

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

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- 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



### MECHANICAL DATA

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

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)

**DO-214AC (SMA)**

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)							
PARAMETER	SYMBOL	HS1D -K	HS1G -K	HS1J -K	HS1K -K	HS1M -K	UNIT
Marking code		HS1D	HS1G	HS1J	HS1K	HS1M	
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>	1.0	1.3	1.7			V
<div>T<sub>J</sub>=25°C</div> <div>Maximum reverse current @ rated V<sub>R</sub></div> <div>T<sub>J</sub>=100°C</div> <div>T<sub>J</sub>=125°C</div>	I <sub>R</sub>	<div>5</div> <div>100</div> <div>150</div>					μA
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	50		75			ns
Typical junction capacitance (Note 3)	C <sub>J</sub>	20		15			pF
Typical thermal resistance	R <sub>θJA</sub>	70					°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 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
HS1x-K (Note 1)	R3	G	SMA	1,800 / 7" Plastic reel
	R2		SMA	7,500 / 13" Paper reel
	M2		SMA	7,500 / 13" Plastic reel

Note 1: "x" defines voltage from 200V (HS1D-K) to 1000V (HS1M-K)

\*: Optional available

EXAMPLE				
EXAMPLE PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
HS1M-K R3G	HS1M-K	R3	G	Green compound

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub>=25°C unless otherwise noted)

FIG.1 MAXIMUM AVERAGE FORWARD CURRENT DERATING

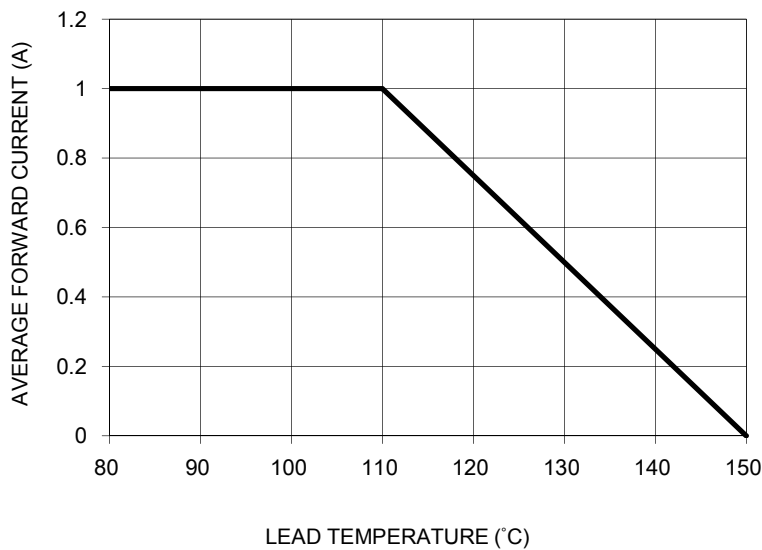


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

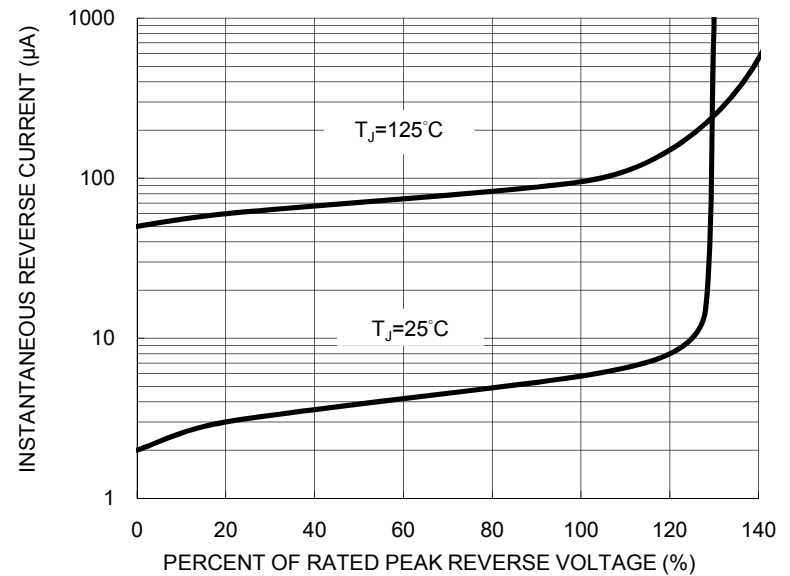


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

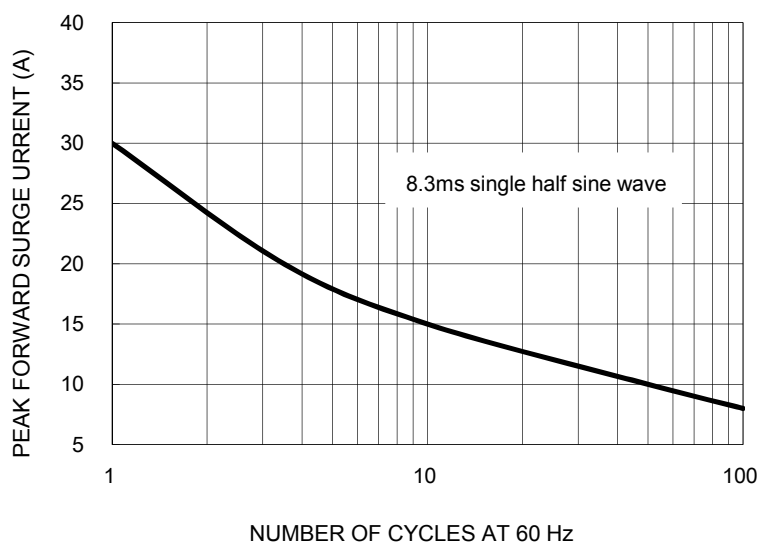


FIG. 4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

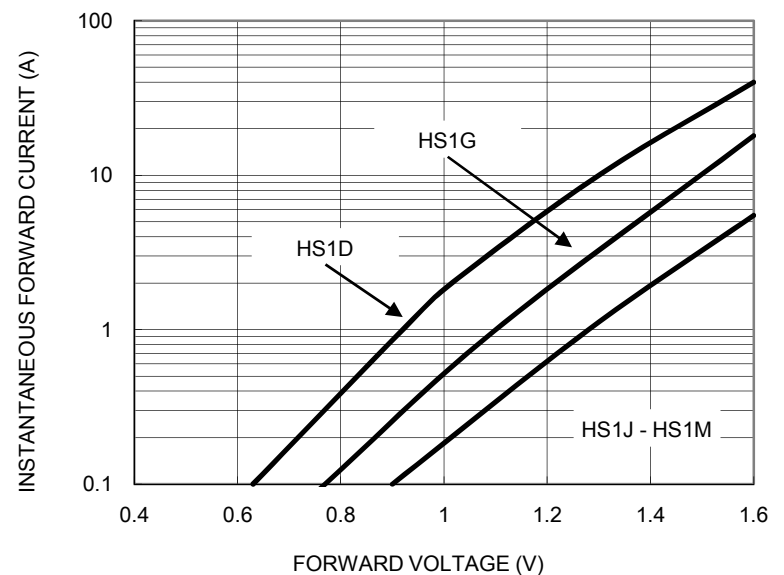


FIG. 5 TYPICAL JUNCTION CAPACITANCE

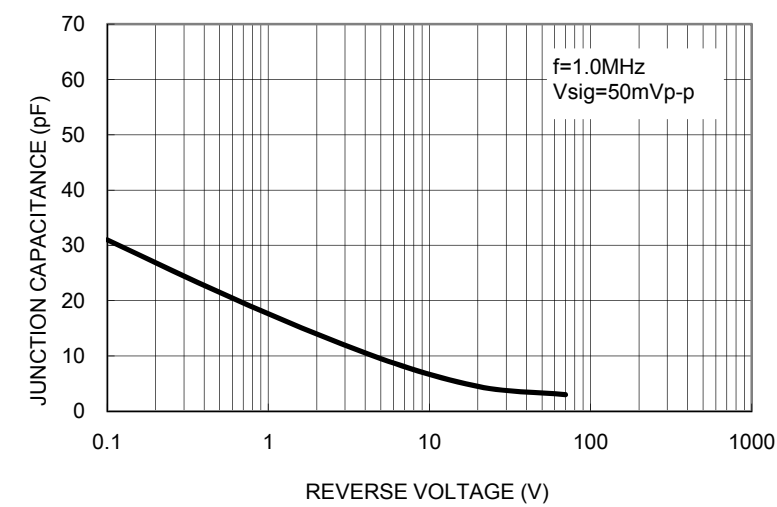
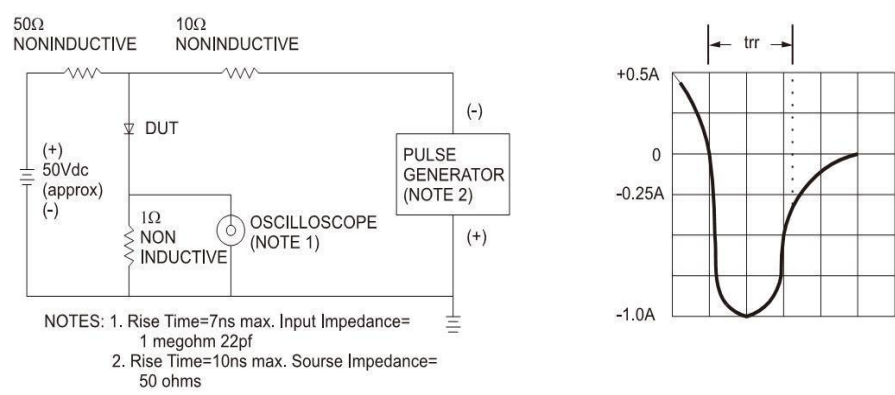
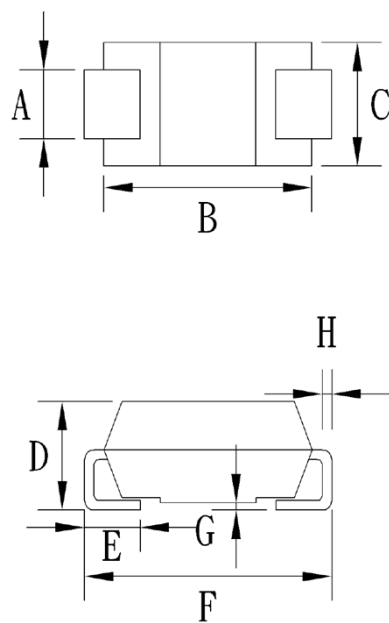


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

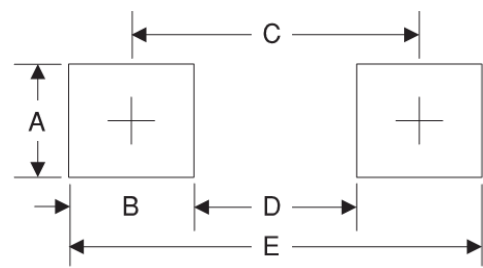


PACKAGE OUTLINE DIMENSIONS  
**DO-214AC (SMA)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.63	0.050	0.064
B	4.00	4.60	0.157	0.181
C	2.29	2.83	0.090	0.111
D	1.90	2.25	0.075	0.089
E	0.80	1.50	0.031	0.059
F	4.80	5.20	0.189	0.205
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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