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

FEATURES

- 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

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

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)

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

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)								
PARAMETER	**SYMBOL**	**SS12 LS**	**SS13 LS**	**SS14 LS**	**SS16 LS**	**SS110 LS**	**SS115 LS**	**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

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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]	SS12LS	I_F = 0.5A, T_J = 25°C	V_F	-	-	V
	SS13LS			-	-	V
	SS14LS			-	0.51	V
	SS16LS			-	0.58	V
	SS110LS			-	0.70	V
	SS115LS			-	0.75	V
	SS12LS	I_F = 1.0A, T_J = 25°C		-	0.45	V
	SS13LS			-	0.50	V
	SS14LS			-	0.55	V
	SS16LS			-	0.70	V
	SS110LS			-	0.80	V
	SS115LS			-	0.90	V
Reverse current @ rated V_R[2]	SS12LS SS13LS SS14LS SS16LS	T_J = 25°C	I_R	-	400	μA
	SS110LS SS115LS			-	50	μA
	SS12LS SS13LS SS14LS SS16LS	T_J = 125°C		-	-	mA
	SS110LS SS115LS			-	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
SS1xLS	SOD-123HE	10,000 / Tape & Reel

Notes:

1. “x” defines voltage from 20V(SS12LS) to 150V(SS115LS)

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CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

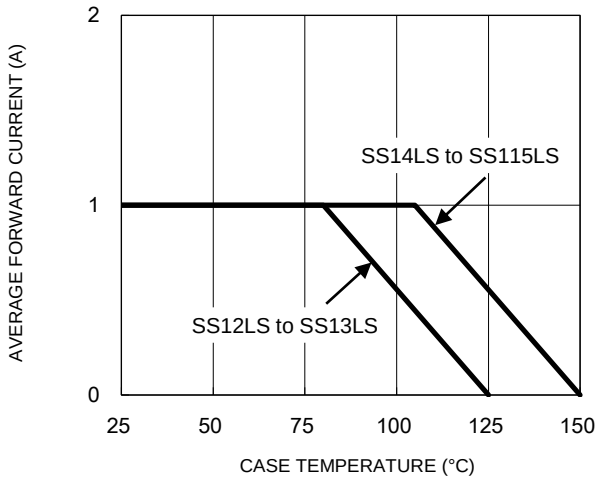


Fig.2 Typical Junction Capacitance

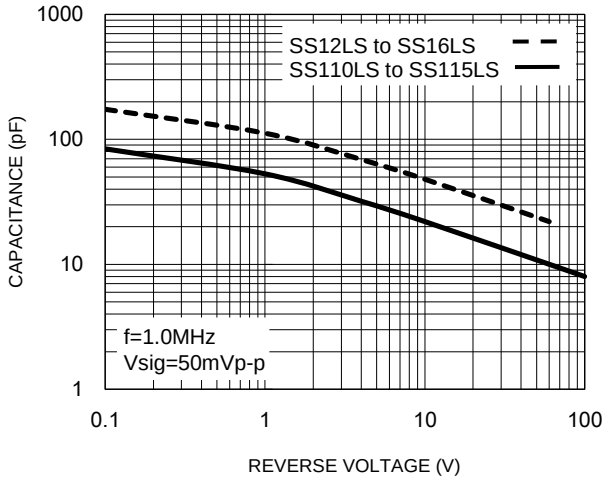


Fig.3 Typical Reverse Characteristics

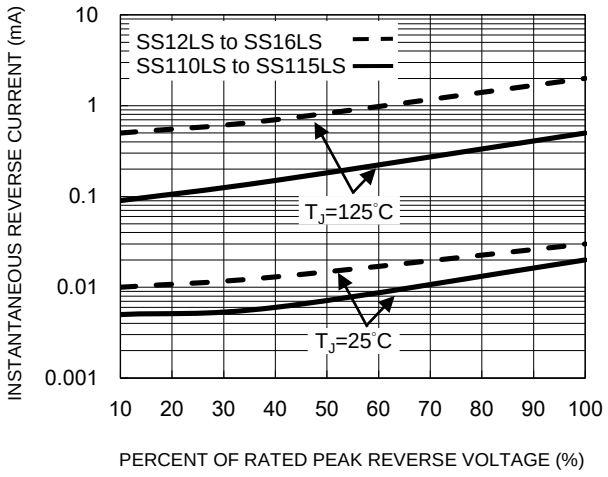


Fig.4 Typical Forward Characteristics

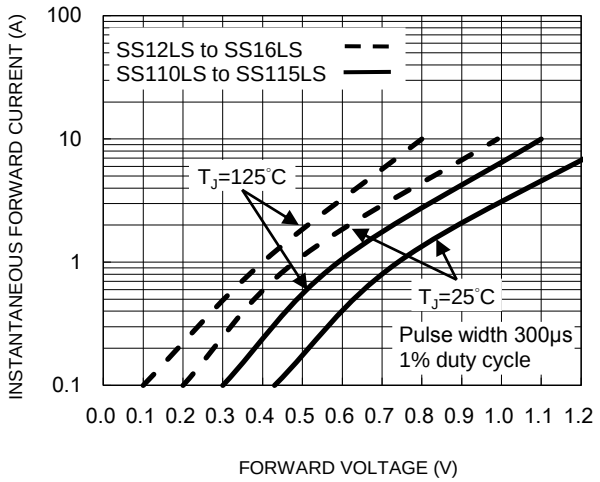
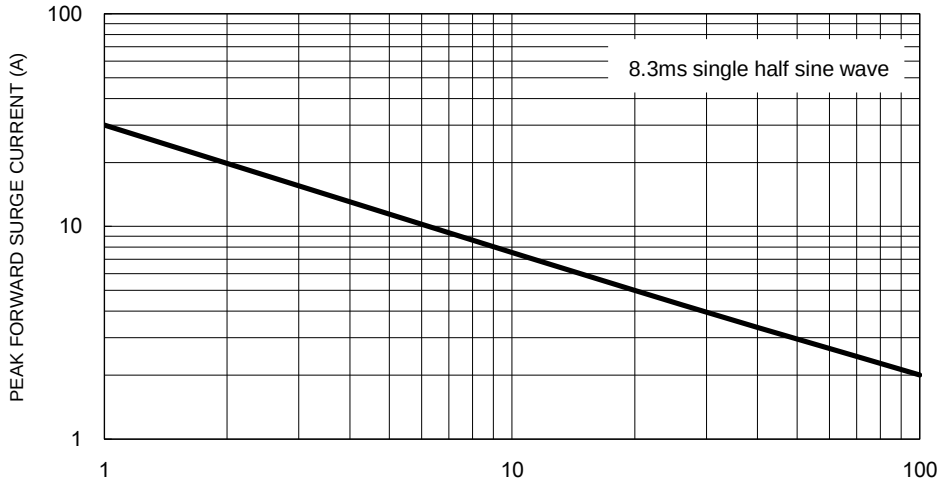


Fig.5 Maximum Non-Repetitive Forward Surge Current



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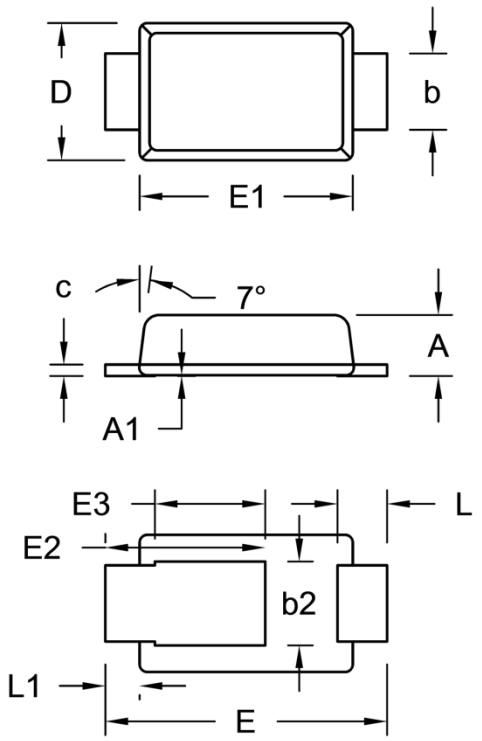
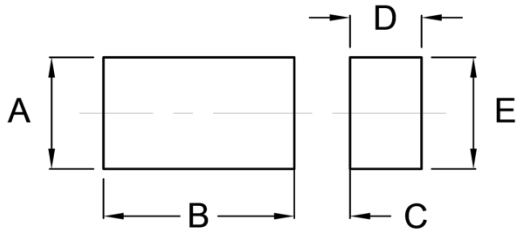
PACKAGE OUTLINE DIMENSIONS

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

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