

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/ μs	
Junction temperature	T_J	- 55 to +125			- 55 to +150					°C	
Storage temperature	T_{STG}	- 55 to +150									°C

THERMAL PERFORMANCE

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

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

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

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE⁽¹⁾	PACKAGE	PACKING
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

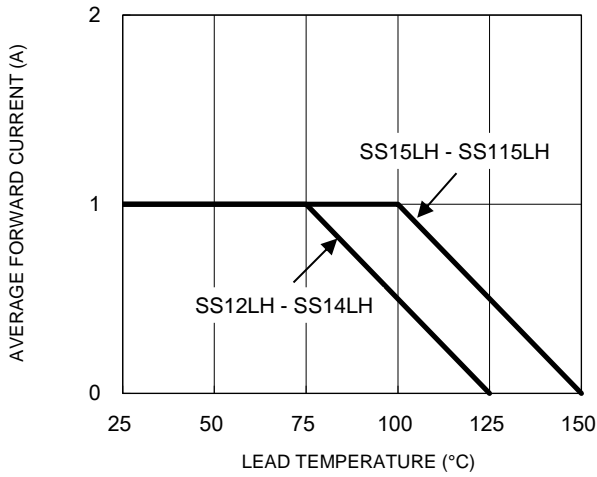


Fig.2 Typical Junction Capacitance

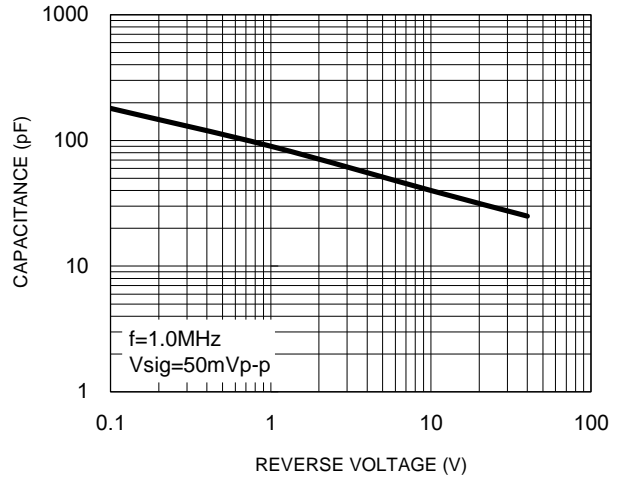


Fig.3 Typical Reverse Characteristics

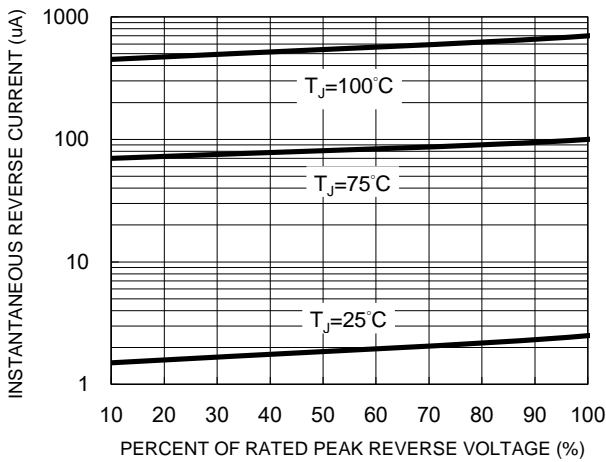


Fig.4 Typical Forward Characteristics

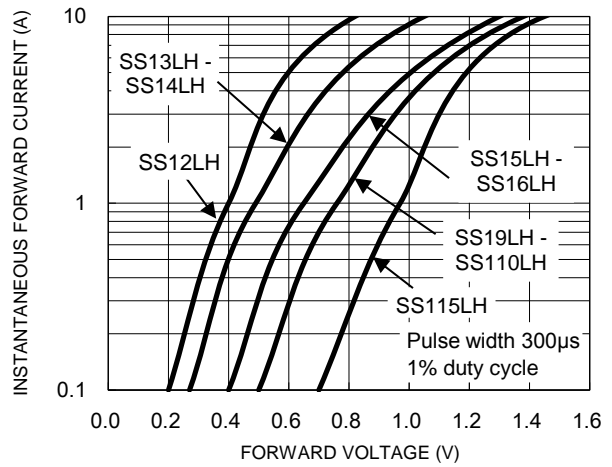
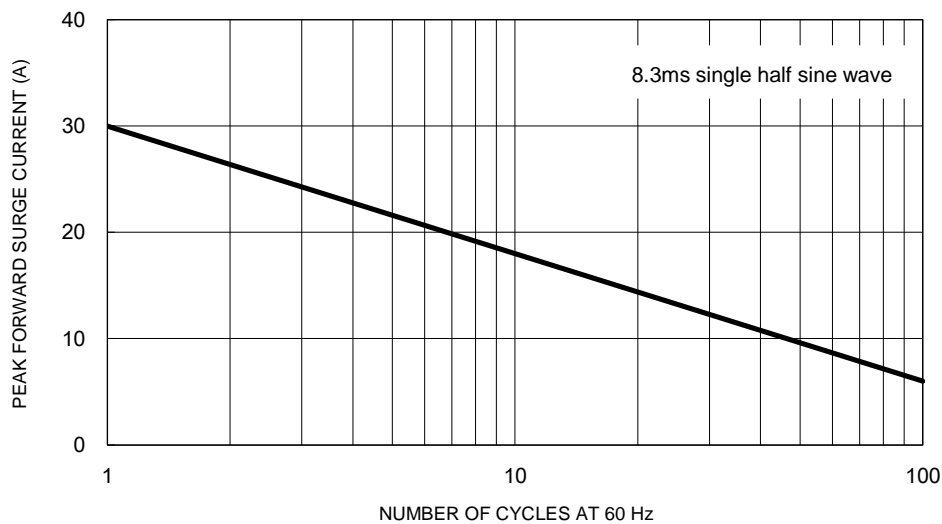


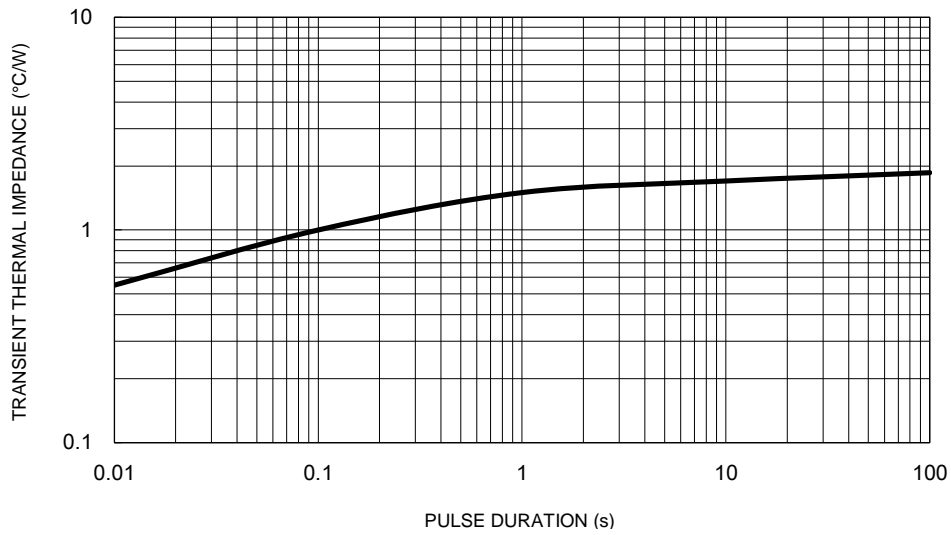
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

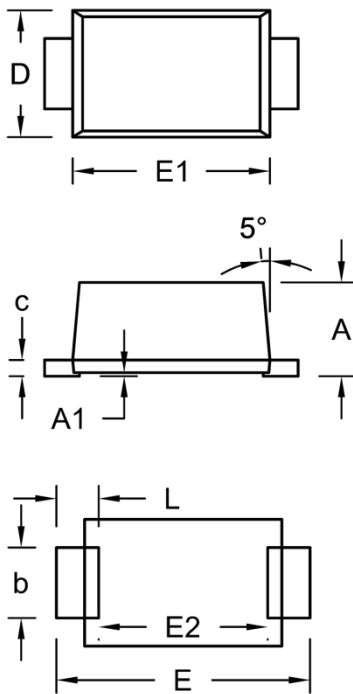
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



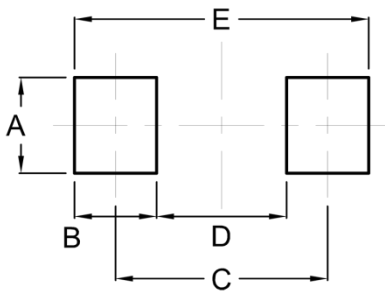
PACKAGE OUTLINE DIMENSIONS

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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