

## 1A, 20V - 150V Schottky Barrier Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

### MECHANICAL DATA

- Case: Sub SMA
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.019g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	1	A
$V_{RRM}$	20 - 150	V
$I_{FSM}$	30	A
$T_{JMAX}$	125, 150	°C
Package	Sub SMA	
Configuration	Single die	



Sub SMA



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SS 12L H	SS 13L H	SS 14L H	SS 15L H	SS 16L H	SS 19L H	SS 110L H	SS 115L H	UNIT	
Marking code on the device		12L	13L	14L	15L	16L	19L	10L	A5L		
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	90	100	150	V	
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V	
Forward current	$I_F$	1								A	
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	30								A	
Critical rate of rise of off-state voltage	dV/dt	10,000								V/ $\mu\text{s}$	
Junction temperature	$T_J$	- 55 to +125			- 55 to +150					°C	
Storage temperature	$T_{STG}$	- 55 to +150									°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	45	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	100	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)								
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>		
Forward voltage <sup>(1)</sup>	SS12LH	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.385	V		
	SS13LH			-	0.430	V		
	SS14LH			-	0.510	V		
	SS15LH SS16LH			-	0.580	V		
	SS19LH SS110LH			-	0.700	V		
	SS115LH			-	0.750	V		
	SS12LH	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		-	0.450	V		
	SS13LH			-	0.500	V		
	SS14LH			-	0.550	V		
	SS15LH SS16LH			-	0.700	V		
	SS19LH SS110LH			-	0.800	V		
	SS115LH			-	0.900	V		
	Reverse current @ rated $V_R$ <sup>(2)</sup>	SS12LH SS13LH SS14LH SS15LH SS16LH		$T_J = 25^\circ\text{C}$	$I_R$	-	400	$\mu\text{A}$
		SS19LH SS110LH SS115LH		-		50	$\mu\text{A}$	
SS12LH		$T_J = 100^\circ\text{C}$	-	8		mA		
SS13LH SS14LH SS15LH SS16LH			-	6		mA		
SS19LH SS110LH SS115LH			-	-		mA		
SS12LH SS13LH SS14LH SS15LH SS16LH		$T_J = 125^\circ\text{C}$	-	-		mA		
SS19LH SS110LH SS115LH			-	0.5		mA		

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SS1xLH	Sub SMA	10,000 / Tape & Reel

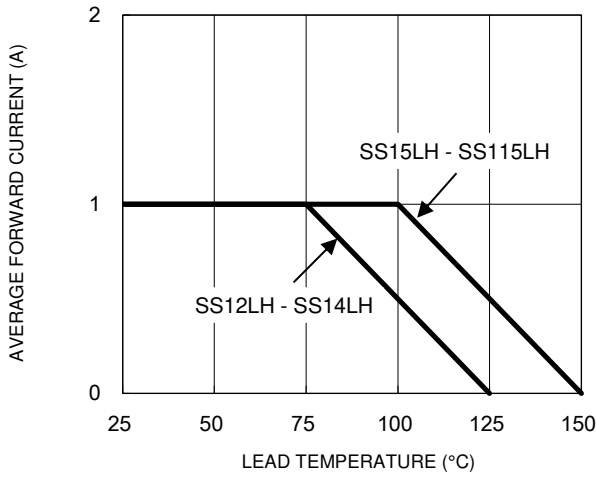
**Notes:**

1. “x” defines voltage from 20V(SS12LH) to 150V(SS115LH)

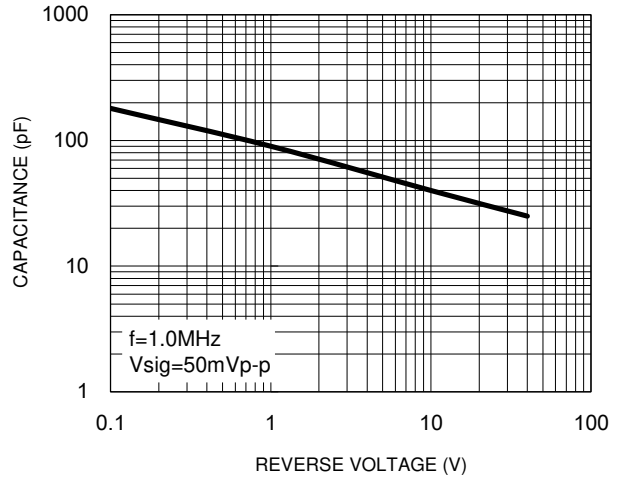
**CHARACTERISTICS CURVES**

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

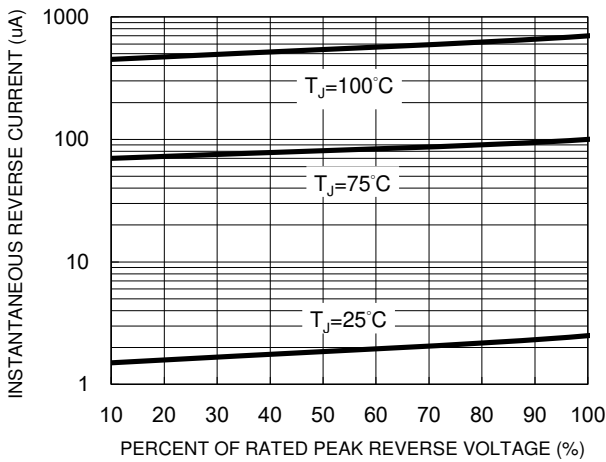
**Fig.1 Forward Current Derating Curve**



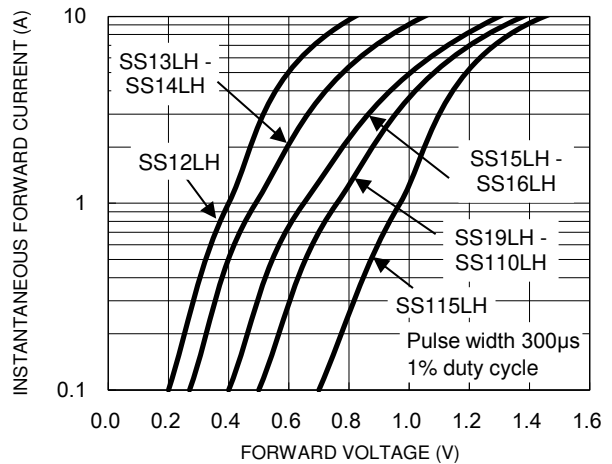
**Fig.2 Typical Junction Capacitance**



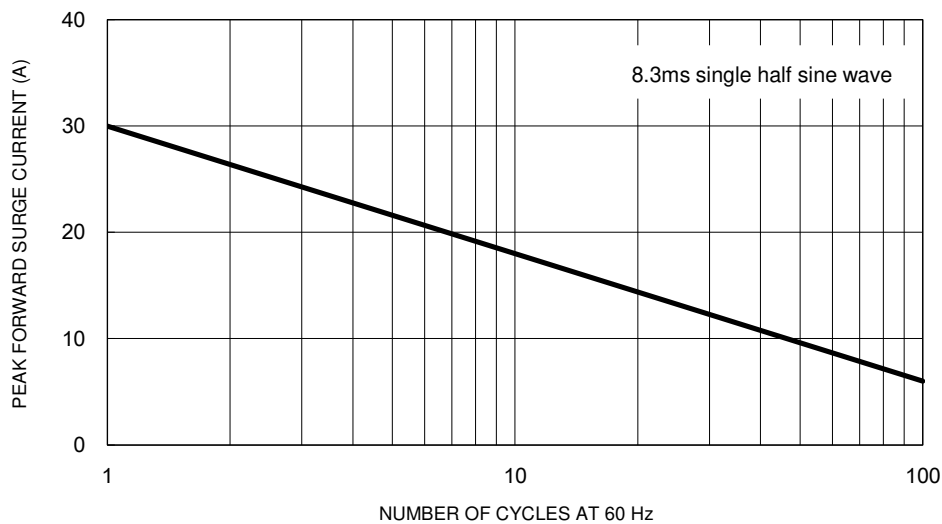
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



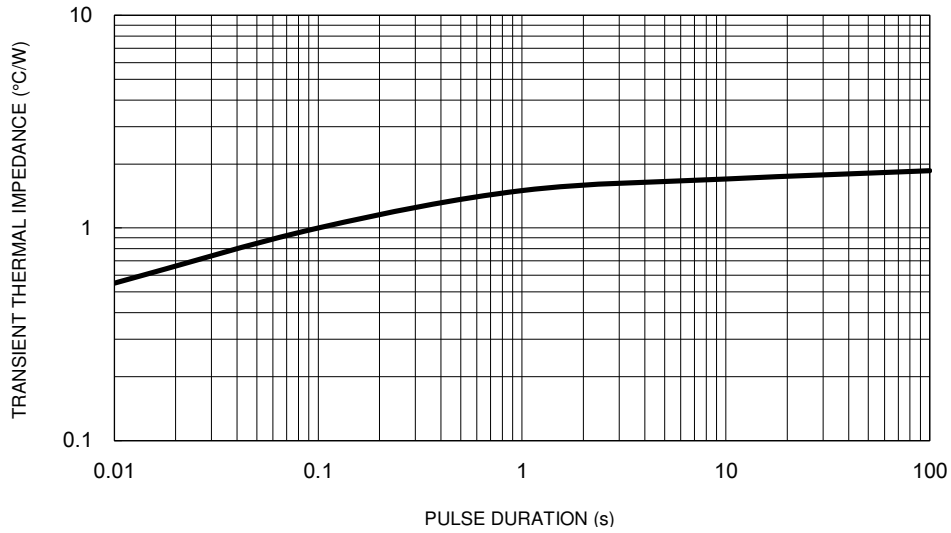
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

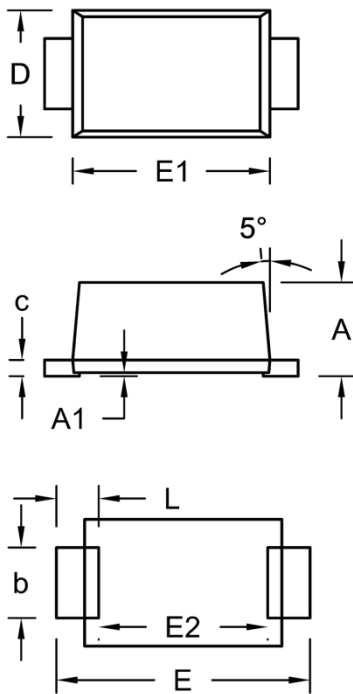
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Impedance**



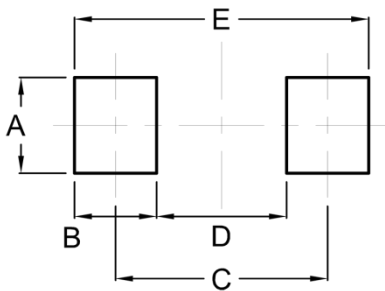
**PACKAGE OUTLINE DIMENSIONS**

Sub SMA



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.23	1.43	0.048	0.056
A1	0.00	0.10	0.000	0.004
b	0.80	1.20	0.031	0.047
c	0.16	0.30	0.006	0.012
D	1.70	1.90	0.067	0.075
E	3.40	3.80	0.134	0.150
E1	2.70	2.90	0.106	0.114
E2	2.45	2.60	0.096	0.102
L	0.35	0.85	0.014	0.033

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	1.20	0.047
C	3.10	0.122
D	1.90	0.075
E	4.30	0.169

**MARKING DIAGRAM**



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

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