

## Surface Mount Ultra Fast Rectifiers

### FEATURES

- Fast forward recovery time for high frequency operation
- Negligible switching losses
- Ultrafast reverse recovery time
- Reduces switching and conduction losses
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- 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)**

### TYPICAL APPLICATIONS

Designed for high frequency switching mode inverters and converters for consumer, computers, lighting, automotive and telecommunications.

The low  $I_{RRM}$  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, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - halogen-free

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

Meet JESD 201 class 1A whisker test,

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.07g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	UG2JA		UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	600		V
Maximum RMS voltage	$V_{RMS}$	420		V
Maximum DC blocking voltage	$V_{DC}$	600		V
Maximum average forward rectified current	$I_{F(AV)}$	2		A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	40		A
Maximum instantaneous forward voltage (Note 1) @ 2 A	$V_F$	1.30		V
Maximum reverse current @ rated VR	$I_R$	$T_J=25^{\circ}\text{C}$	2	$\mu\text{A}$
		$T_J=125^{\circ}\text{C}$	50	
Reverse recovery time (Note 2)	$t_{rr}$	Typ.	Max.	ns
		40	55	
Forward recovery time (Note 3)	$t_{fr}$	Typ.	Max.	ns
		-	100	
Forward recovery voltage (Note 3)	$V_{FP}$	-	9	V
Typical junction capacitance (Note 4)	$C_j$	20		pF
Typical thermal resistance	$R_{\theta JL}$	25		$^{\circ}\text{C/W}$
	$R_{\theta JA}$	70		
Operating junction temperature range	$T_J$	- 55 to +150		$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	- 55 to +150		$^{\circ}\text{C}$

Note 1: Pulse test with  $PW=300\ \mu\text{s}$ , 1% duty cycle

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

Note 3: Forward Recovery Test Conditions:  $I_F=2\text{A}$ ,  $dI_F/dt = 100\text{A}/\mu\text{s}$ ,  $V_{FR} = 1.1 \times V_{Fmax}$

Note 4: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

ORDERING INFORMATION					
PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
UG2JA	Prefix "H"	F3	Suffix "G"	Folded SMA	1,800 / 7" Plastic reel
		F2		Folded SMA	7,500 / 13" Paper reel
		F4		Folded SMA	7,500 / 13" Plastic reel

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
UG2JA F3	UG2JA		F3		
UG2JA F3G	UG2JA		F3	G	Green compound
UG2JAHF3	UG2JA	H	F3		AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

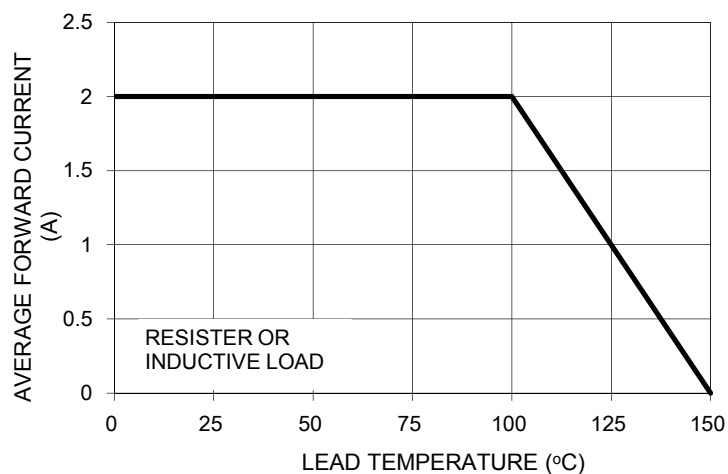


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

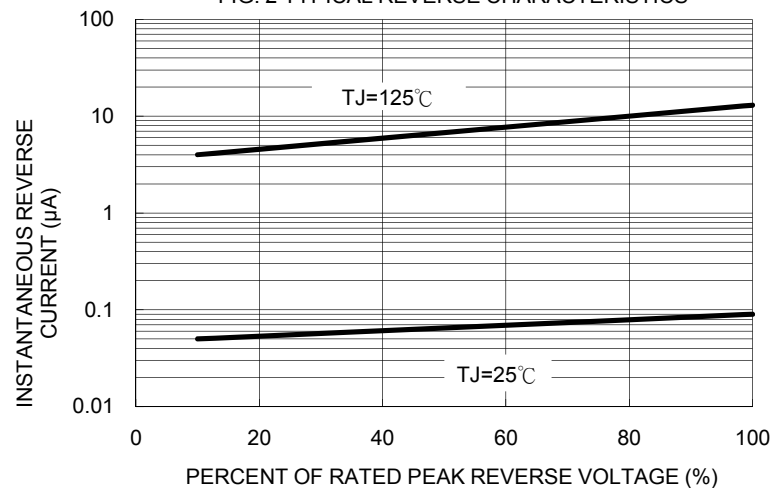


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

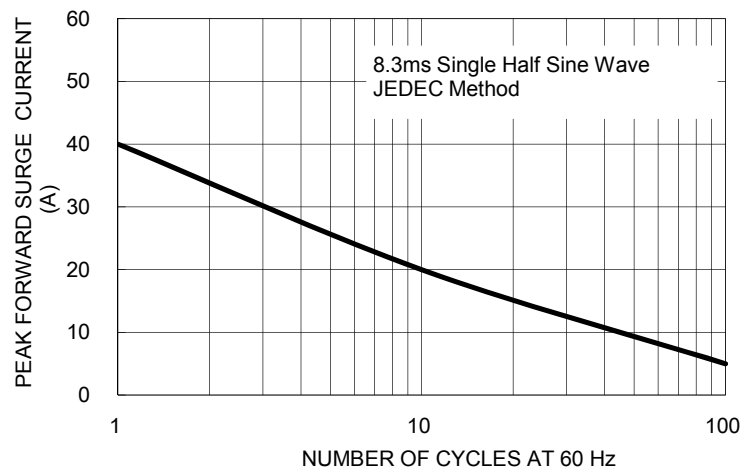


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

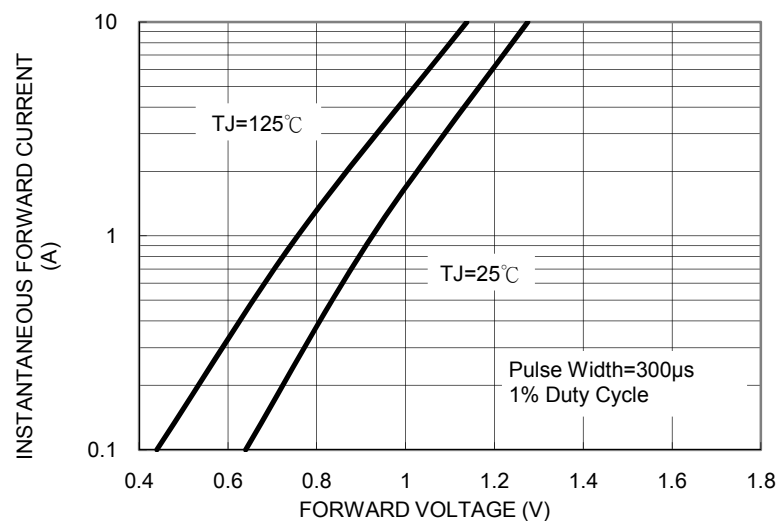


FIG. 5 TYPICAL JUNCTION CAPACITANCE

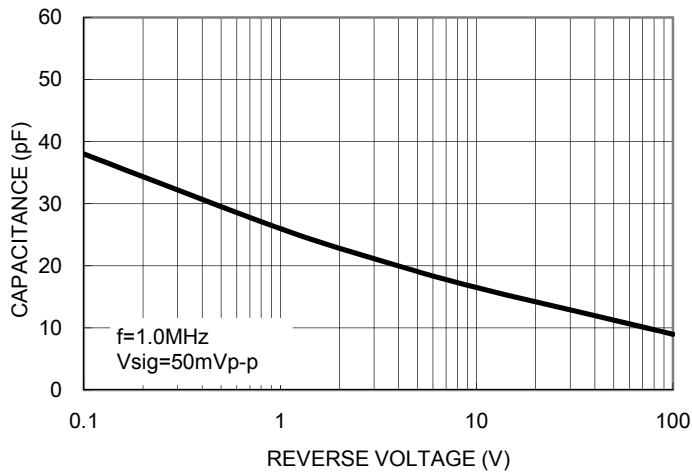
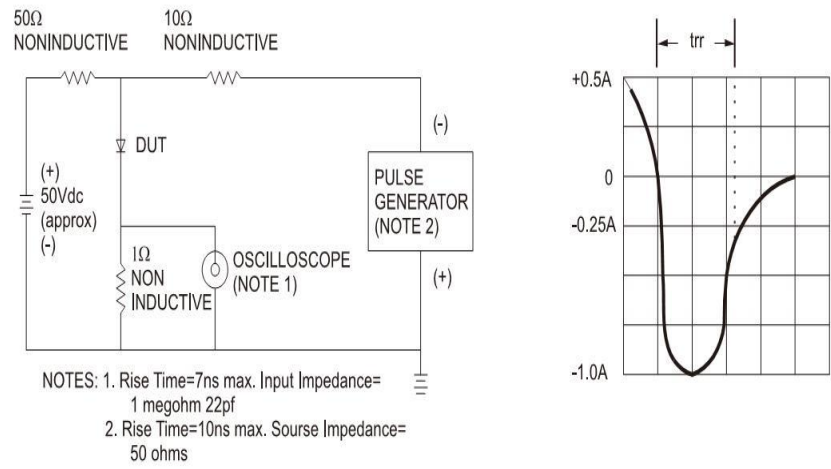
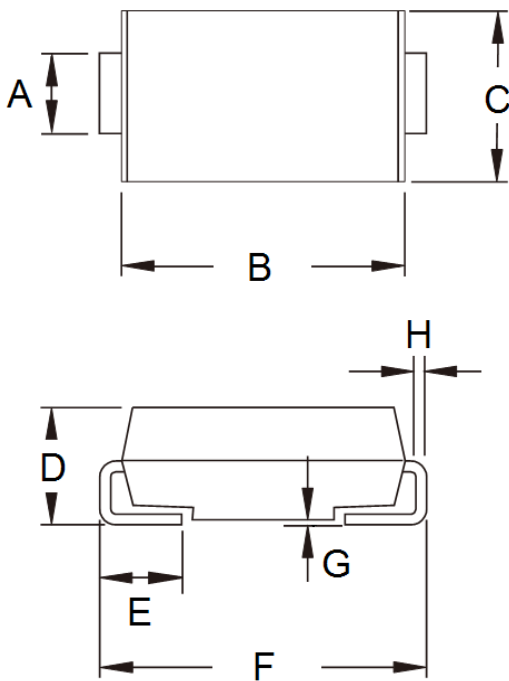


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

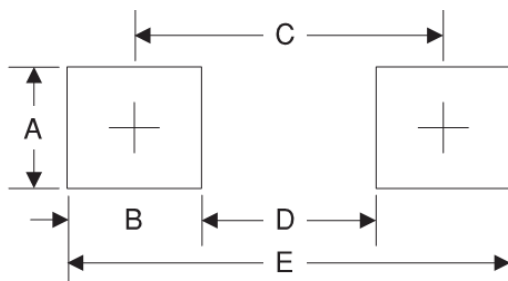


PACKAGE OUTLINE DIMENSIONS



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

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