

## 3A, 1000V Low Profile Surface Mount Fast Recovery Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Fast switching for high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



SMAF



### MECHANICAL DATA

#### Case: SMAF

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.06 g (approximately)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	RS3MAF	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	1000	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	3	A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	90	A
Maximum instantaneous forward voltage (Note 1) @ 3A	V <sub>F</sub>	1.3	V
Maximum reverse current @ rated V <sub>R</sub> T <sub>J</sub> =25°C T <sub>J</sub> =125°C	I <sub>R</sub>	5	μA
		250	
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	160	ns
Typical junction capacitance (Note 3)	C <sub>J</sub>	30	pF
Typical thermal resistance	R <sub>θJL</sub>	16	°C/W
	R <sub>θJA</sub>	60	
Operating junction temperature range	T <sub>J</sub>	- 55 to +150	°C
Storage temperature range	T <sub>STG</sub>	- 55 to +150	°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

Note 3: Measured at 1 MHz and applied reverse voltage of 4.0V

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
RS3MAF (Note 1)	R3	G	SMAF	3,000 / 7" Plastic reel
	R2		SMAF	10,000 / 13" Paper reel

Note 1: Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
RS3MAF R3G	RS3MAF	R3	G	Green compound

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

FIG.1 FORWARD CURRENT DERATING CURVE

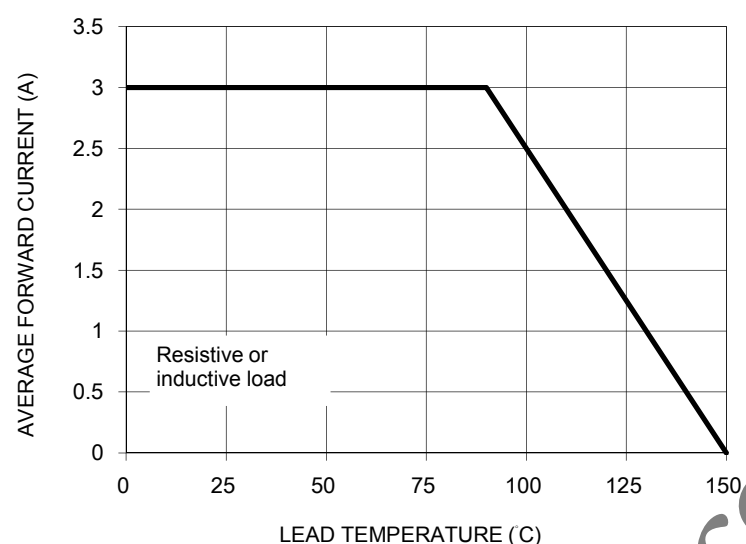


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

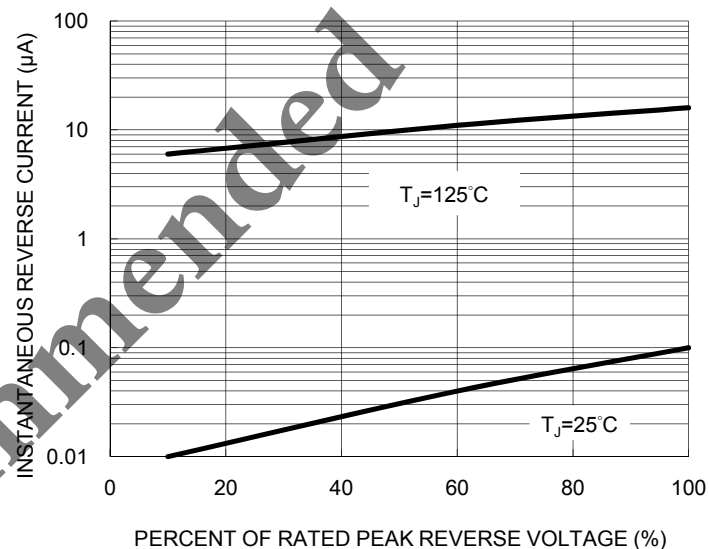


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

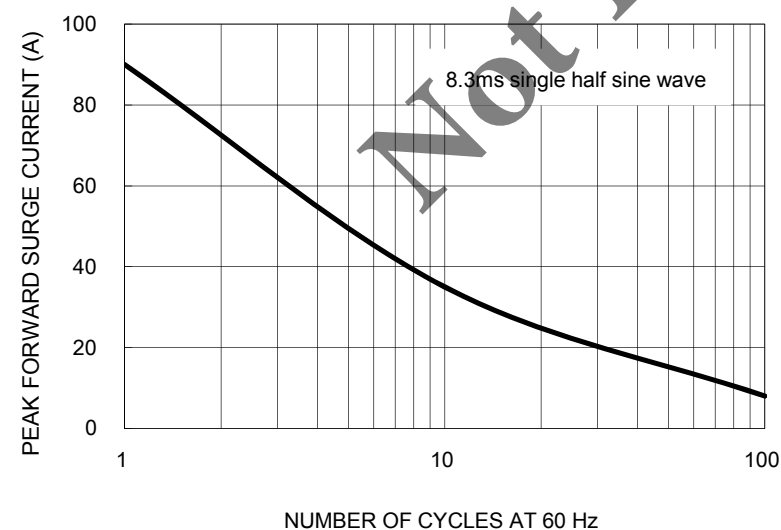


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

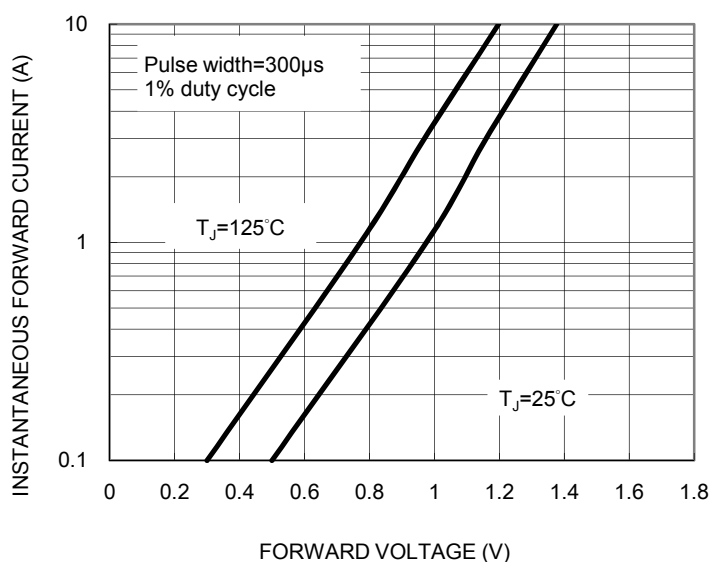


FIG. 5 TYPICAL JUNCTION CAPACITANCE

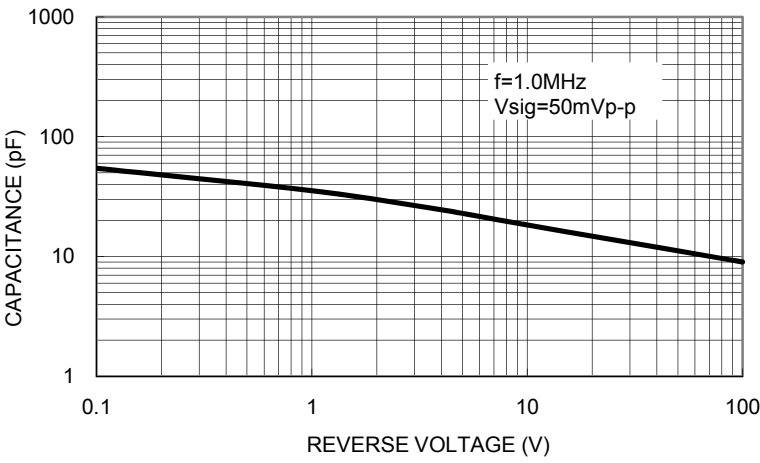
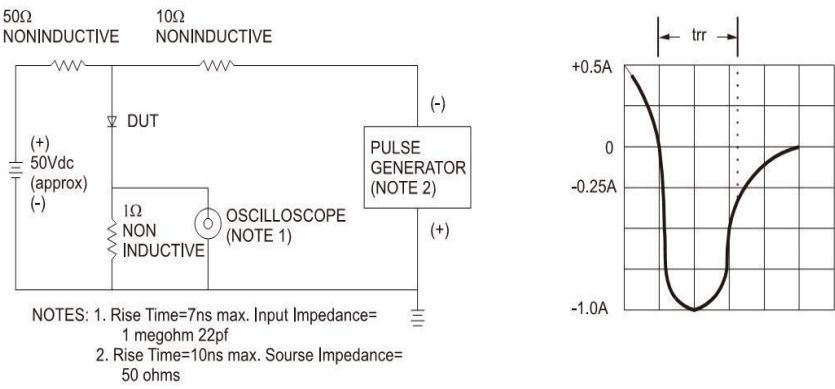
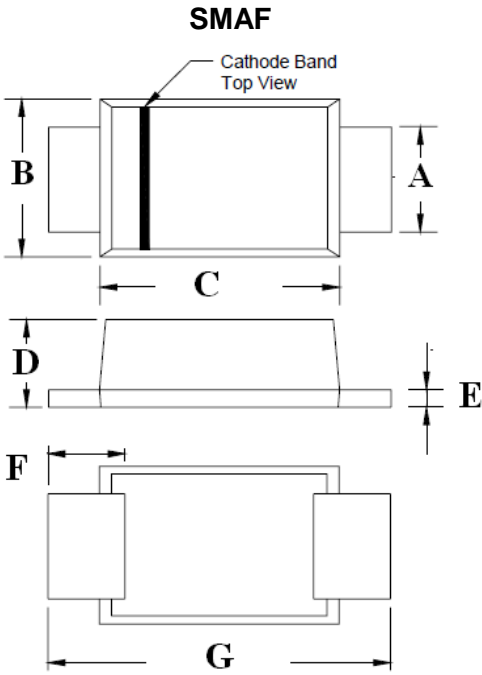


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.25	1.60	0.049	0.063
B	2.40	2.80	0.094	0.110
C	3.30	4.30	0.130	0.169
D	0.90	1.10	0.035	0.043
E	0.10	0.25	0.004	0.010
F	0.70	1.20	0.028	0.047
G	4.40	5.20	0.173	0.205

MARKING DIAGRAM



P/N = Specific Device Code  
G = Green Compound  
YW = Date Code  
F = Factory Code

**Not Recommended**

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