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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## High Efficient Surface Mount Rectifiers

### FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Low power loss, high efficiency
- Fast switching for high efficiency
- 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



**Sub SMA**

### MECHANICAL DATA

**Case:** Sub SMA

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - green compound (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:** 0.019 g (approximately)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	HS 1AL	HS 1BL	HS 1DL	HS 1FL	HS 1GL	HS 1JL	HS 1KL	HS 1ML	UNIT	
Marking code		HAL	HBL	HDL	HFL	HGL	HJL	HKL	HML		
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V	
Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	420	560	700	V	
Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	600	800	1000	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 VR $T_J=25^{\circ}\text{C}$ $T_J=125^{\circ}\text{C}$	$I_R$	5 150								$\mu\text{A}$	
Typical junction capacitance (Note 2)	$C_j$	20					15				pF
Maximum reverse recovery time (Note 3)	$T_{rr}$	50					75				ns
Typical thermal resistance	$R_{\theta JA}$	100								$^{\circ}\text{C}/\text{W}$	
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: Measured at 1 MHz and Applied  $V_R=4.0$  Volts.

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

ORDERING INFORMATION					
PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
HS1xL (Note 1)	Prefix "H"	RU	Suffix "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 (HS1AL) to 1000V (HS1ML)

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
HS1JL RU	HS1JL		RU		
HS1JL RUG	HS1JL		RU	G	Green compound
HS1JLHRU	HS1JL	H	RU		AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

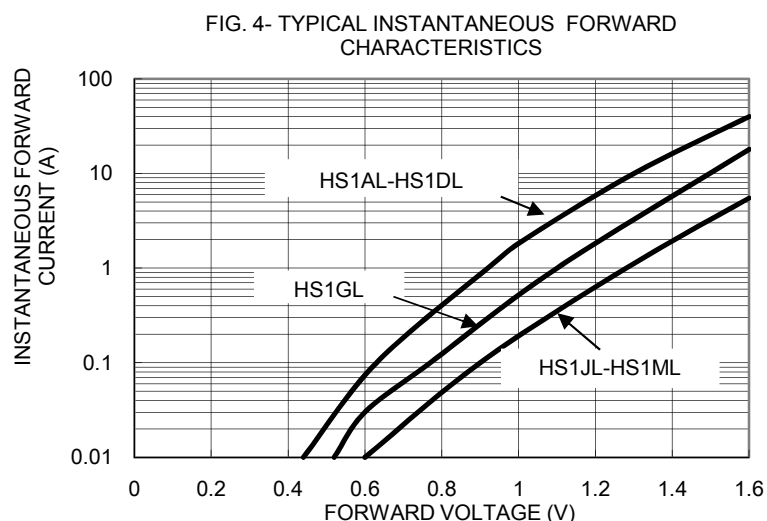
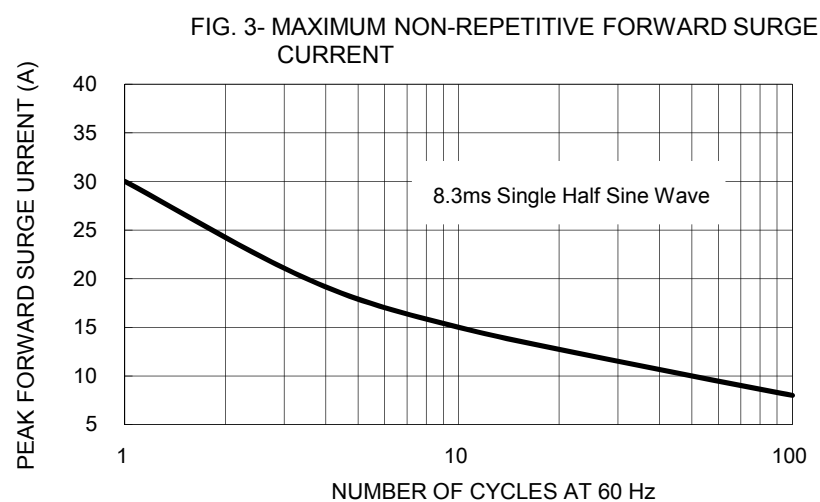
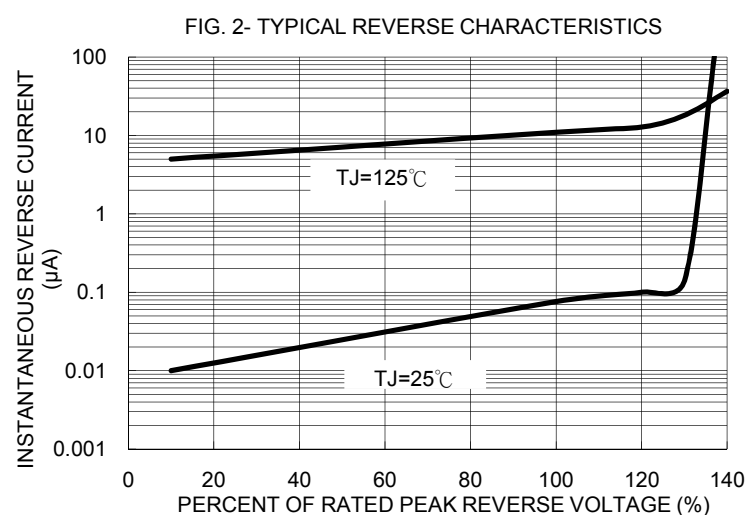
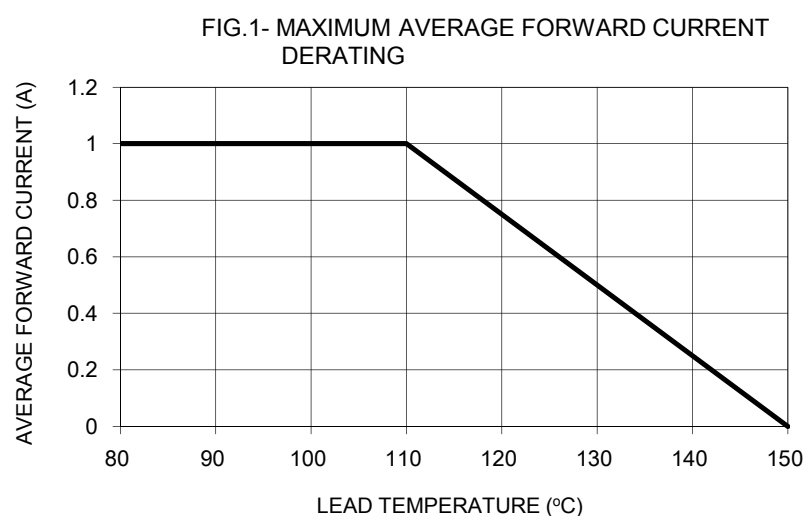


FIG. 5- TYPICAL JUNCTION CAPACITANCE

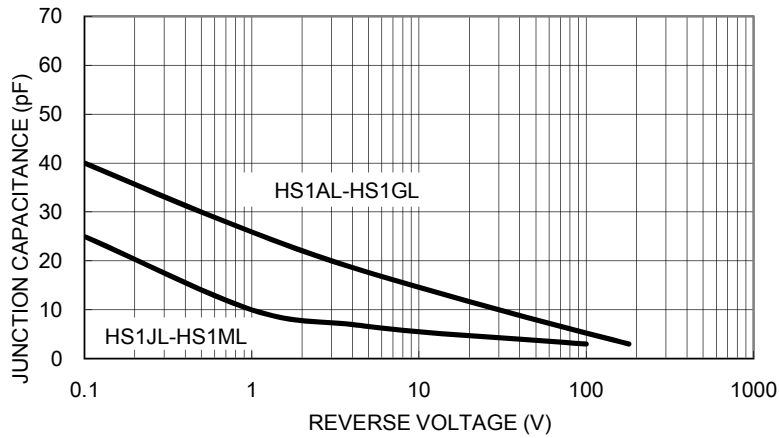
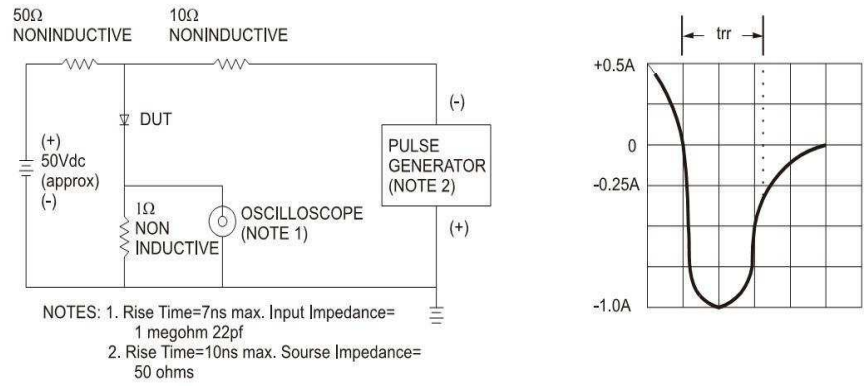
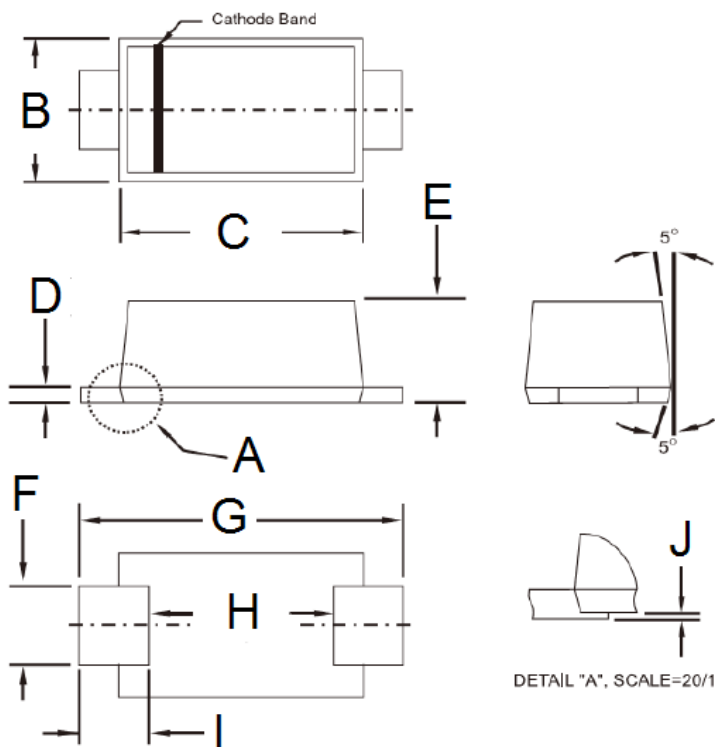


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

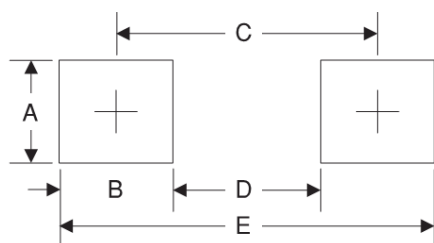


**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
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
- YW = Date Code
- F = Factory Code

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