

## 1A, 200V - 1000V Surface Mount Rectifiers

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



### MECHANICAL DATA

**Case:** DO-214AC (SMA)

Molding compound, UL flammability classification rating 94V-0

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

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

**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)

**DO-214AC (SMA)**

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)								
PARAMETER	SYMBOL	S1D -K	S1G -K	S1J -K	S1K -K	S1M -K	UNIT	
Marking code		S1D	S1G	S1J	S1K	S1M		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	200	400	600	800	1000	V	
Maximum RMS voltage	V <sub>RMS</sub>	140	280	420	560	700	V	
Maximum DC blocking voltage	V <sub>DC</sub>	200	400	600	800	1000	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>	30						A
Maximum instantaneous forward voltage (Note 1) @ 1 A	V <sub>F</sub>	1.1						V
Maximum reverse current @ rated V <sub>R</sub>	I <sub>R</sub>	1 50						μA
		T <sub>J</sub> =25°C T <sub>J</sub> =125°C						
Typical reverse recovery time (Note 2)	t <sub>rr</sub>	1.5						μs
Typical junction capacitance (Note 3)	C <sub>J</sub>	12						pF
Typical thermal resistance	R <sub>θJL</sub> R <sub>θJA</sub>	30 85						°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 to +175						°C
Storage temperature range	T <sub>STG</sub>	- 55 to +175						°C

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

Note 2: Reverse Recovery 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 D.C.

**ORDERING INFORMATION**

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
S1x-K (Note 1, 2)	R3	G	SMA	1,800 / 7" Plastic reel
	R2		SMA	7,500 / 13" Paper reel

Note 1: "x" defines voltage from 200V (S1D-K) to 1000V (S1M-K)

Note 2: Whole series with green compound

**EXAMPLE**

PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
S1M-K R3G	S1M-K	R3	G	Green compound

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

FIG. 1 FORWARD CURRENT DERATING CURVE

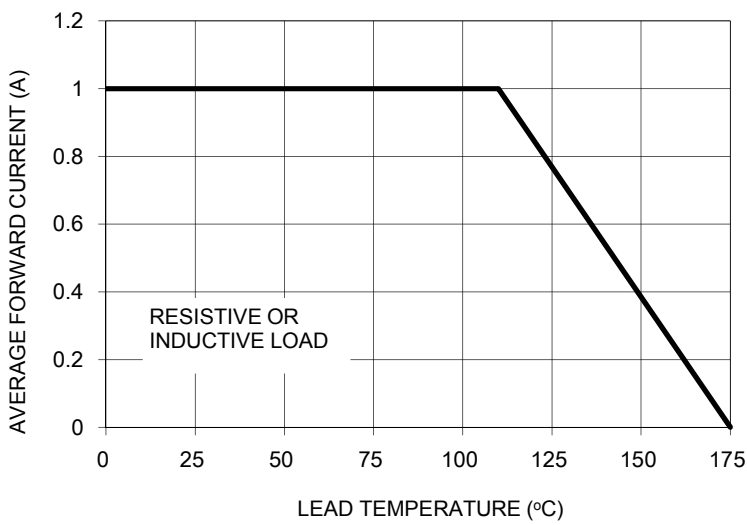


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

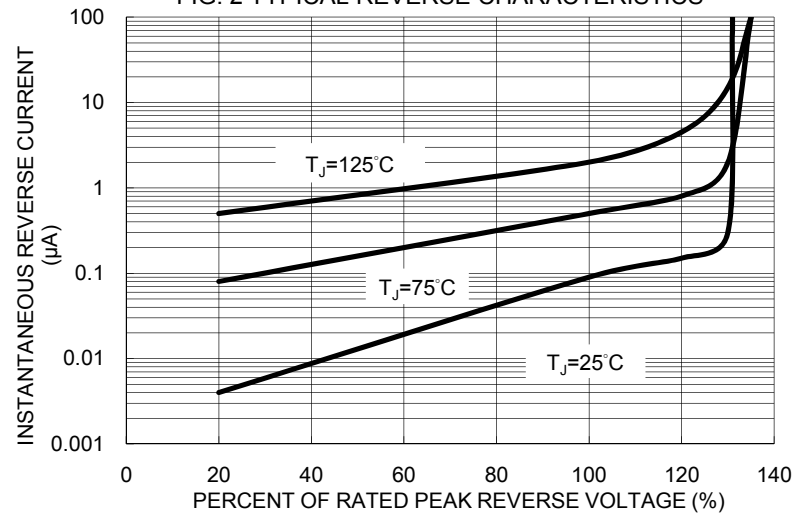


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

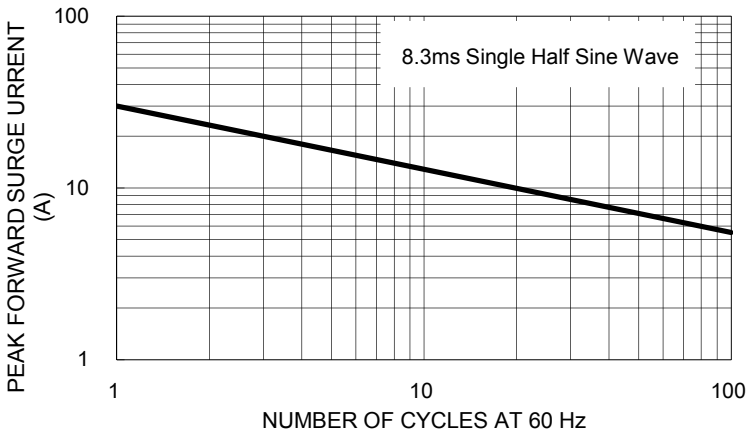


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

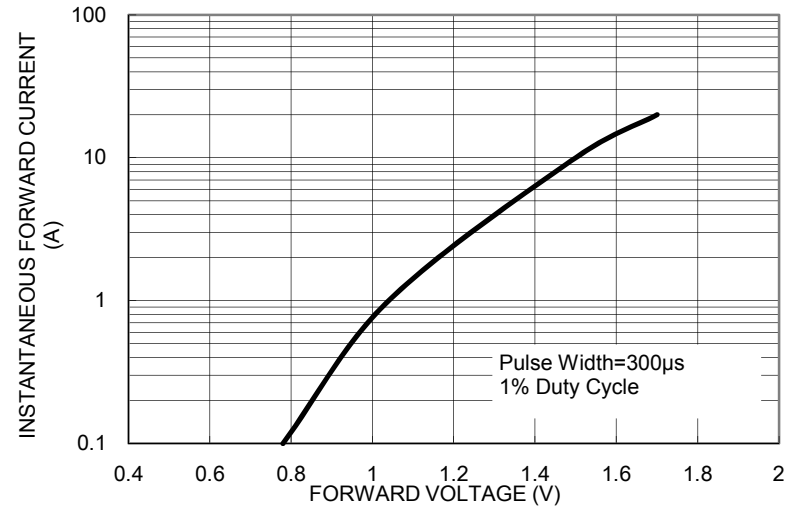


FIG. 5 TYPICAL JUNCTION CAPACITANCE

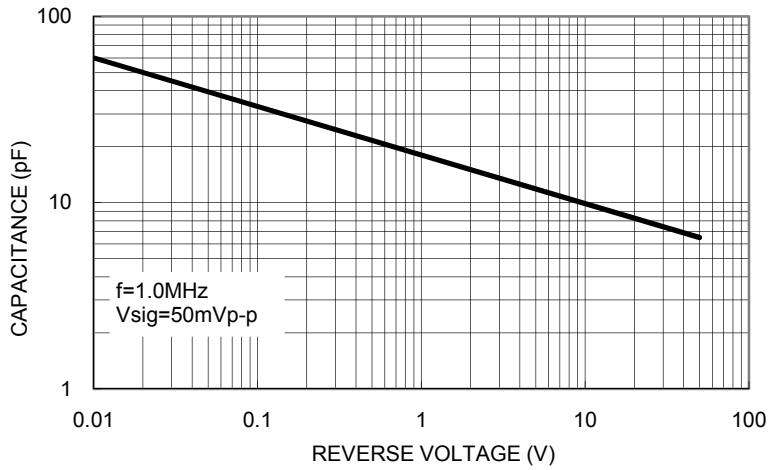
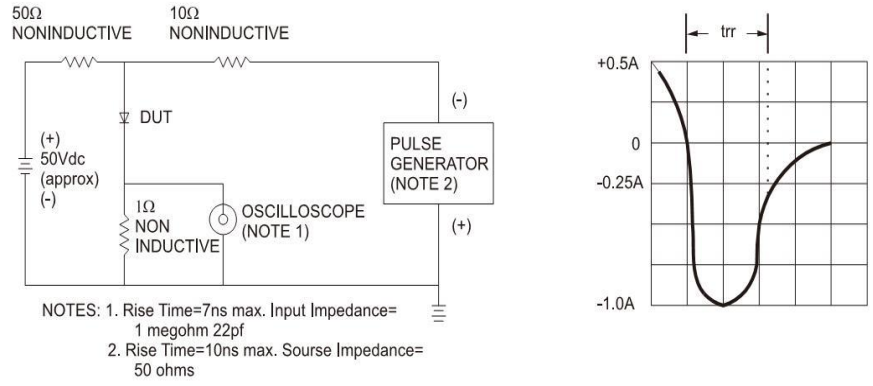
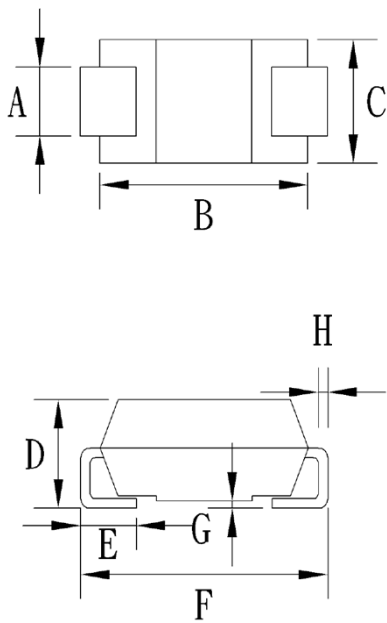


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

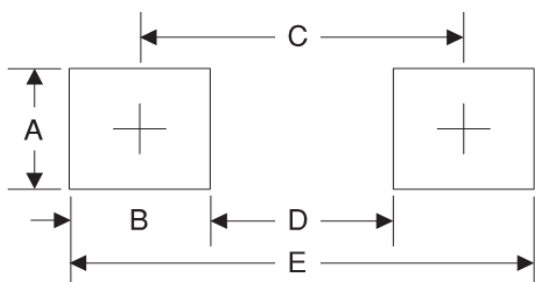


PACKAGE OUTLINE DIMENSIONS  
**DO-214AC (SMA)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.58	0.050	0.062
B	4.06	4.60	0.160	0.181
C	2.29	2.83	0.090	0.111
D	1.99	2.50	0.078	0.098
E	0.90	1.41	0.035	0.056
F	4.95	5.33	0.195	0.210
G	0.05	0.20	0.002	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



- P/N = Marking code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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