

1A, 50V - 1000V Surface Mount Fast Recovery Rectifiers

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 definition



DO-214AC (SMA)

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound, UL flammability classification rating 94V-0

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

Part No. with suffix "H" means AEC-Q101 qualified

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

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

Meet JESD 201 class 2 whisker test

Polarity: Indicated by cathode band

Weight: 0.06 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)										
PARAMETER	SYMBOL	RS 1A	RS 1B	RS 1D	RS 1G	RS 1J	RS 1K	RS 1M	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V	
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V	
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	V	
Maximum average forward rectified current	I _{F(AV)}	1								A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30								A
Maximum instantaneous forward voltage (Note 1) @ 1 A	V _F	1.3								V
Maximum reverse current @ rated V _R	I _R	5 50								μA
Maximum reverse recovery time (Note 2)	t _{rr}	150			250		500		ns	
Typical junction capacitance (Note 3)	C _J	10								pF
Typical thermal resistance	R _{θJC} R _{θJA}	32 105								°C/W
Operating junction temperature range	T _J	- 55 to +150								°C
Storage temperature range	T _{STG}	- 55 to +150								°C

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

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACING CODE SUFFIX	PACKAGE	PACKING
RS1x (Note 1)	H	R3	G	SMA	1,800 / 7" Plastic reel
		R2		SMA	7,500 / 13" Paper reel
		M2		SMA	7,500 / 13" Plastic reel
		F3		Folded SMA	1,800 / 7" Plastic reel
		F2		Folded SMA	7,500 / 13" Paper reel
		F4		Folded SMA	7,500 / 13" Plastic reel
	N/A	E3		Clip SMA	1,800 / 7" Plastic reel
		E2		Clip SMA	7,500 / 13" Plastic reel

Note 1: "x" defines voltage from 50V (RS1A) to 1000V (RS1M)

EXAMPLE					
PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACING CODE SUFFIX	DESCRIPTION
RS1MHR3G	RS1M	H	R3	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

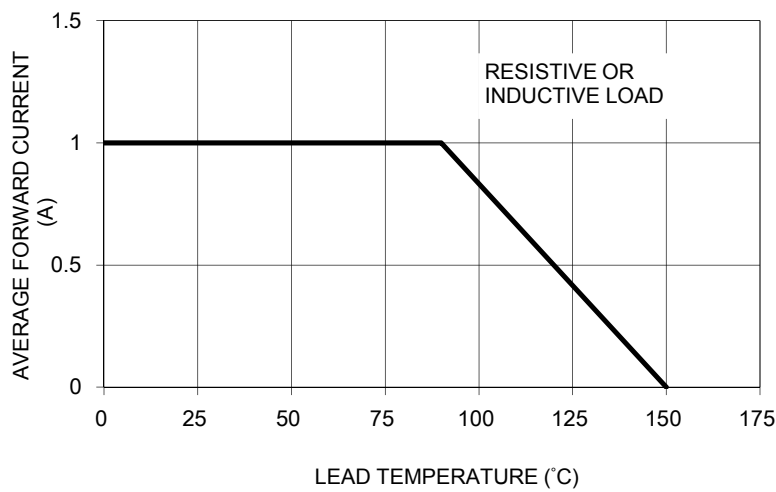


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

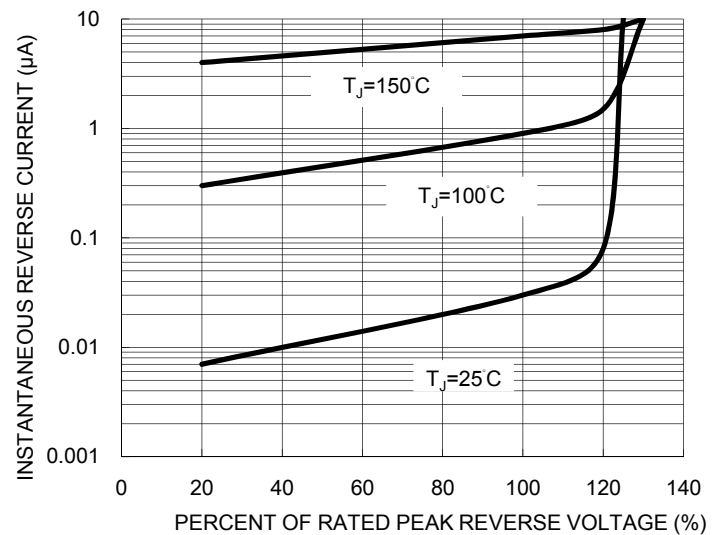


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

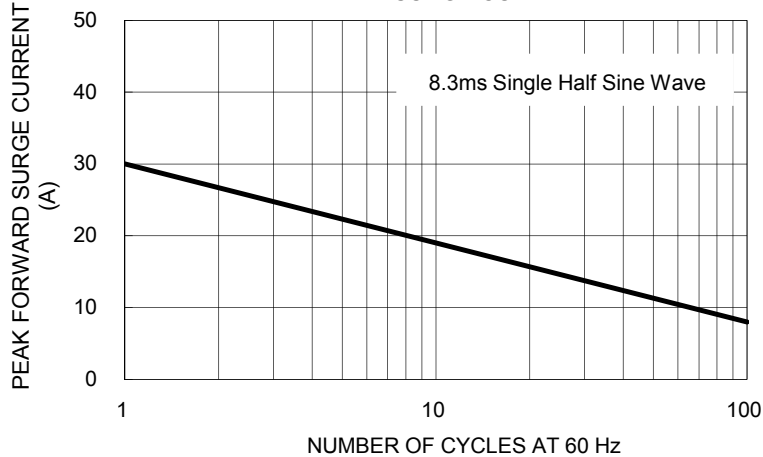


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

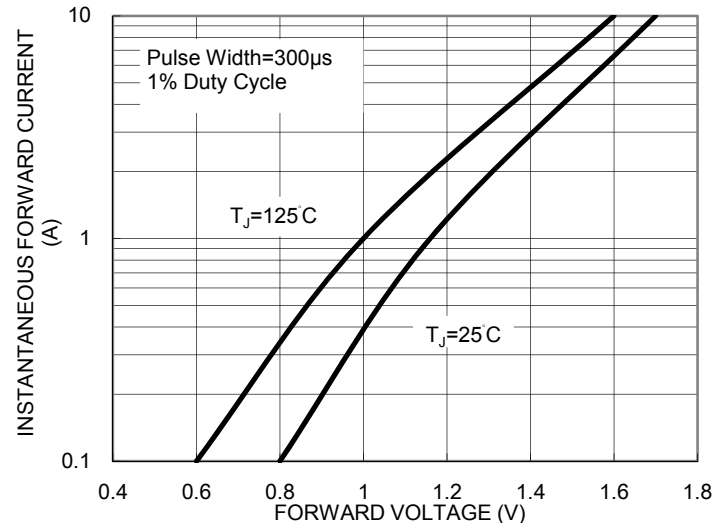


FIG. 5 TYPICAL JUNCTION CAPACITANCE

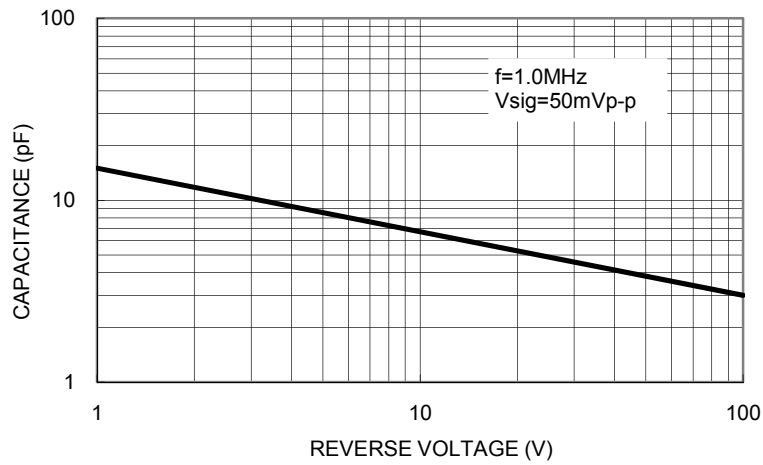
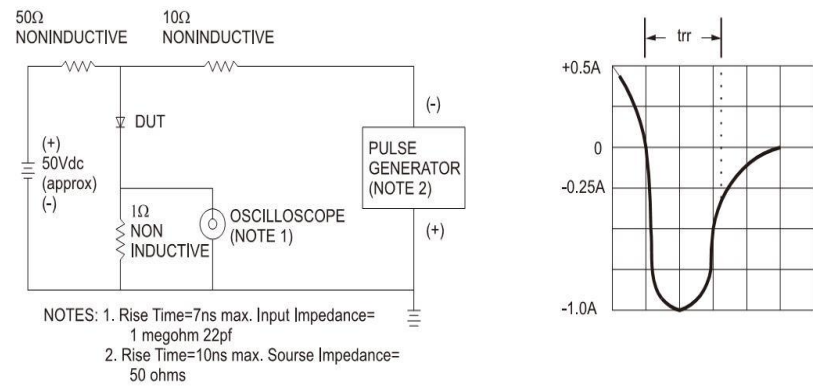
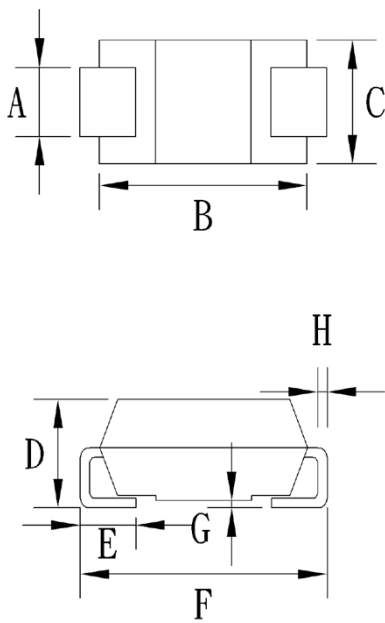


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



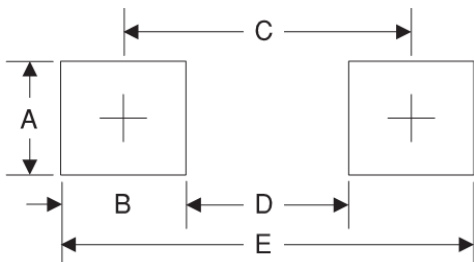
PACKAGE OUTLINE DIMENSIONS

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	0.10	0.20	0.004	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 = Specific Device Code
- G = Green Compound
- YW = Date Code
- F = Factory 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.

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taiwan Semiconductor:

[RS1D](#) [RS1J](#) [RS1B](#) [RS1M](#) [RS1G](#) [RS1K](#) [RS1A](#) [RS1B R3](#) [RS1J R3](#) [RS1M R2](#) [RS1G F2](#) [RS1M F3G](#) [RS1D R2](#)
[RS1MHR3G](#) [RS1B R3G](#) [RS1K F2](#) [RS1DHR3G](#) [RS1G R2G](#) [RS1DHF3G](#) [RS1A F2G](#) [RS1A F2](#) [RS1D F2](#) [RS1A](#)
[R3G](#) [RS1A R2](#) [RS1BHR2G](#) [RS1J F2G](#) [RS1D R2G](#) [RS1K R3](#) [RS1JHR2](#) [RS1D R3](#) [RS1KHF2G](#) [RS1GHR2G](#)
[RS1BHR3G](#) [RS1MHR2G](#) [RS1G F3G](#) [RS1J R2G](#) [RS1K R2G](#) [RS1M F2](#) [RS1J R2](#) [RS1G R3G](#) [RS1JHF3G](#)
[RS1AHR2G](#) [RS1GHF3G](#) [RS1KHR3G](#) [RS1DHR3](#) [RS1B R2](#) [RS1MHF3G](#) [RS1DHR2G](#) [RS1D F2G](#) [RS1GHF2](#)
[RS1G R2](#) [RS1AHR3G](#) [RS1B F2](#) [RS1D R3G](#) [RS1G R3](#) [RS1J R3G](#) [RS1B R2G](#) [RS1JHR3](#) [RS1MHR3](#) [RS1MHF2G](#)
[RS1KHF3G](#) [RS1GHR3G](#) [RS1BHF3G](#) [RS1KHR3](#) [RS1K R2](#) [RS1DHF2G](#) [RS1B F3G](#) [RS1J F2](#) [RS1M R2G](#) [RS1A](#)
[R3](#) [RS1KHR2G](#) [RS1A R2G](#) [RS1AHR3](#) [RS1K F3G](#) [RS1M F2G](#) [RS1K R3G](#) [RS1M R3G](#) [RS1AHF3G](#) [RS1GHF2G](#)
[RS1K F2G](#) [RS1B F2G](#) [RS1G F2G](#) [RS1M R3](#) [RS1BHR3](#) [RS1JHF2G](#) [RS1AHF2G](#) [RS1BHF2G](#) [RS1A F3G](#) [RS1J](#)
[F3G](#) [RS1JHR3G](#) [RS1GHR3](#) [RS1JHR2G](#) [RS1D F3G](#) [RS1A F3](#) [RS1K F3](#) [RS1J F3](#) [RS1D F3](#) [RS1G F3](#) [RS1M F3](#)
[RS1B F3](#)