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

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

Sub SMA

Pb-Free

RoHS COMPLIANT

MECHANICAL DATA

Case: Sub 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: 0.019 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	ES 1AL	ES 1BL	ES 1CL	ES 1DL	ES 1FL	ES 1GL	ES 1HL	ES 1JL	UNIT
Marking code		EAL	EBL	ECL	EDL	EFL	EGL	EHL	EJL	
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°C T_J=125°C	I_R	5 100								μA
Typical junction capacitance (Note 2)	C_J	10				8				pF
Maximum reverse recovery time (Note 3)	t_{rr}	35								ns
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=300μs, 1% duty cycle

Note 2: Measured at 1 MHz and Applied V_R=4.0 Volts.

Note 3: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
ES1xL (Note 1)	H	RU	G	Sub SMA	1,800 / 7" Plastic reel (8mm tape)
		RV		Sub SMA	3,000 / 7" Plastic reel (8mm tape)
		RT		Sub SMA	7,500 / 13" Paper reel (8mm tape)
		MT		Sub SMA	7,500 / 13" Plastic reel (8mm tape)
		RQ		Sub SMA	10,000 / 13" Paper reel (8mm tape)
		MQ		Sub SMA	10,000 / 13" Plastic reel (8mm tape)
		R3		Sub SMA	1,800 / 7" Plastic reel (12mm tape)
		RF		Sub SMA	3,000 / 7" Plastic reel (12mm tape)
		R2		Sub SMA	7,500 / 13" Paper reel (12mm tape)
		M2		Sub SMA	7,500 / 13" Plastic reel (12mm tape)
		RH		Sub SMA	10,000 / 13" Paper reel (12mm tape)
		MH		Sub SMA	10,000 / 13" Plastic reel (12mm tape)

Note 1: "x" defines voltage from 50V (ES1AL) to 600V (ES1JL)

EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
ES1JLHRUG	ES1JL	H	RU	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES (T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

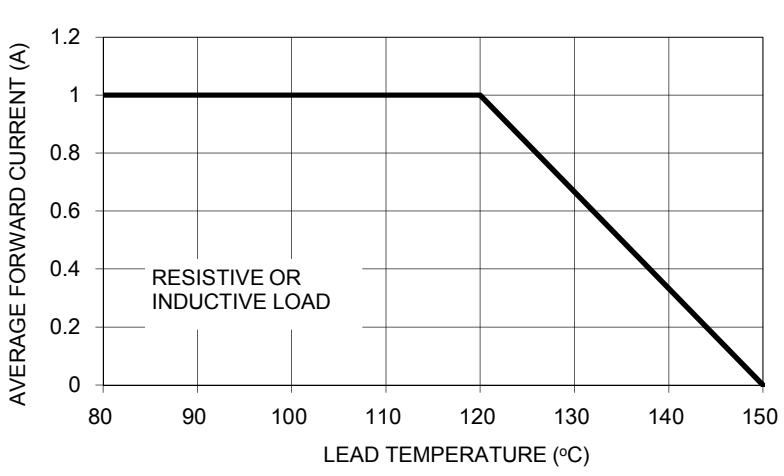


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

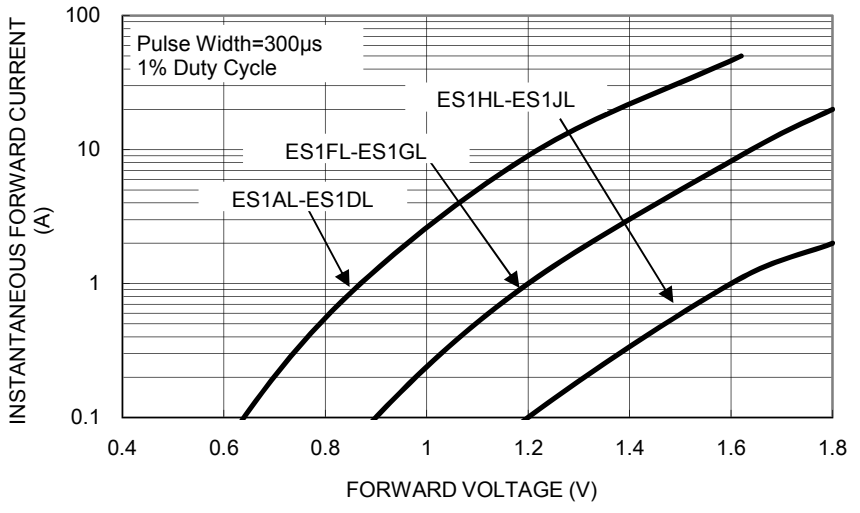


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

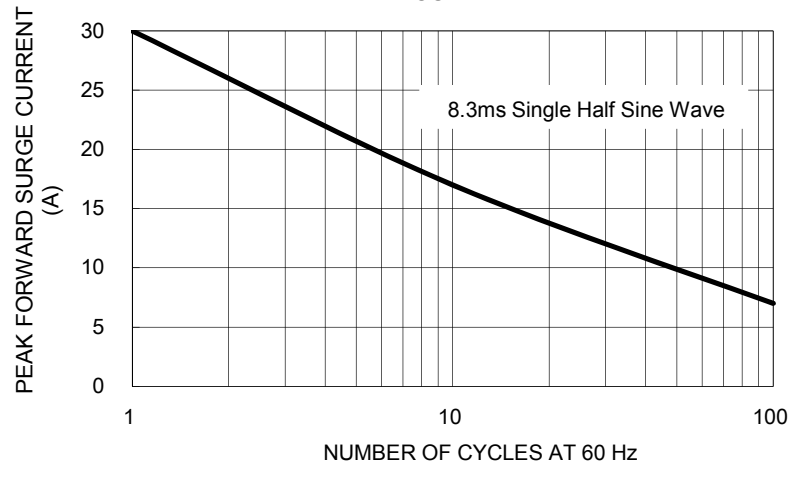


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

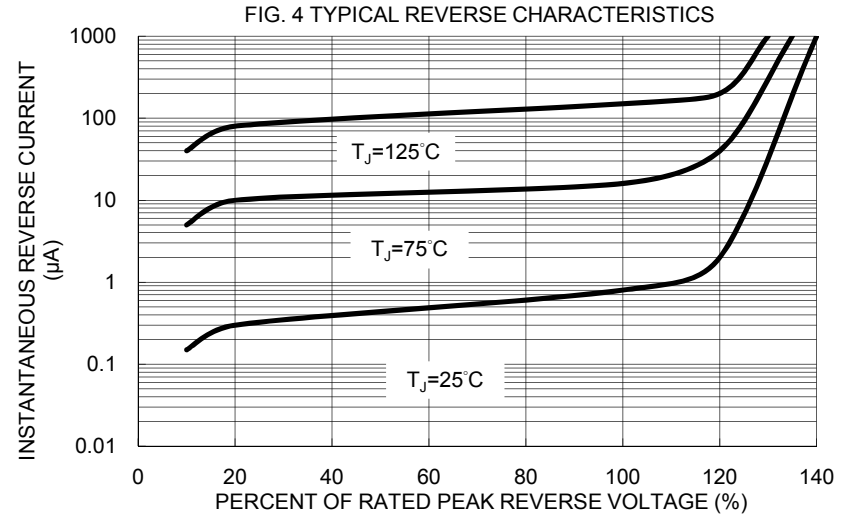


FIG. 5 TYPICAL JUNCTION CAPACITANCE

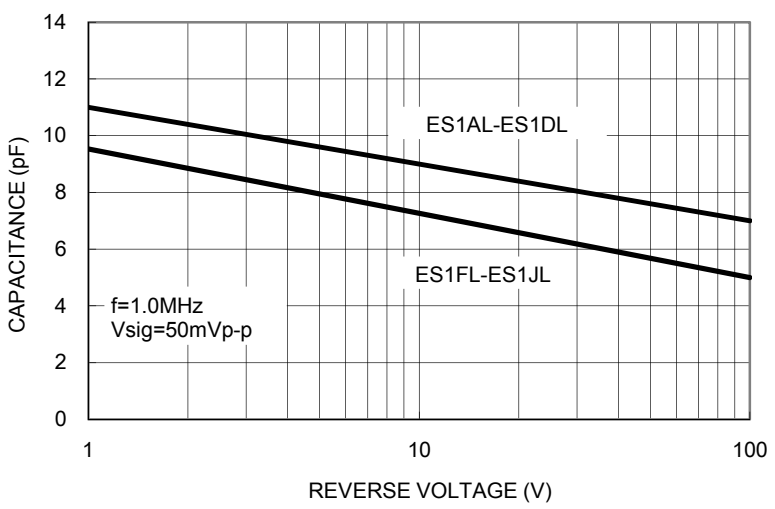
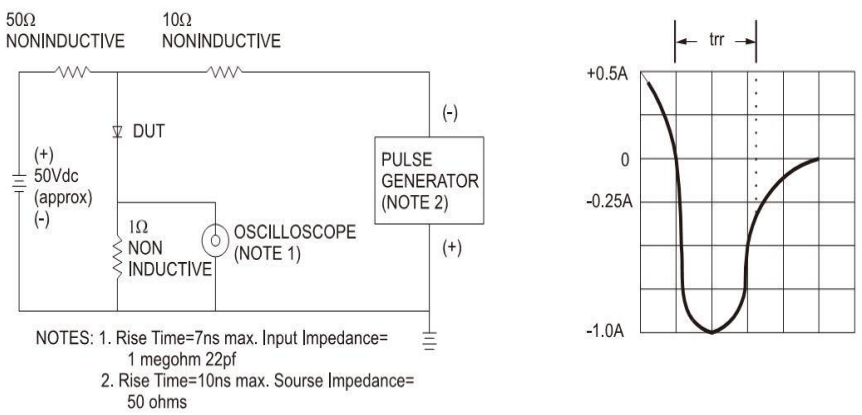
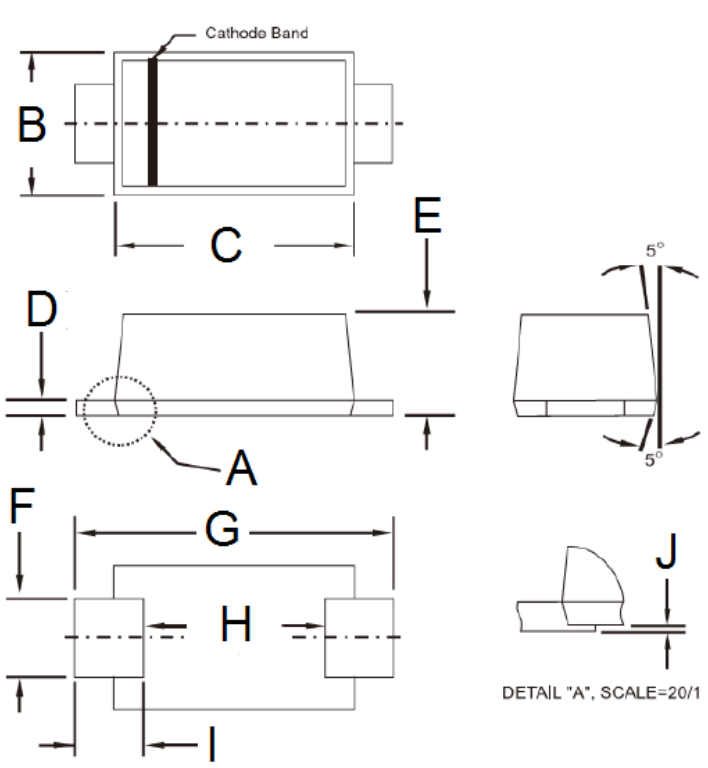


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



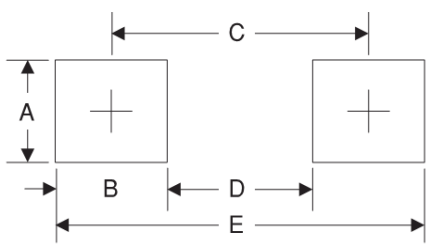
PACKAGE OUTLINE DIMENSIONS

Sub SMA



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
B	1.70	1.90	0.067	0.075
C	2.70	2.90	0.106	0.114
D	0.16	0.30	0.006	0.012
E	1.23	1.43	0.048	0.056
F	0.80	1.20	0.031	0.047
G	3.40	3.80	0.134	0.150
H	2.45	2.60	0.096	0.102
I	0.35	0.85	0.014	0.033
J	0.00	0.10	0.000	0.004

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.4	0.055
B	1.2	0.047
C	3.1	0.122
D	1.9	0.075
E	4.3	0.169

MARKING DIAGRAM

P/N = Marking Code
G = Green compound Code
YW = Date Code
F = Factory Code

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ES1AL ES1BL ES1CL ES1DL ES1FL ES1GL ES1HL ES1JL ES1JL R2 ES1JL RQ ES1DL RQ ES1DLHR2 ES1DL R2 ES1DL R3G ES1DLHRQG ES1DL R2G ES1DLHR3G ES1DLHR2G ES1DL RQG ES1GL R2 ES1BLHR2G ES1ALHRQG ES1CL R2 ES1HLHR2G ES1FL RQG ES1CL R2G ES1FLHRQG ES1CLHR3G ES1BL RQG ES1HLHRQG ES1GL R3G ES1ALHR3G ES1HL R3G ES1AL R2G ES1BLHRQG ES1BL R3G ES1JLHR3G ES1HLHR3G ES1HL R2G ES1JL R2G ES1AL R3G ES1CLHRQG ES1BL R2 ES1JLHR2G ES1FLHR2G ES1GL R2G ES1CL R3G ES1BLHR3G ES1FL R2G ES1ALHR2G ES1JLHRQG ES1AL RQG ES1GLHRQG ES1HLHR3 ES1FL R2 ES1HL R2 ES1GL RQG ES1GLHR2G ES1HL RQG ES1CL RQ ES1CLHR2G ES1FL R3G ES1BL R2G ES1JL RQG ES1FLHR3G ES1CL RQG ES1JL R3G ES1GLHR3G ES1AL R2 ES1DL R3 ES1HL R3 ES1CL R3 ES1AL R3 ES1FL R3 ES1BL R3 ES1GLHM2G ES1JLHRVG ES1JLHRHG ES1ALHRVG ES1JL RVG ES1JLHM2G ES1GL M2G ES1FL RUG ES1GL RFG ES1BLHRUG ES1CL RVG ES1FLHRVG ES1BL RVG ES1AL RVG ES1JLHRUG ES1CLHRVG ES1DL RVG ES1GL RUG ES1JL M2G ES1JL RUG ES1DL RUG ES1DLHRUG ES1DL M2G ES1FL RVG ES1GL RVG