

## 2A, 600V Surface Mount Super Fast Rectifier

### FEATURES

- Fast forward recovery time for high frequency operation
- Negligible switching losses
- Reduces switching and conduction losses
- 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

### APPLICATIONS

- Designed for high frequency switching mode inverters and converters for consumer, computers, lighting, automotive and telecommunications
- The low IRRM is an immediately advantage to reduce the switching losses in associated of switching devices. Also suitable as priority protection and other rectifications purposes

### MECHANICAL DATA

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Part No. with suffix "H" means AEC-Q101 qualified
- 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 J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.07 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	2	A
$V_{RRM}$	600	V
$I_{FSM}$	40	A
$T_{JMAX}$	150	°C
Package	DO-214AC (SMA)	
Configuration	Single Die	



**DO-214AC (SMA)**

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	UG2JA	UNIT
Marking code on the device		UG2JA	
Repetitive peak reverse voltage	$V_{RRM}$	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Maximum DC blocking voltage	$V_{DC}$	600	V
Forward current	$I_{F(AV)}$	2	A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	40	A
Junction temperature	$T_J$	- 55 to +150	°C
Storage temperature	$T_{STG}$	- 55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	70	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F = 2\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.3	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	2.0	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	50	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	$t_{rr}$	40	55	ns
Forward recovery time	$I_F = 2\text{A},$ $di_F/dt = 100\text{A}/\mu\text{s},$ $V_{FR} = 1.1 \times V_{Fmax}$	$t_{fr}$	-	100	ns
Forward recovery voltage	$I_F = 2\text{A},$ $di_F/dt = 100\text{A}/\mu\text{s},$ $V_{FR} = 1.1 \times V_{Fmax}$	$V_{FP}$	-	9	V
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	$C_J$	20	-	pF

**Notes:**

1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
UG2JA	H	F2	G	Folded SMA	7,500 / 13" Paper reel
		F3		Folded SMA	1,800 / 7" Plastic reel
		F4		Folded SMA	7,500 / 13" Plastic reel
		R3		SMA	1,800 / 7" Plastic reel
		M2		SMA	7,500 / 13" Plastic reel

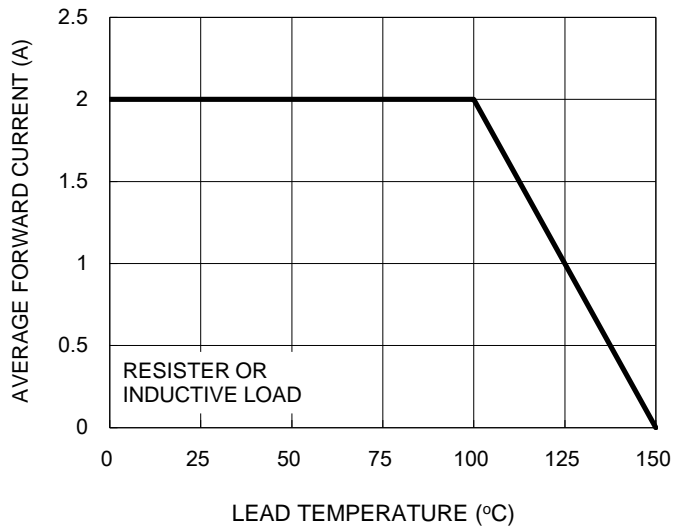
\*: Optional available

<b>EXAMPLE P/N</b>					
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
UG2JAHF2G	UG2JA	H	F2	G	AEC-Q101 qualified Green compound

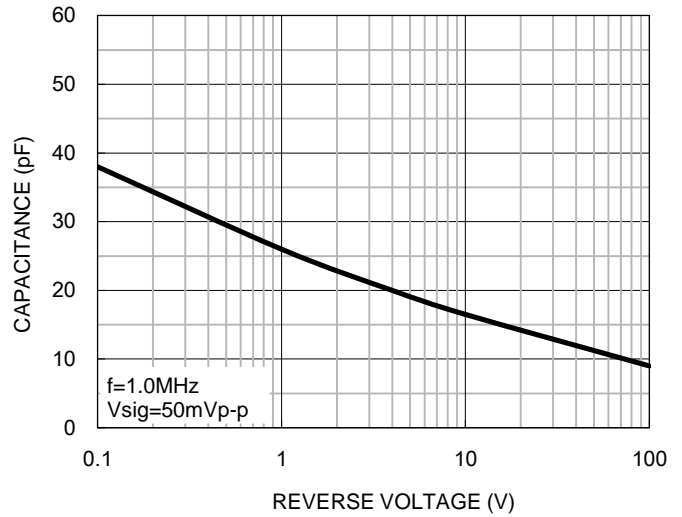
**CHARACTERISTICS CURVES**

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

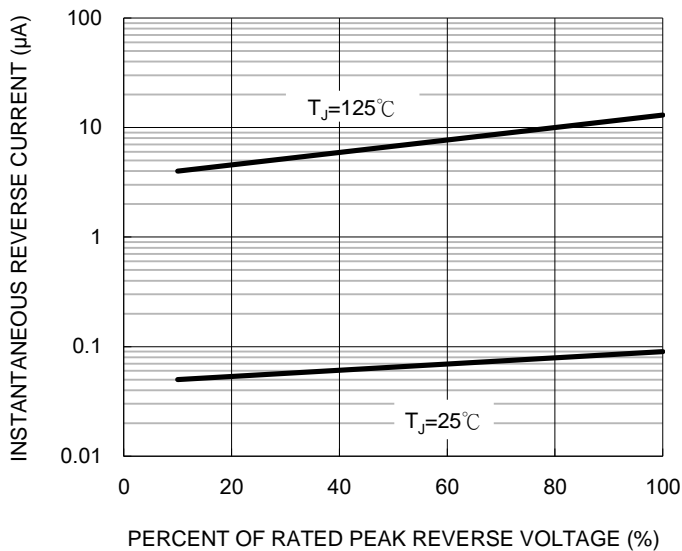
**Fig.1 Forward Current Derating Curve**



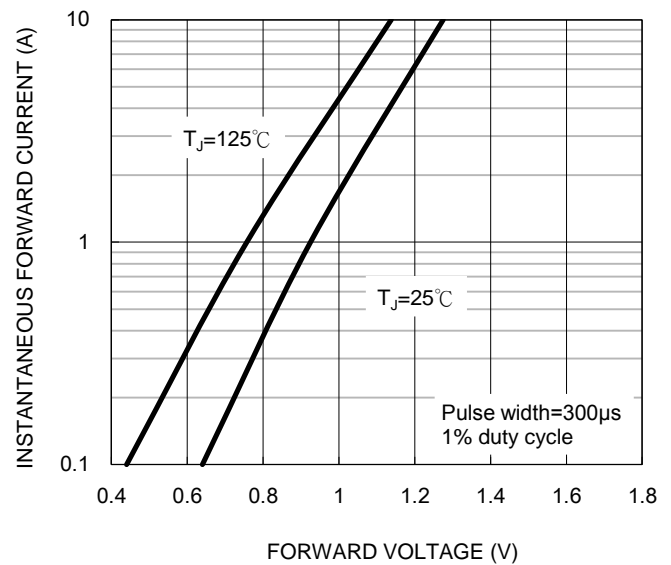
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



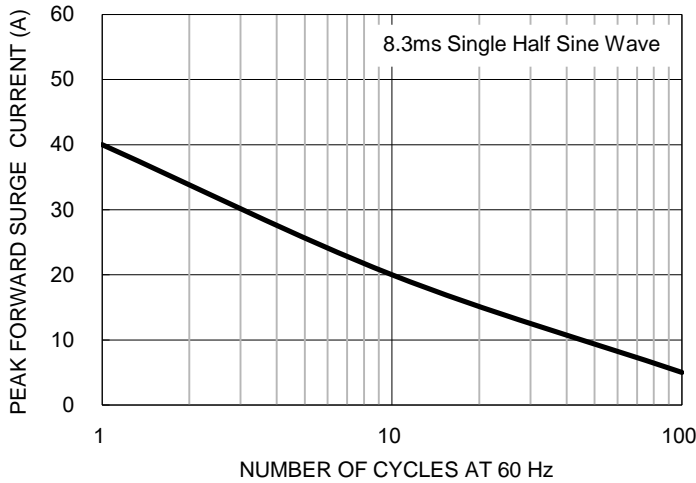
**Fig.4 Typical Forward Characteristics**



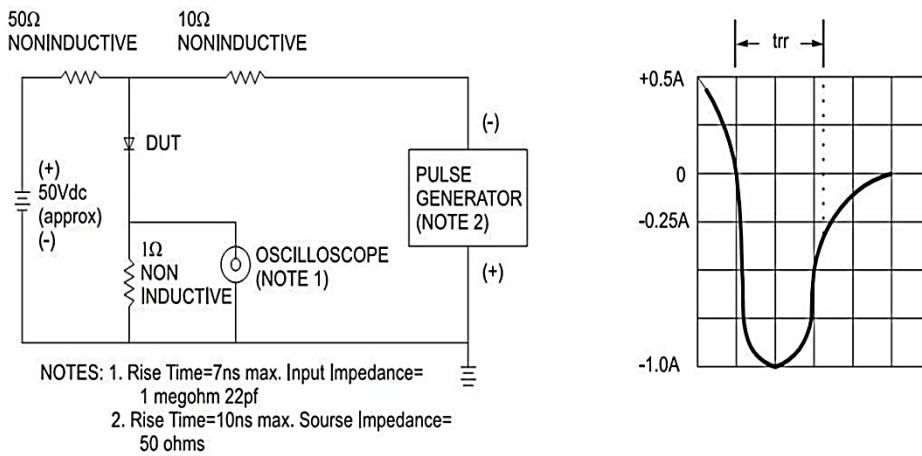
**CHARACTERISTICS CURVES**

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

**Fig.5 Maximum Non-repetitive Forward Surge Current**

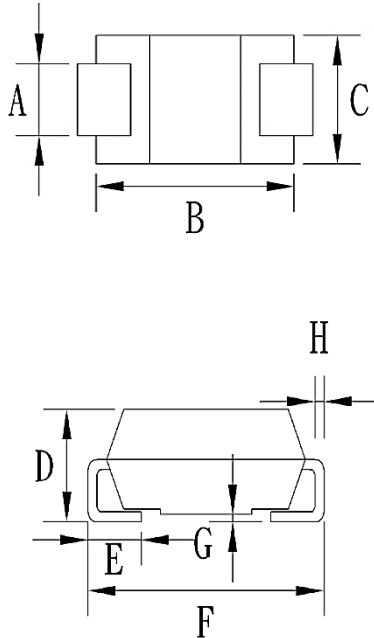


**Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram**



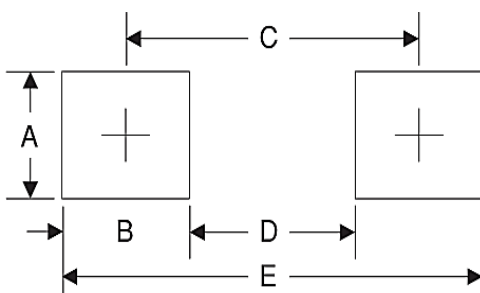
**PACKAGE OUTLINE DIMENSIONS**

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 = Marking Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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