

## Surface Mount Fast Recovery Rectifiers

### FEATURES

- Ideal for automated placement
- Compact package size
- High surge current capability
- Low power loss, high efficiency
- 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 definition



**Micro SMA**



### MECHANICAL DATA

**Case:** Micro SMA

Molding compound, UL flammability classification rating 94V-0

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:** 6 mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)				
PARAMETER	SYMBOL	RS1JM	RS1KM	UNIT
Marking code		R7	R9	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	800	V
Maximum RMS voltage	V <sub>RMS</sub>	420	560	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	800	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	1		A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	20		A
Maximum instantaneous forward voltage (Note 1) @ 1.0A	V <sub>F</sub>	1.3		V
Maximum reverse current @ rated VR @ T <sub>J</sub> =25 °C @ T <sub>J</sub> =125 °C	I <sub>R</sub>	5 150		μA
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	250	500	ns
Typical thermal resistance	R <sub>θJL</sub> R <sub>θJA</sub>	25 95		°C/W
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: Reverse recovery test condition: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
RS1xM (Note 1, 2)	RS	G	Micro SMA	3,000 / 7" Plastic reel

Note 1: "x" defines voltage from 600V (RS1JM) to 800V (RS1KM)

Note 2: Whole series with green compound (halogen free)

EXAMPLE				
PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
RS1JM RSG	RS1JM	RS	G	Green compound

## RATINGS AND CHARACTERISTICS CURVES

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

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

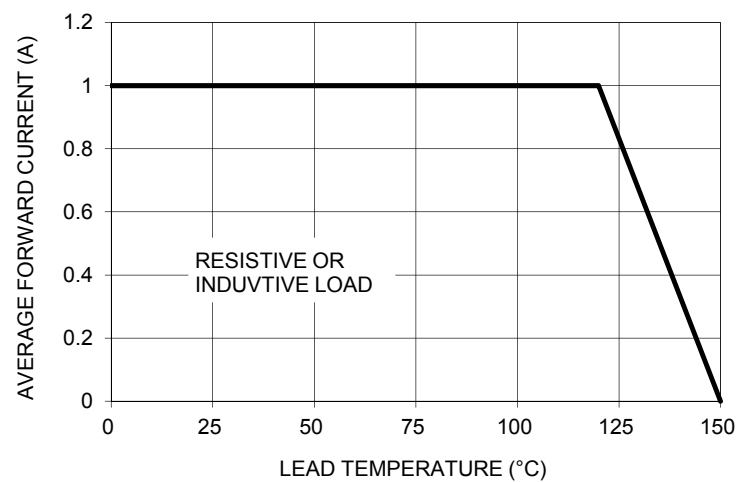


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

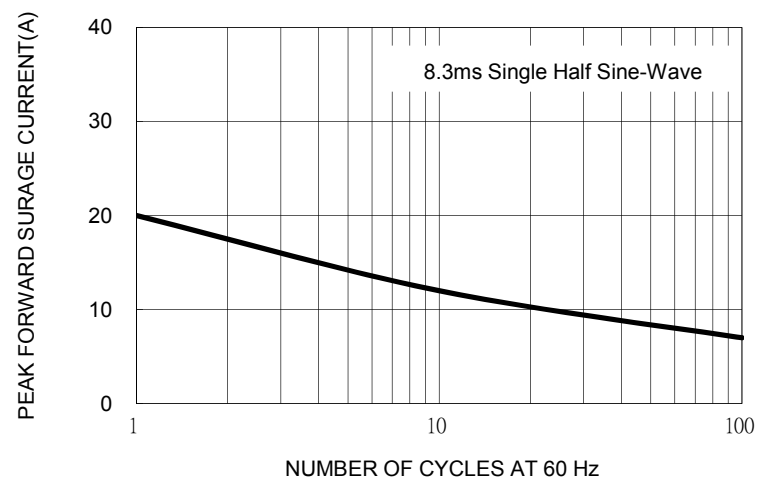


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

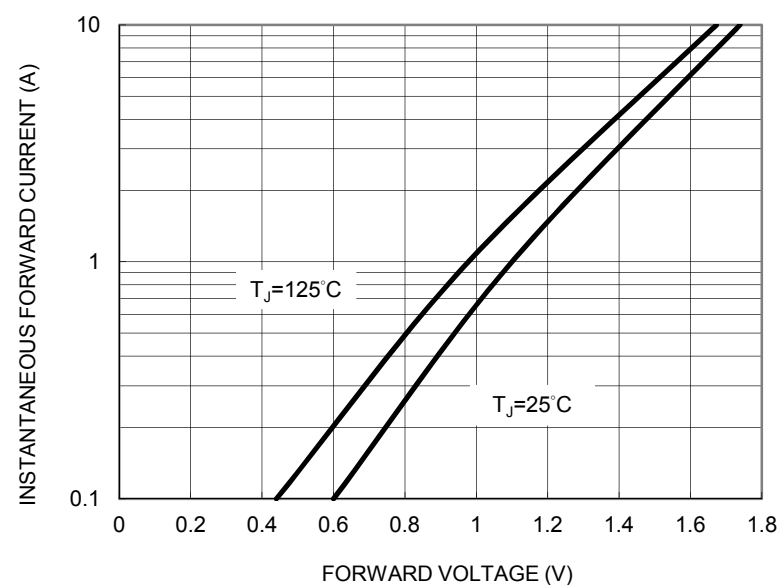


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

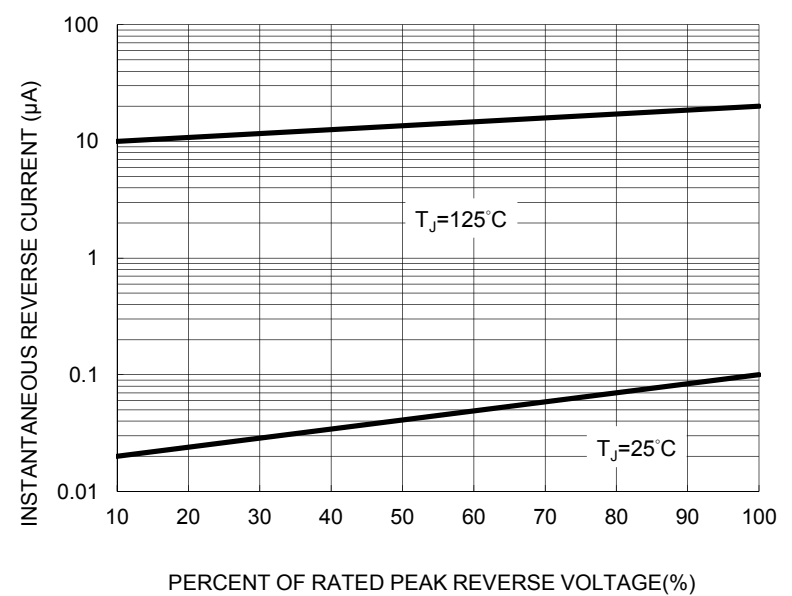


FIG. 5 TYPICAL JUNCTION CAPACITANCE

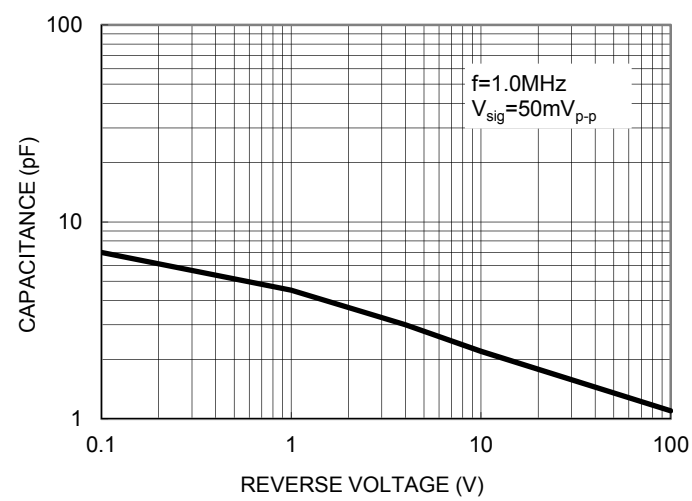
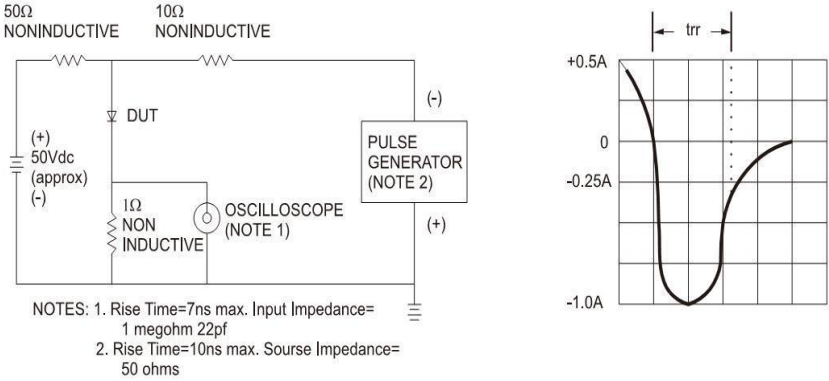
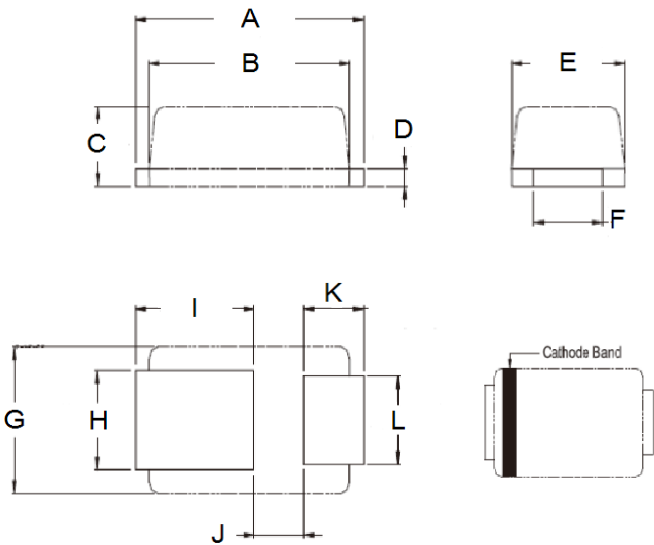


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



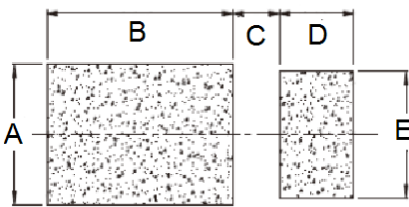
PACKAGE OUTLINE DIMENSIONS

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	1.15	1.35	0.045	0.053
H	0.75	0.95	0.030	0.037
I	1.10	1.50	0.043	0.059
J	0.55	0.75	0.022	0.030
K	0.55	0.75	0.022	0.030
L	0.65	0.85	0.026	0.034

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.1	0.043
B	2.0	0.079
C	0.5	0.020
D	0.8	0.031
E	1.0	0.039

MARKING DIAGRAM



P/N = Marking code  
YW = Date Code

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