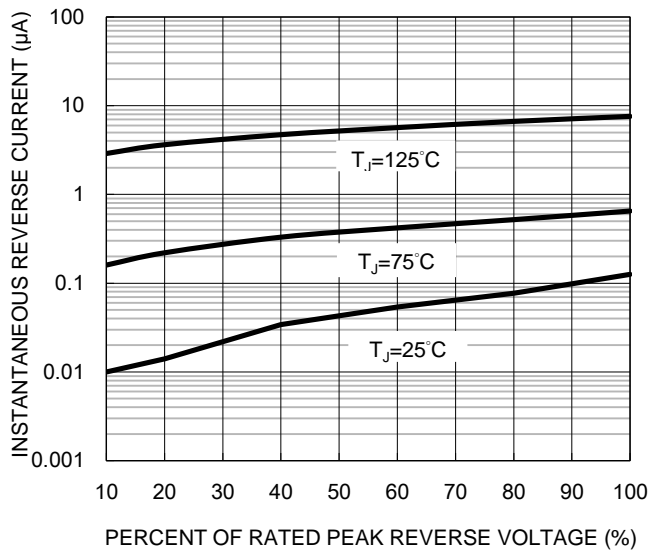
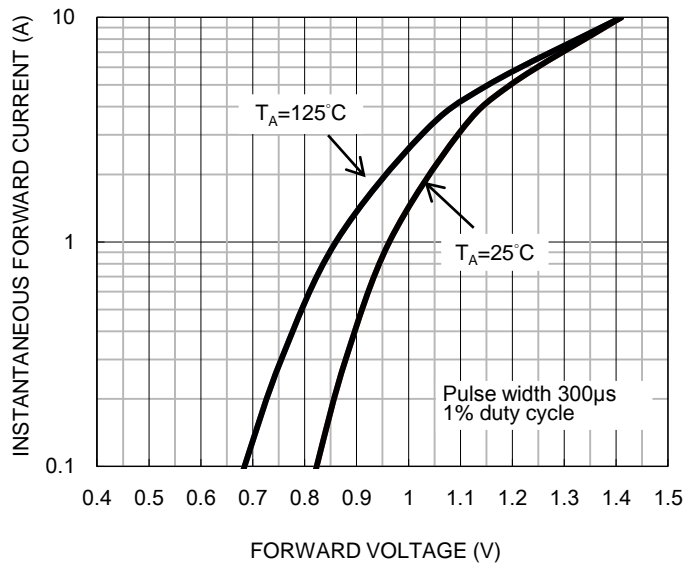


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Maximum Non-repetitive Forward Surge Current

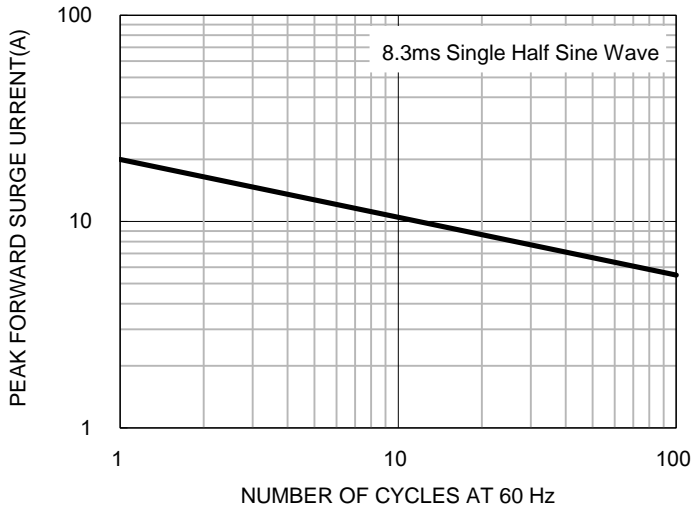
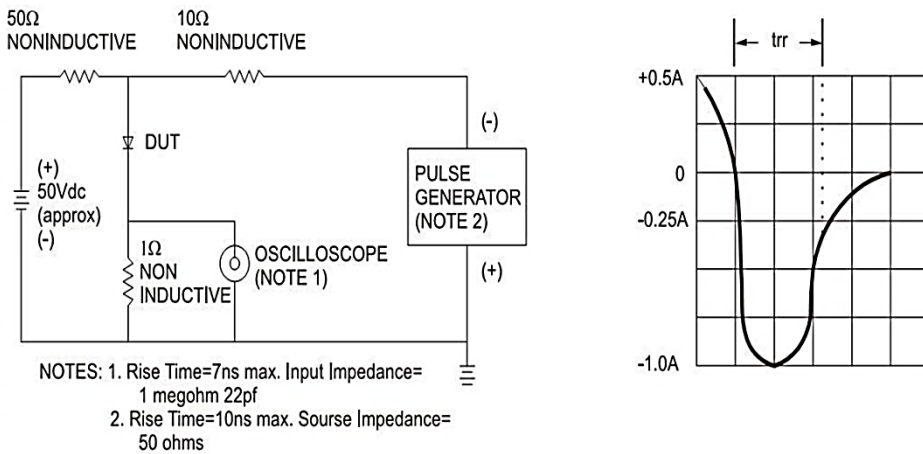
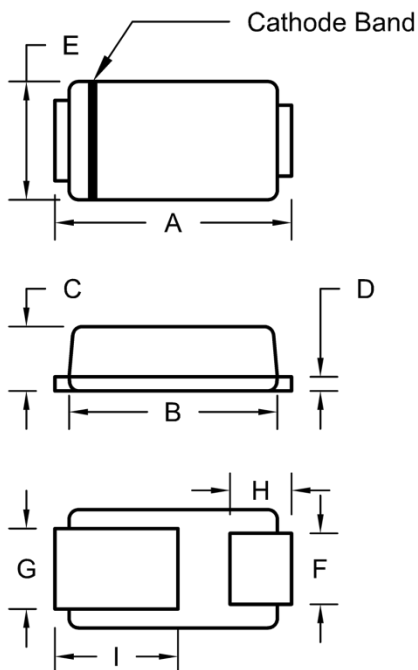


Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



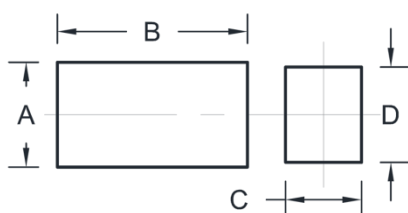
PACKAGE OUTLINE DIMENSIONS

Micro SMA



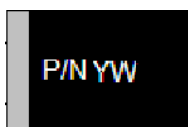
| DIM | Unit (mm) | | Unit (inch) | |
|-----|-----------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.30 | 2.70 | 0.091 | 0.106 |
| B | 2.10 | 2.30 | 0.083 | 0.091 |
| C | 0.63 | 0.73 | 0.025 | 0.029 |
| D | 0.10 | 0.20 | 0.004 | 0.008 |
| E | 1.15 | 1.35 | 0.045 | 0.053 |
| 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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Rectifiers](#) category:

Click to view products by [Taiwan Semiconductor](#) manufacturer:

Other Similar products are found below :

[70HFR40](#) [RL252-TP](#) [150KR30A](#) [1N5397](#) [NTE5841](#) [NTE6038](#) [SCF5000](#) [1N4002G](#) [1N4005-TR](#) [JANS1N6640US](#) [481235F](#)
[RRE02VS6SGTR](#) [067907F](#) [MS306](#) [70HF40](#) [T85HFL60S02](#) [US2JFL-TP](#) [A1N5404G-G](#) [CRS04\(T5L,TEMQ\)](#) [ACGRA4007-HF](#)
[ACGRB207-HF](#) [CLH03\(TE16L,Q\)](#) [ACGRC307-HF](#) [ACEFC304-HF](#) [NTE6356](#) [NTE6359](#) [NTE6002](#) [NTE6023](#) [NTE6039](#) [NTE6077](#)
[85HFR60](#) [40HFR60](#) [70HF120](#) [85HFR80](#) [D126A45C](#) [SCF7500](#) [D251N08B](#) [SCHJ22.5K](#) [SM100](#) [SCPA2](#) [SCH10000](#) [SDHD5K](#) [VS-](#)
[12FL100S10](#) [ACGRA4001-HF](#) [D1821SH45T PR](#) [D1251S45T](#) [NTE5990](#) [NTE6358](#) [NTE6162](#) [NTE5850](#)