

1A, 50V - 600V Surface Mount Super Fast Rectifiers

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Super fast recovery time for high efficiency
- Built-in strain relief
- 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)

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: 0.06 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)												
PARAMETER	SYMBOL	ES 1A	ES 1B	ES 1C	ES 1D	ES 1F	ES 1G	ES 1H	ES 1J	UNIT		
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	500	600	V		
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	350	420	V		
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	500	600	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}	30							A			
Maximum instantaneous forward voltage (Note 1) @ 1 A	V_F	0.95			1.3		1.7		V			
Maximum reverse current @ rated V_R $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_R	5 100										
Typical reverse recovery time (Note 2)	t_{rr}	35							ns			
Typical junction capacitance (Note 3)	C_J	16			18					pF		
Typical thermal resistance	$R_{\theta JL}$ $R_{\theta JA}$	35 85							°C/W			
Operating junction temperature range	T_J	- 55 to +150							°C			
Storage temperature range	T_{STG}	- 55 to +150							°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: Measured at 1 MHz and Applied $V_R=4.0$ Volts

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
ES1x (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
	N/A	E3		Clip SMA	1,800 / 7" Plastic reel
		E2		Clip SMA	7,500 / 13" Plastic reel

Note 1: "x" defines voltage from 50V (ES1A) to 600V (ES1J)

EXAMPLE

PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
ES1JHR3G	ES1J	H	R3	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 MAXIMUM FORWARD CURRENT
DERATING CURVE

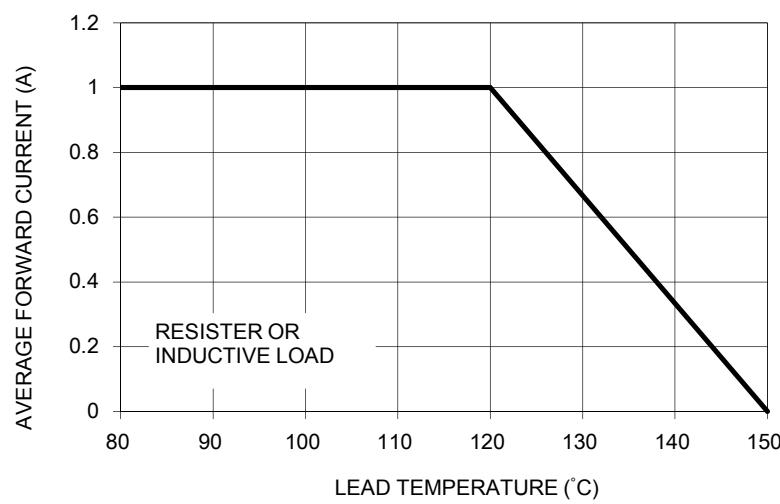


FIG. 2 TYPICAL INSTANTANEOUS FORWARD
CHARACTERISTICS

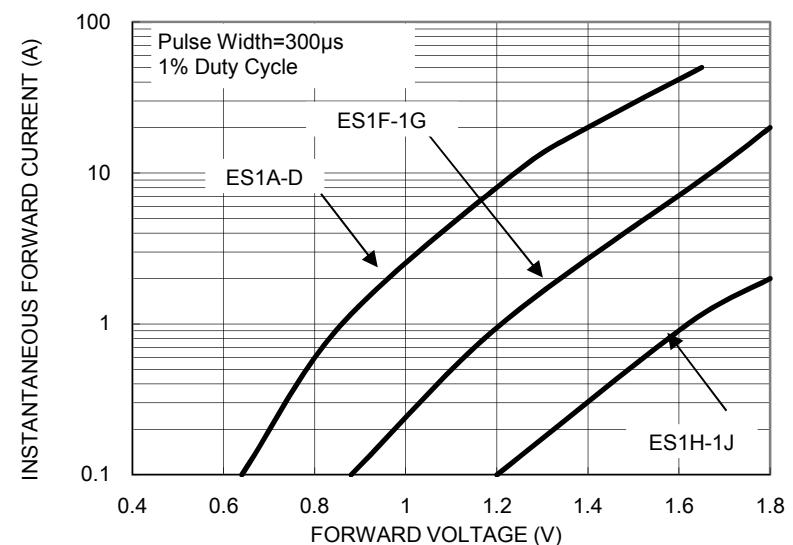


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD PEAK
SURGE CURRENT

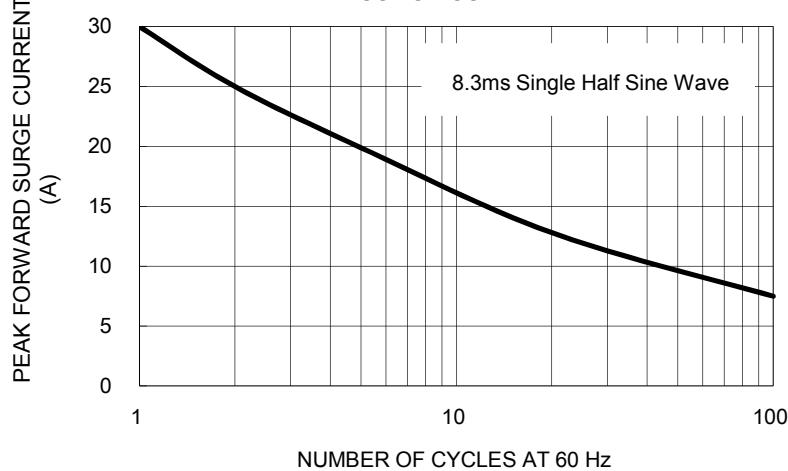


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

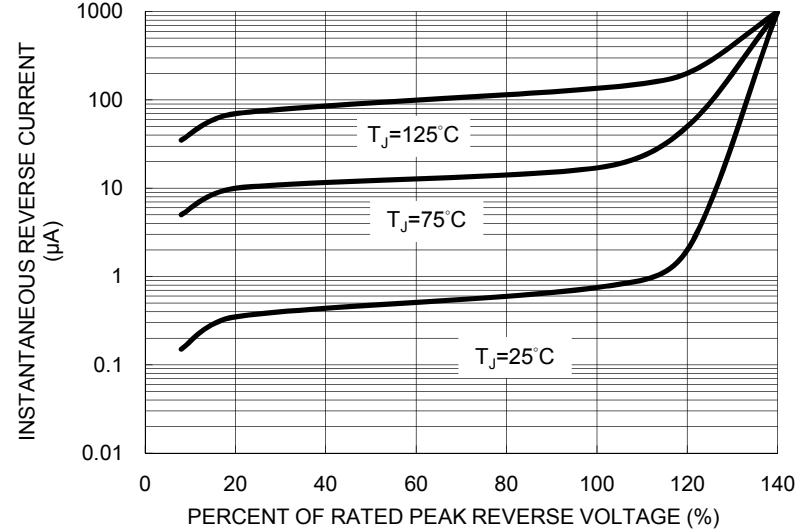
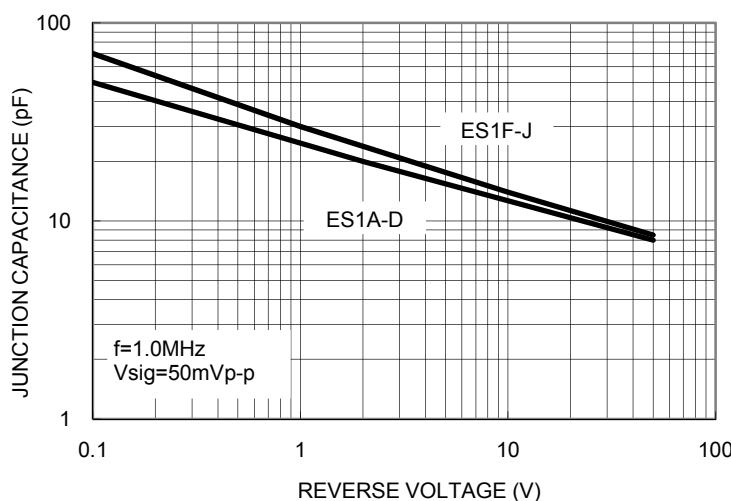
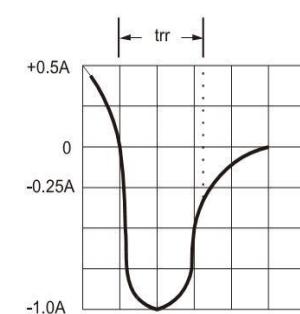
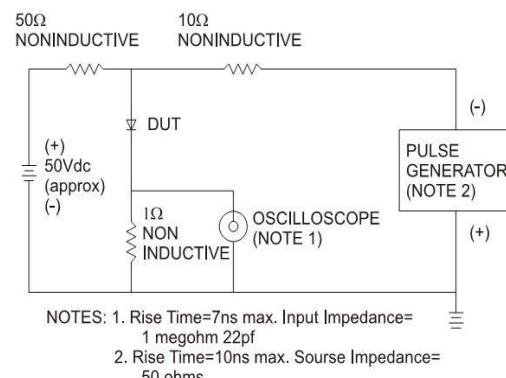
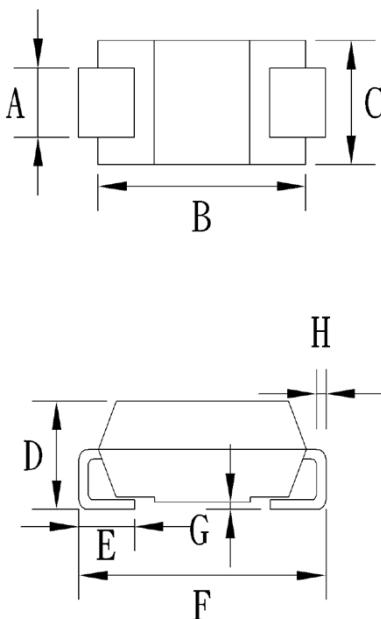
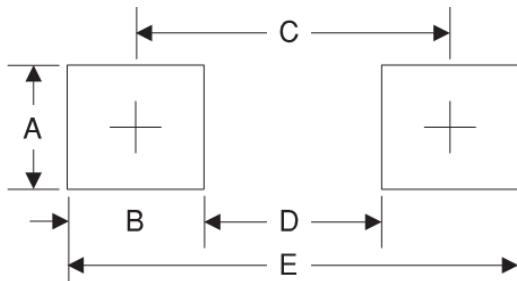


FIG. 5 TYPICAL JUNCTION CAPACITANCE

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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