1A, 50V - 1000V Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- General purpose

MECHANICAL DATA

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	50 - 1000	V
I_{FSM}	30, 40	A
$T_{J\ MAX}$	175	°C
Package	DO-214AC (SMA)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AC (SMA)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	S1 AH	S1 BH	S1 DH	S1 GH	S1 JH	S1 KH	S1 MH	UNIT
Marking code on the device		S1A	S1B	S1D	S1G	S1J	S1K	S1M	
Repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	I_F	1							A
Peak forward surge current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	40						30	A
Non-repetitive peak reverse avalanche energy, I_{AS} = 1A, L = 10mH	E_{RSM}	5							mJ
Junction temperature	T_J	- 55 to +175							°C
Storage temperature	T_{STG}	- 55 to +175							°C

THERMAL PERFORMANCE

PARAMETER		SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	S1AH S1BH S1DH S1GH S1JH	$R_{\Theta JL}$	27	°C/W
	S1KH S1MH		30	°C/W
Junction-to-ambient thermal resistance	S1AH S1BH S1DH S1GH S1JH	$R_{\Theta JA}$	75	°C/W
	S1KH S1MH		85	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)	I_F = 1A, T_J = 25°C	V_F	-	1.1	V
Reverse current @ rated V_R(2)	T_J = 25°C	I_R	-	1	μA
	T_J = 125°C		-	50	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	12	-	pF
Reverse recovery time	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	1500	-	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
S1xH	DO-214AC (SMA)	7,500 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(S1AH) to 1000V(S1MH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

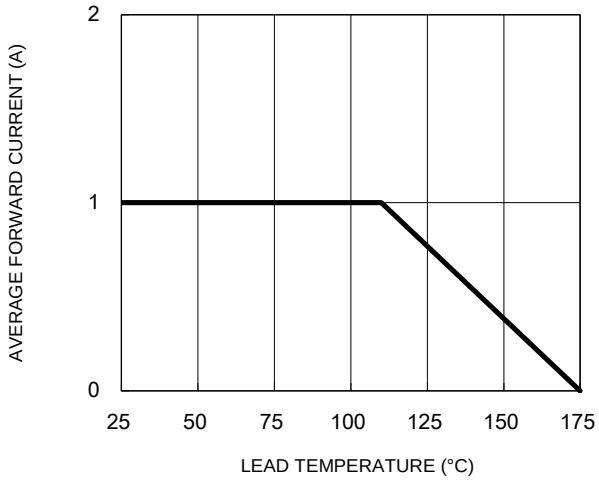


Fig.2 Typical Junction Capacitance

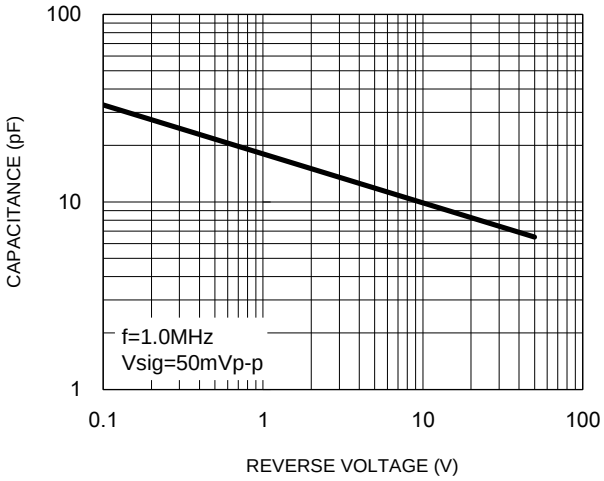


Fig.3 Typical Reverse Characteristics

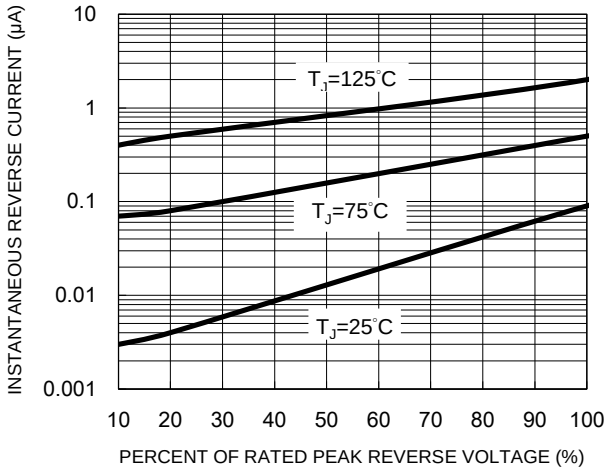


Fig.4 Typical Forward Characteristics

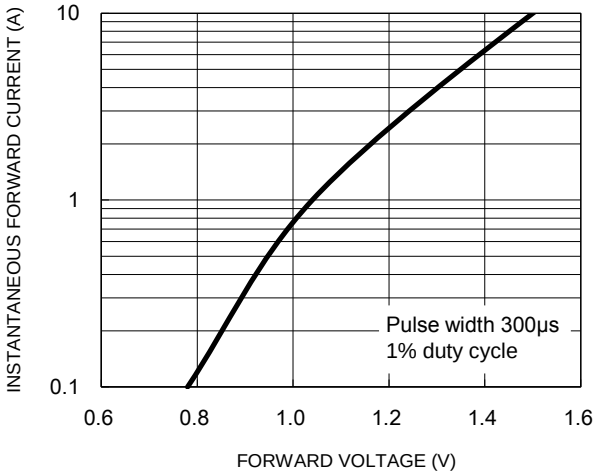
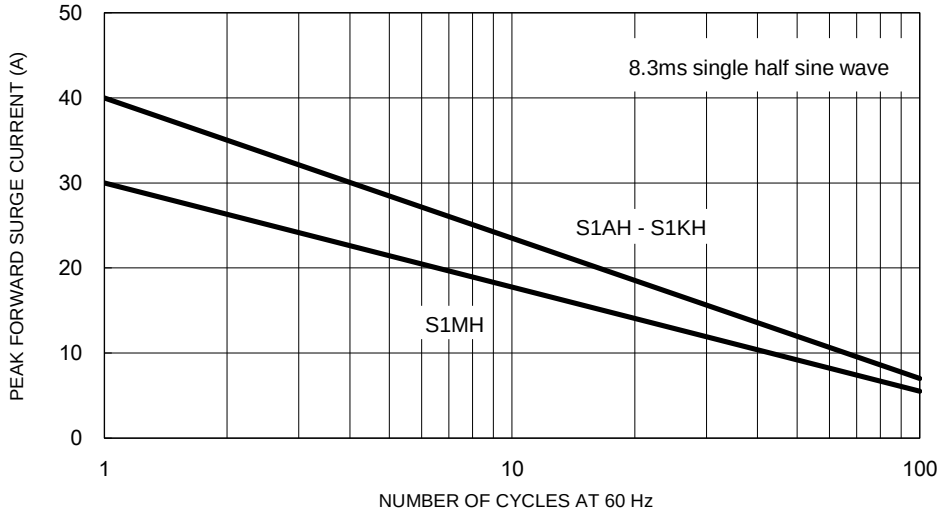


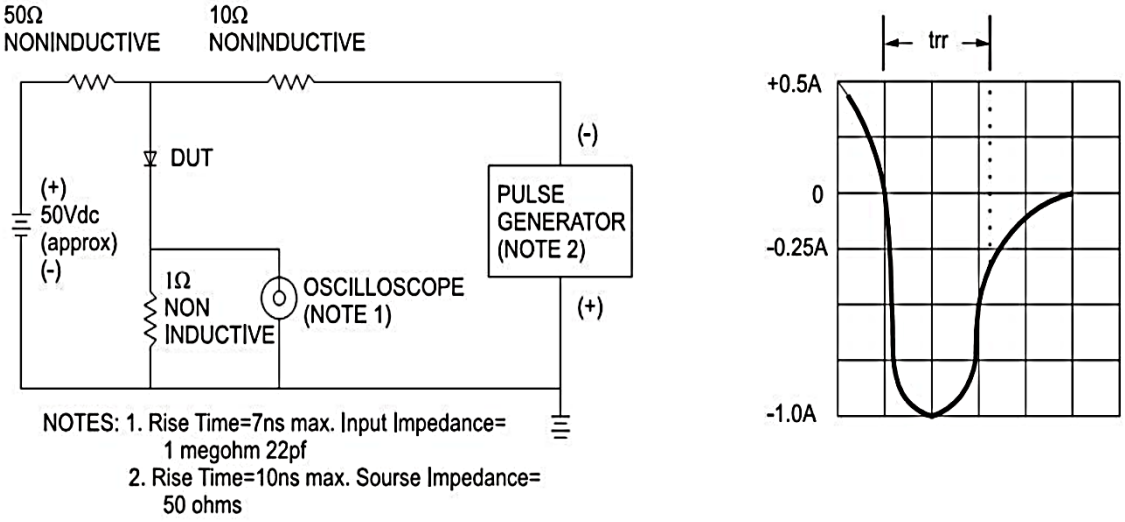
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

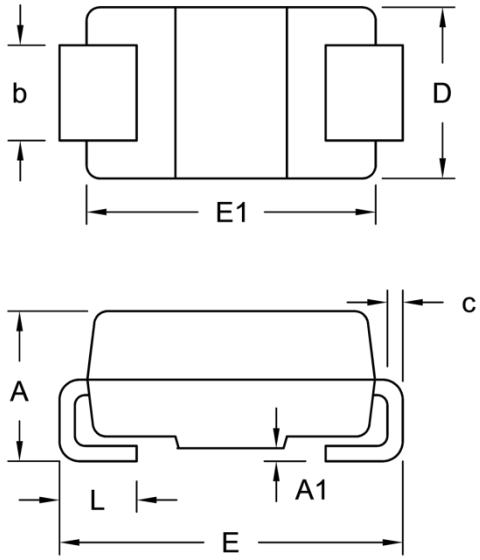
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



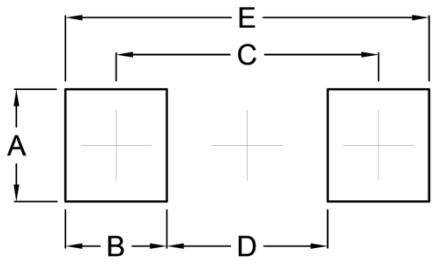
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

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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