

2A, 600V High Efficient Surface Mount Rectifier

FEATURES

- Fast forward recovery time for high frequency operation
- Negligible switching losses
- Reduces switching and conduction losses
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Designed for high frequency switching mode inverters and converters for consumer, computers, lighting, telecommunications
- The low I_{RRM} is an immediate advantage to reduce the switching losses in association 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
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.070g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	2	A
V_{RRM}	600	V
I_{FSM}	40	A
$T_{J MAX}$	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
Forward current	I_F	2	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	40	A
Junction temperature	T_J	- 55 to +150	°C
Storage temperature	T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	70	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 2\text{A}$, $T_J = 25^\circ\text{C}$	V_F	-	1.3	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	2	μA
	$T_J = 125^\circ\text{C}$		-	50	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	20	-	pF
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	$I_F = 2\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$, $V_{FR} = 1.1 \times V_{F\max}$	t_{fr}	-	100	ns
Forward recovery voltage	$I_F = 2\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$, $V_{FR} = 1.1 \times V_{F\max}$	V_{FP}	-	9	V

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
UG2JA	DO-214AC (SMA)	7,500 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

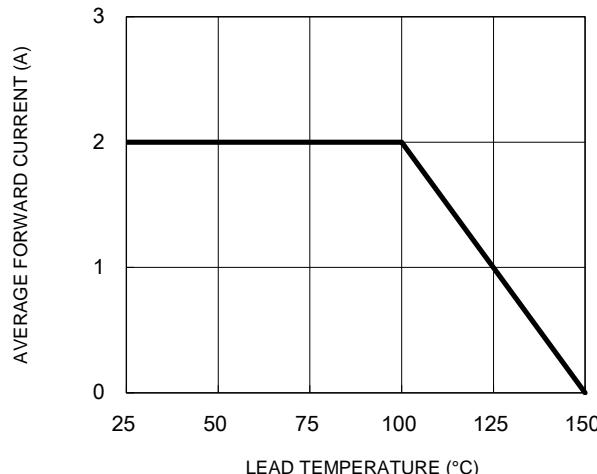


Fig.2 Typical Junction Capacitance

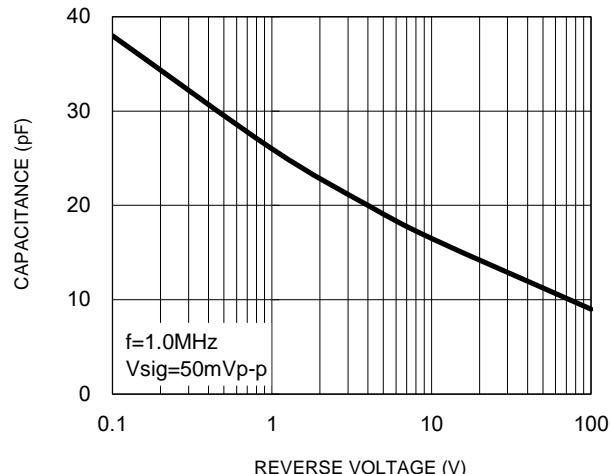


Fig.3 Typical Reverse Characteristics

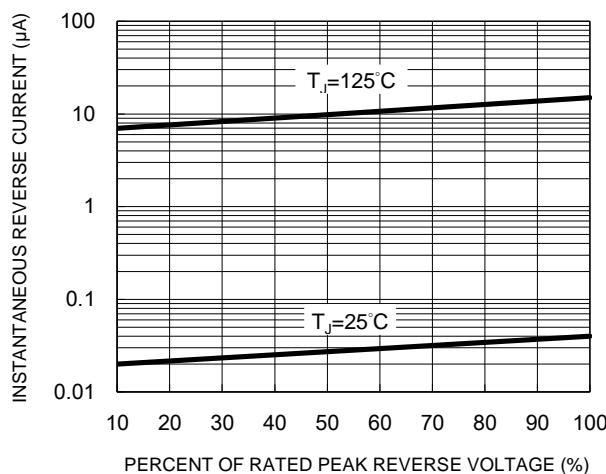


Fig.4 Typical Forward Characteristics

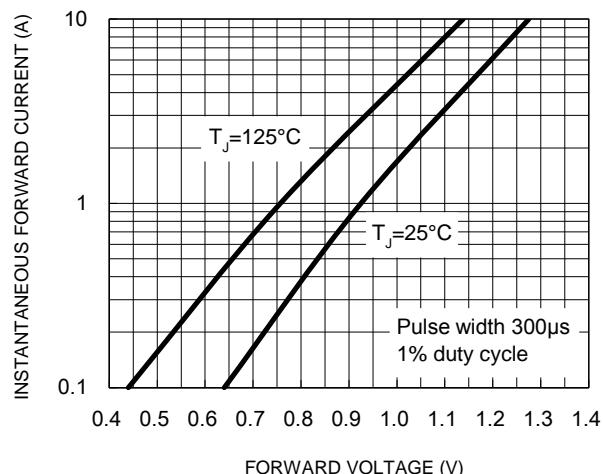
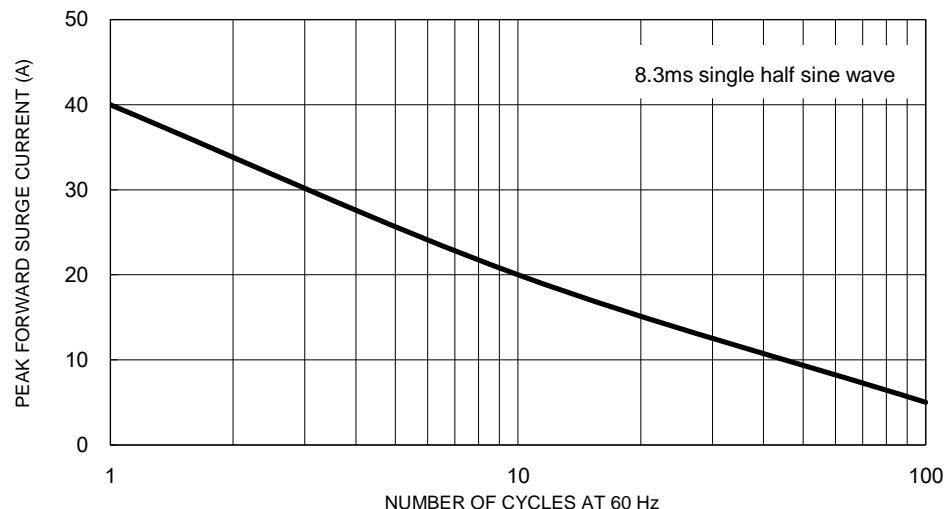


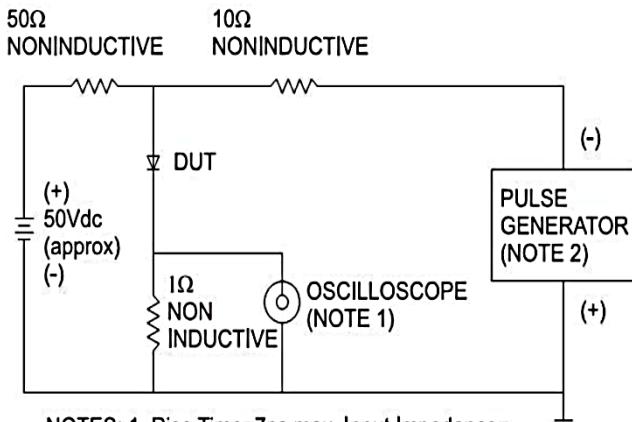
Fig.5 Maximum Non-Repetitive Forward Surge Current



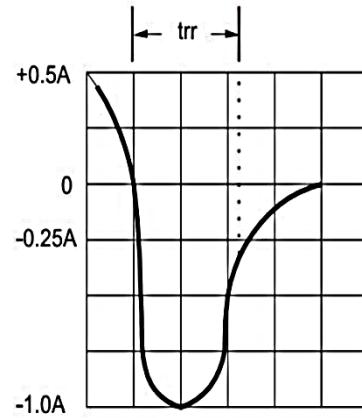
CHARACTERISTICS CURVES

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

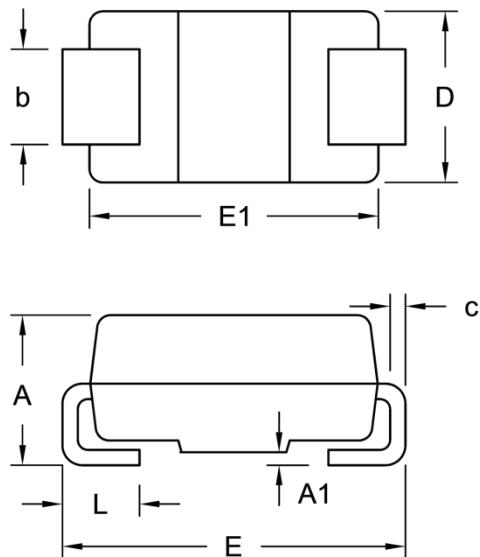
Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
 2. Rise Time=10ns max. Source Impedance= 50 ohms

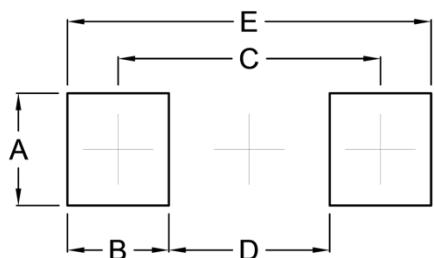


PACKAGE OUTLINE DIMENSIONS

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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