2A, 100V - 200V Surface Mount Ultra Fast Rectifiers

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Ultra fast recovery time for high efficiency
- 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

DO-214AC (SMA)

Pb-Free

RoHS COMPLIANT

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: 0.07 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)					
PARAMETER	SYMBOL	ESH2BA	ESH2CA	ESH2DA	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Maximum RMS voltage	V_{RMS}	70	105	140	V
Maximum DC blocking voltage	V_{DC}	100	150	200	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}	50			A
Maximum instantaneous forward voltage (Note 1) @ 1 A	V_F	0.90			V
Maximum reverse current @ rated V_R T_J=25°C	I_R	1			μA
T_J=100°C		10			
T_J=125°C		50			
Maximum reverse recovery time (Note 2)	t_{rr}	25			ns
Pulse energy in avalanche mode, non repetitive (inductive load switch off), L=120mH	E_{RSM}	20			mJ
Typical junction capacitance (Note 3)	C_J	25			pF
Typical thermal resistance	$R_{\theta JL}$	20			°C/W
	$R_{\theta JA}$	75			
Operating junction temperature range	T_J	- 55 to +175			°C
Storage temperature range	T_{STG}	- 55 to +175			°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	PACKING CODE SUFFIX (*)	PACKAGE	PACKING
ESH2xA (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

Note 1: "xx" defines voltage from 100V (ESH2BA) to 200V (ESH2DA)

*: Optional available

EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
ESH2DAHR3G	ESH2DA	H	R3	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

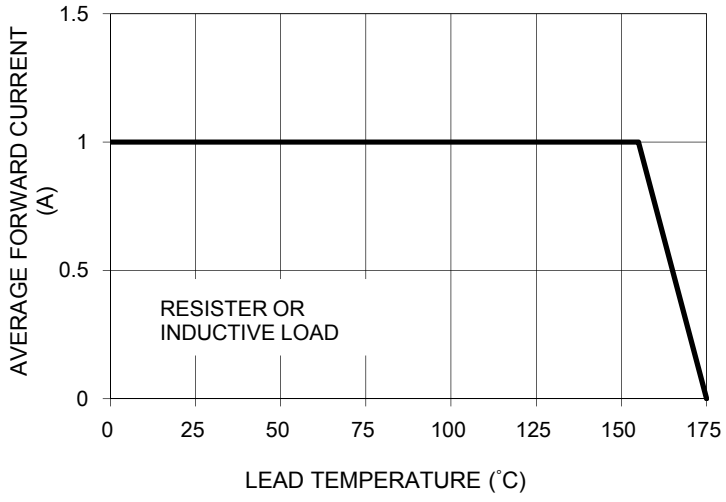


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

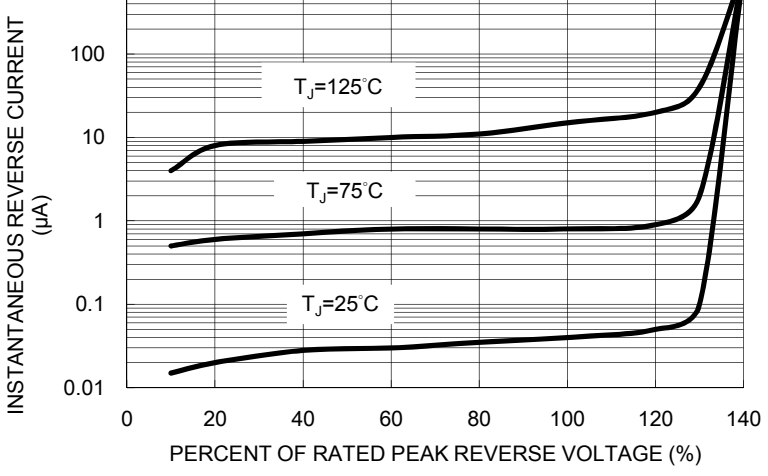


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

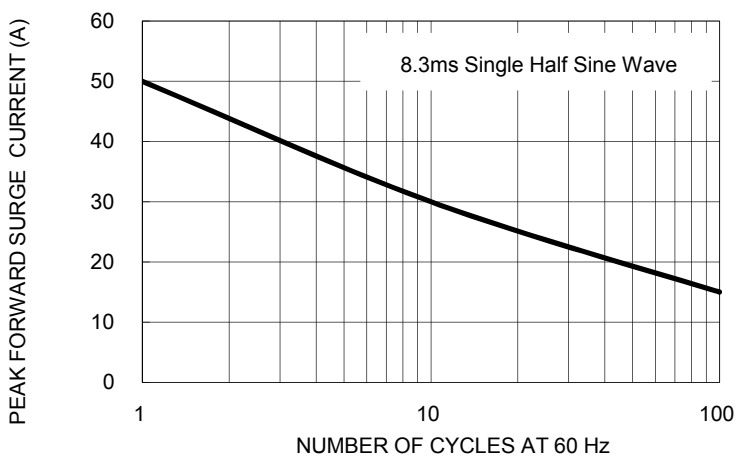


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

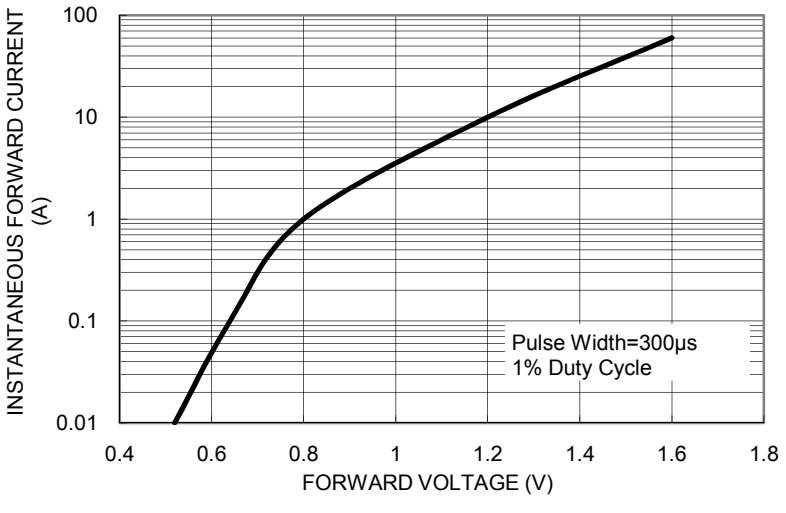


FIG. 5 TYPICAL JUNCTION CAPACITANCE

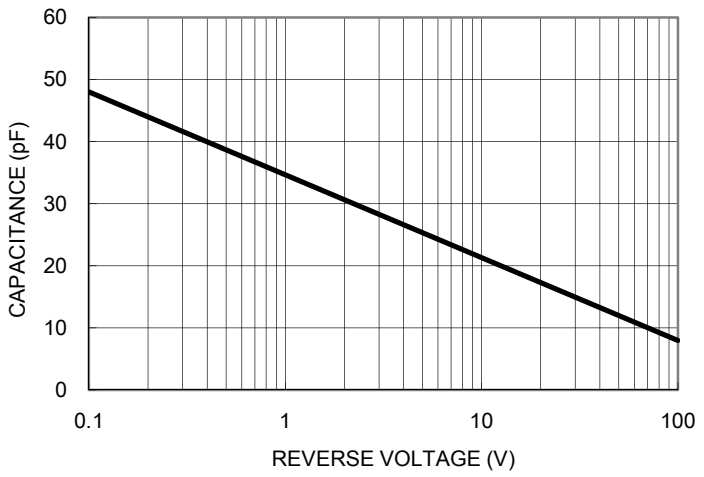
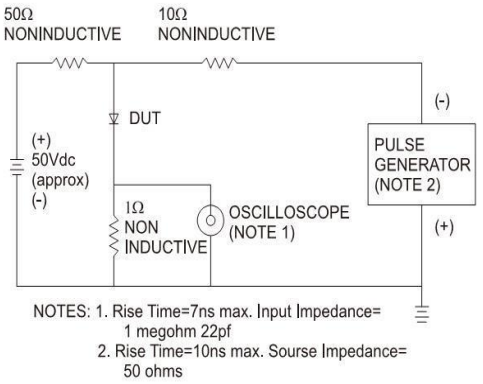
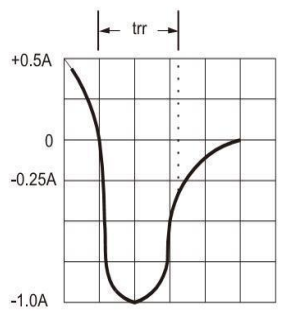


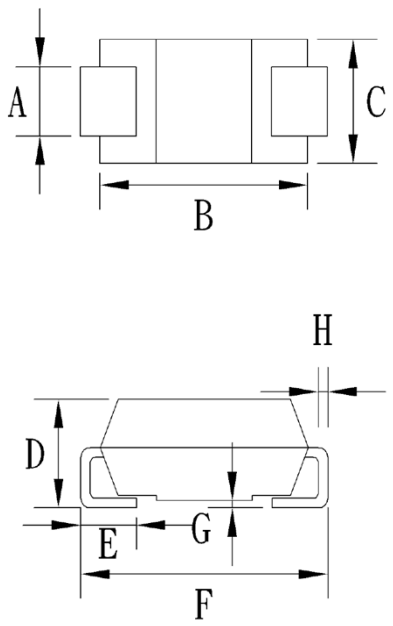
FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





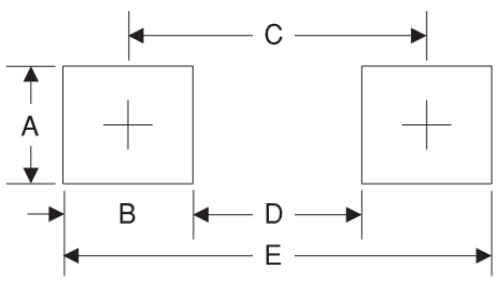
PACKAGE OUTLINE DIMENSIONS

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

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