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

FEATURES

- AEC-Q101 qualified
- Ideal for automated placement
- Compact package size, profile <0.85mm
- High surge current capability
- Low power loss, high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	20 - 150	V
I_{FSM}	30	A
$T_{J\ MAX}$	125, 150	°C
Package	SOD-123HE	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-123HE

APPLICATIONS

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

MECHANICAL DATA

- Case: SOD-123HE
- 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: 0.021g (approximately)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SS12 LSH	SS13 LSH	SS14 LSH	SS16 LSH	SS110 LSH	SS115 LSH	UNIT
Marking code on the device		12LS	13LS	14LS	16LS	10LS	A5LS	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	60	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	42	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
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-case thermal resistance	$R_{\Theta JC}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	70	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SS12LSH	I_F = 0.5A, T_J = 25°C	V_F	-	-	V
		I_F = 1.0A, T_J = 25°C		-	0.45	V
	SS13LSH	I_F = 0.5A, T_J = 25°C		-	-	V
		I_F = 1.0A, T_J = 25°C		-	0.50	V
	SS14LSH	I_F = 0.5A, T_J = 25°C		-	0.51	V
		I_F = 1.0A, T_J = 25°C		-	0.55	V
	SS16LSH	I_F = 0.5A, T_J = 25°C		-	0.58	V
		I_F = 1.0A, T_J = 25°C		-	0.70	V
	SS110LSH	I_F = 0.5A, T_J = 25°C		-	0.70	V
		I_F = 1.0A, T_J = 25°C		-	0.80	V
	SS115LSH	I_F = 0.5A, T_J = 25°C		-	0.75	V
		I_F = 1.0A, T_J = 25°C		-	0.90	V
Reverse current @ rated V_R[2]	SS12LSH SS13LSH SS14LSH SS16LSH	T_J = 25°C	I_R	-	0.4	mA
		T_J = 125°C		-	-	mA
	SS110LSH SS115LSH	T_J = 25°C		-	0.05	mA
		T_J = 125°C		-	0.5	mA
Junction capacitance		1MHz, V_R = 4.0V	C_J	80	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
SS1xLSH	SOD-123HE	10,000 / Tape & Reel

Notes:

1. “x” defines voltage from 20V(SS12LSH) to 150V(SS115LSH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

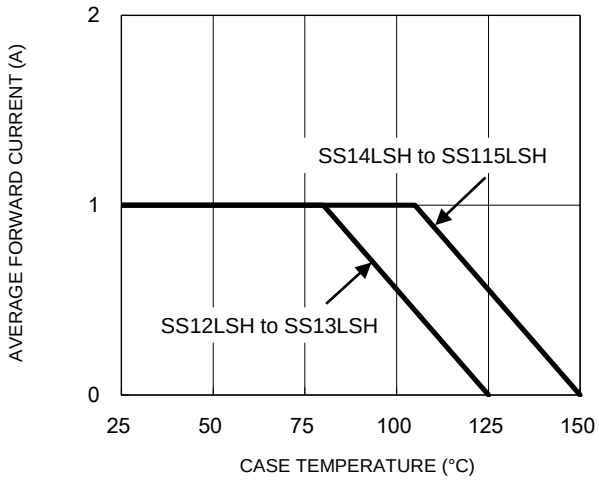


Fig.2 Typical Junction Capacitance

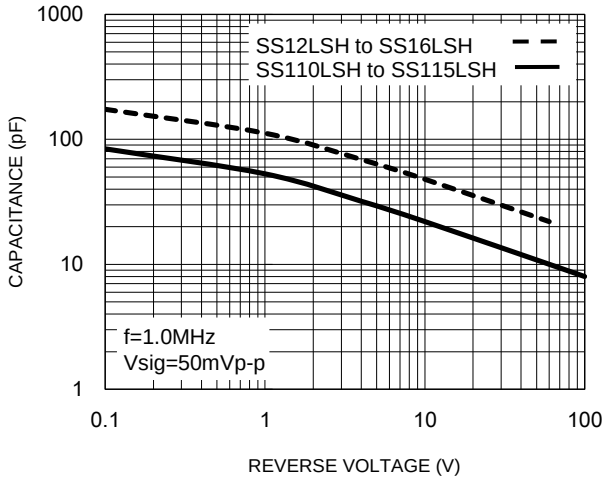


Fig.3 Typical Reverse Characteristics

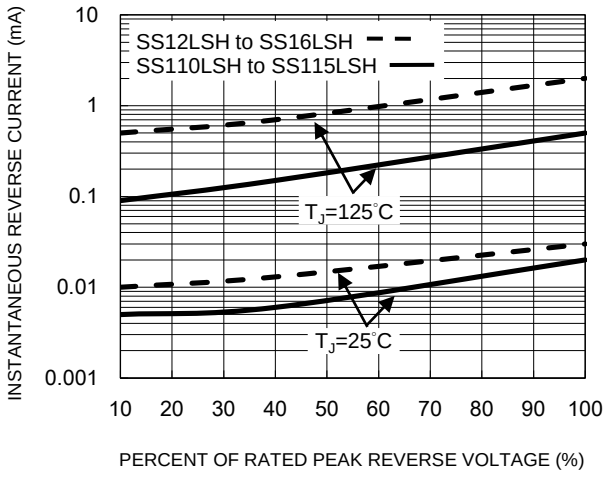


Fig.4 Typical Forward Characteristics

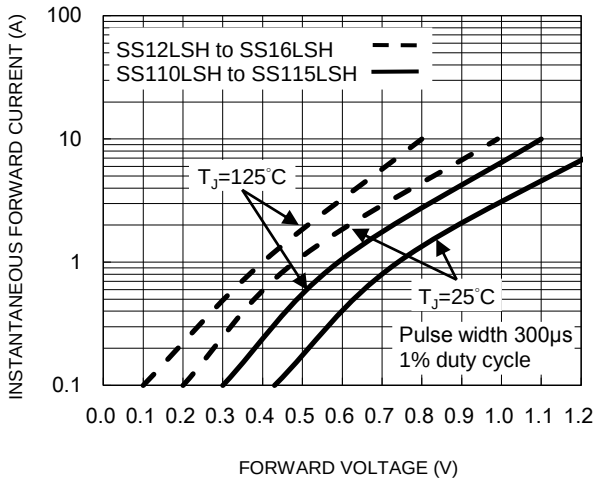
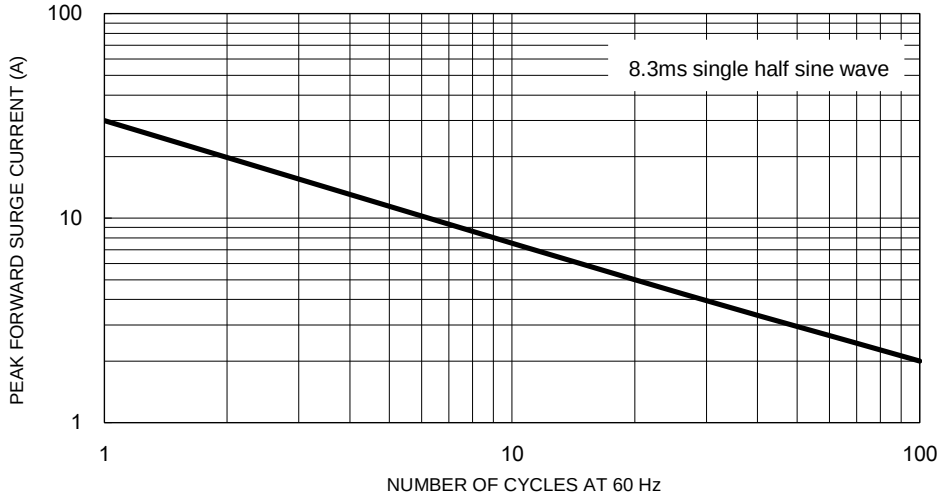
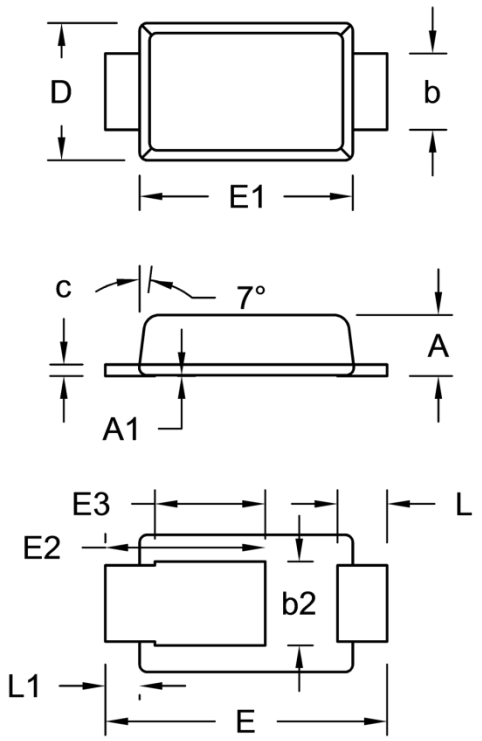


Fig.5 Maximum Non-Repetitive Forward Surge Current



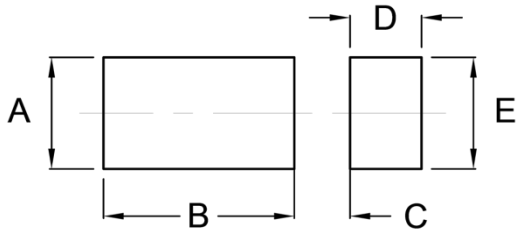
PACKAGE OUTLINE DIMENSIONS

SOD-123HE



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.75	0.85	0.030	0.033
A1	0.00	0.02	0.000	0.001
b	0.85	1.15	0.033	0.045
b2	0.95	1.25	0.037	0.049
c	0.10	0.20	0.004	0.008
D	1.65	1.95	0.065	0.077
E	3.50	3.90	0.138	0.154
E1	2.60	3.00	0.102	0.118
E2	1.90	2.30	0.075	0.091
E3	1.35	1.55	0.053	0.061
L	0.55	0.75	0.022	0.030
L1	0.35	0.55	0.014	0.022

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	2.40	0.094
C	0.70	0.028
D	0.90	0.035
E	1.40	0.055

MARKING DIAGRAM

P/N = Marking Code
YW = Date Code
F = Factory Code