

1A, 40V - 200V Schottky Barrier Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Ideal for automated placement
- Compact package size, profile <0.85mm
- Ultra low leakage current
- 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}	40 - 200	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	SOD-123HE	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SS1H4 LSH	SS1H6 LSH	SS1H10 LSH	SS1H15 LSH	SS1H20 LSH	UNIT
Marking code on the device		1H4LS	1H6LS	1H10LS	1H15LS	1H20LS	
Repetitive peak reverse voltage	V_{RRM}	40	60	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	28	42	70	105	140	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 +150					°C
Storage temperature	T_{STG}	- 55 to +150					°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	72	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	SS1H4LSH	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.65	V
	SS1H6LSH			-	0.70	V
	SS1H10LSH			-	0.80	V
	SS1H15LSH SS1H20LSH			-	0.85	V
Reverse current @ rated V_R ⁽²⁾	SS1H4LSH	$T_J = 25^\circ\text{C}$	I_R	-	1.0	μA
	SS1H6LSH	$T_J = 125^\circ\text{C}$		-	0.3	mA
	SS1H10LSH SS1H15LSH	$T_J = 25^\circ\text{C}$		-	1.0	μA
		$T_J = 125^\circ\text{C}$		-	0.2	mA
	SS1H20LSH	$T_J = 25^\circ\text{C}$		-	1.0	μA
		$T_J = 125^\circ\text{C}$		-	0.1	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
SS1HxLSH	SOD-123HE	10,000 / Tape & Reel

Notes:

1. "x" defines voltage from 40V(SS1H4LSH) to 200V(SS1H20LSH)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

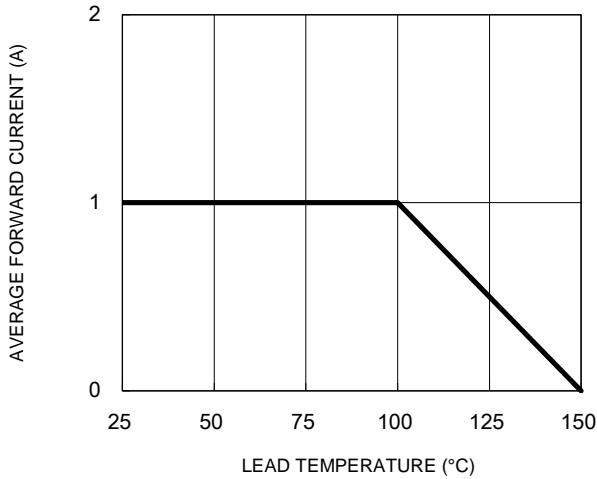


Fig.2 Typical Junction Capacitance

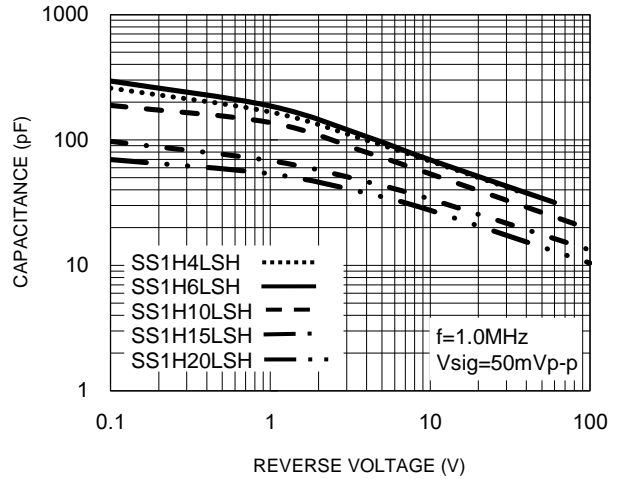


Fig.3 Typical Reverse Characteristics

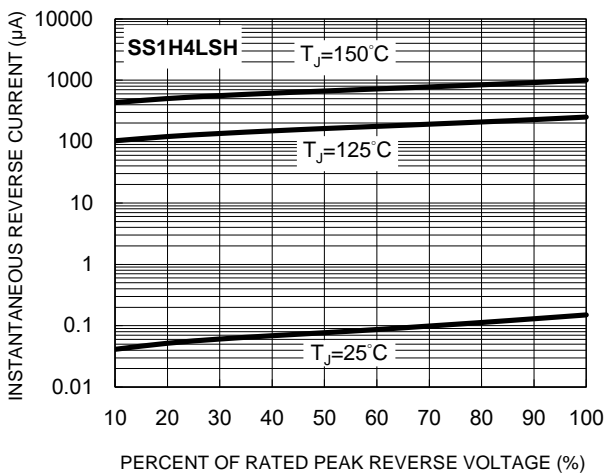


Fig.4 Typical Forward Characteristics

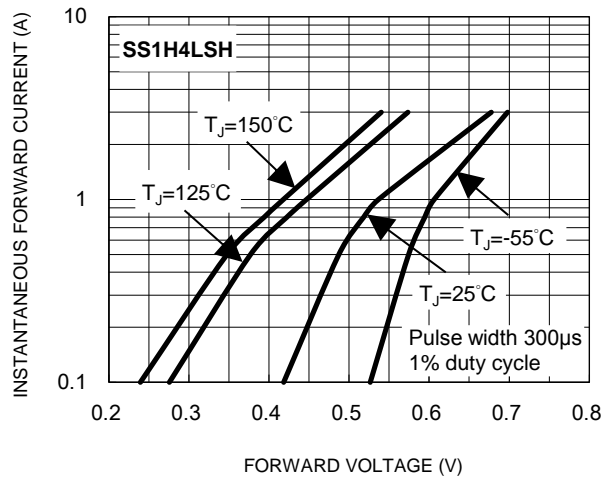


Fig.5 Typical Reverse Characteristics

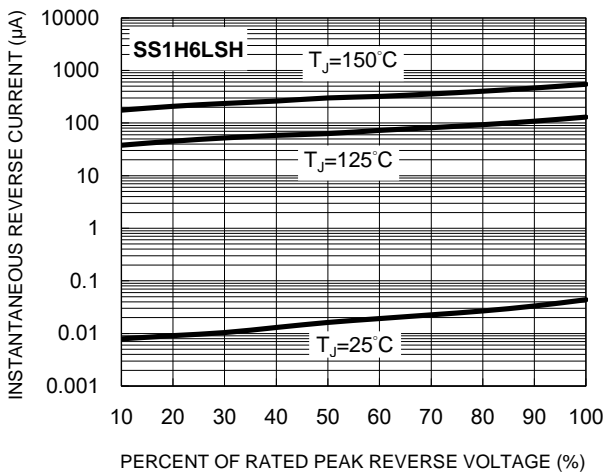
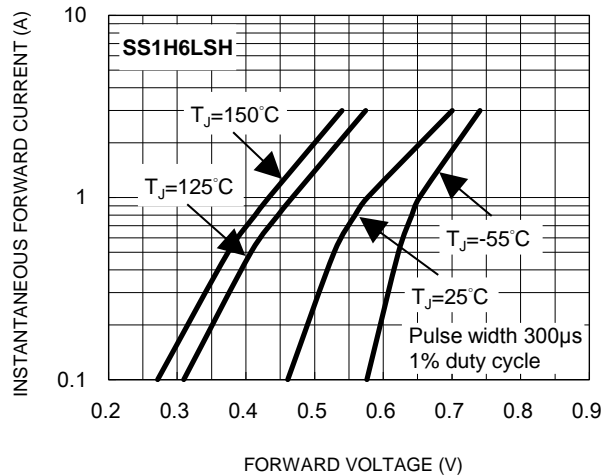


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.7 Typical Reverse Characteristics

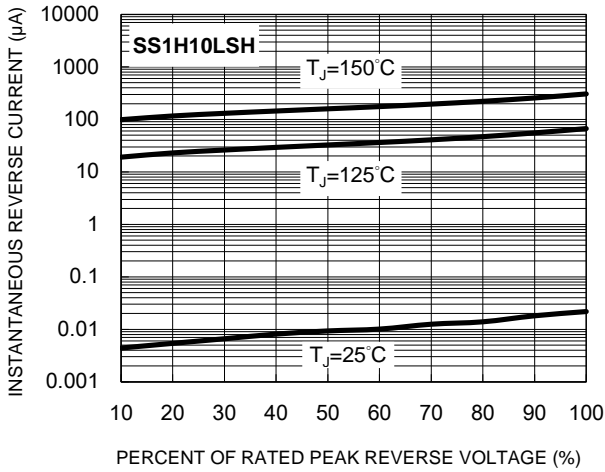


Fig.8 Typical Forward Characteristics

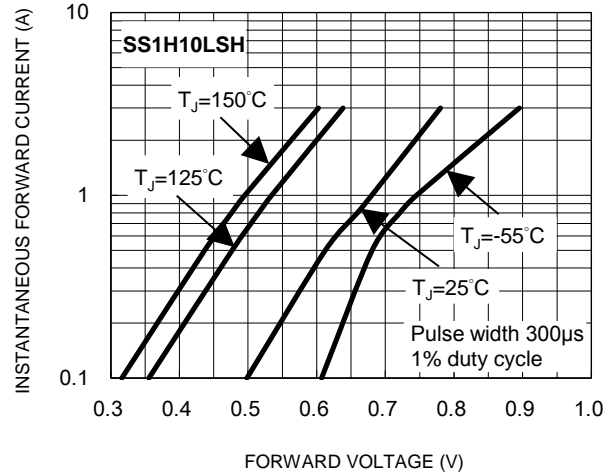


Fig.9 Typical Reverse Characteristics

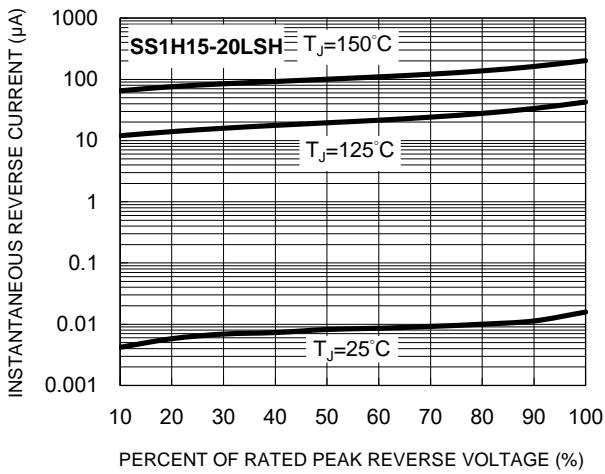


Fig.10 Typical Forward Characteristics

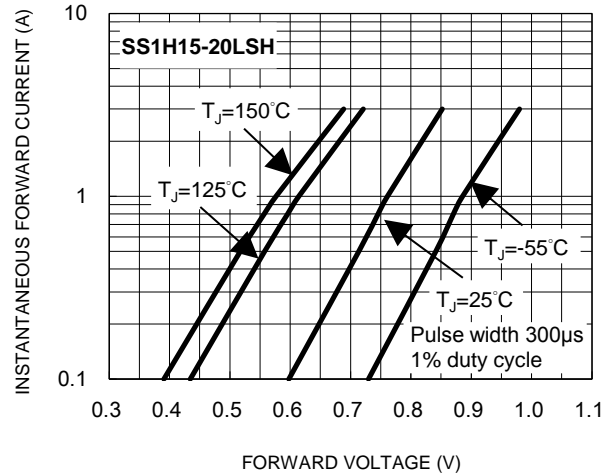
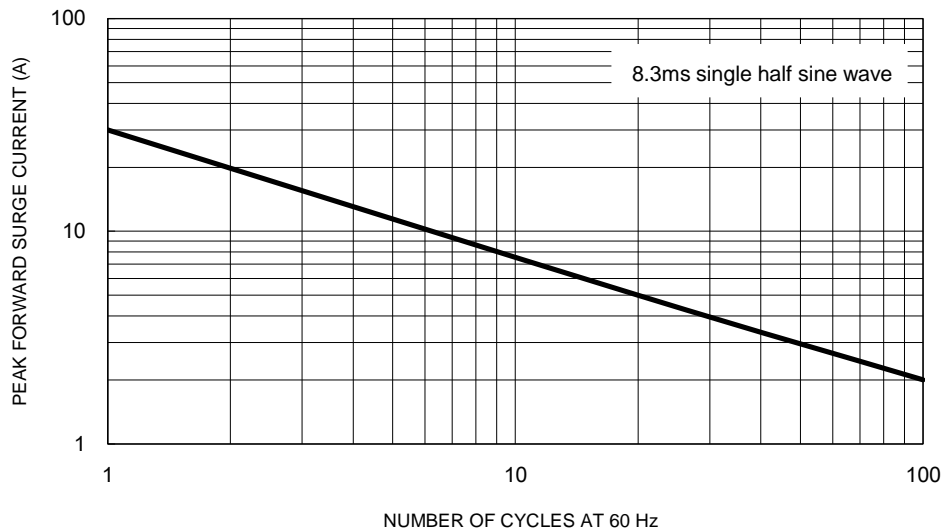
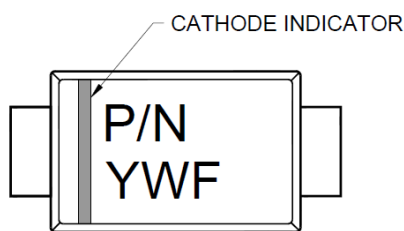
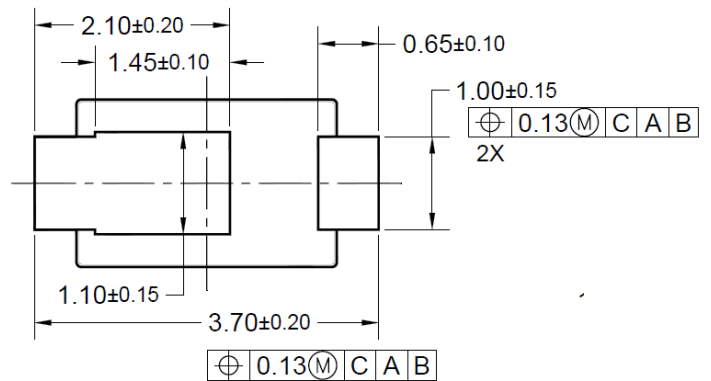
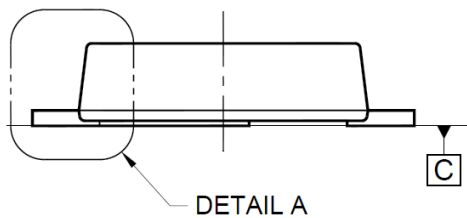
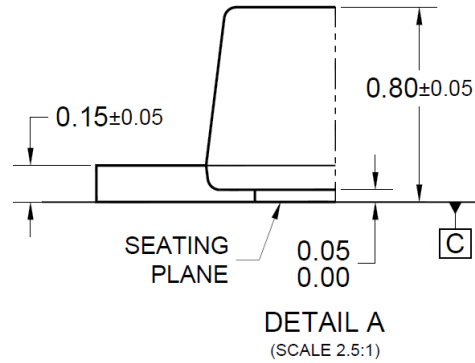
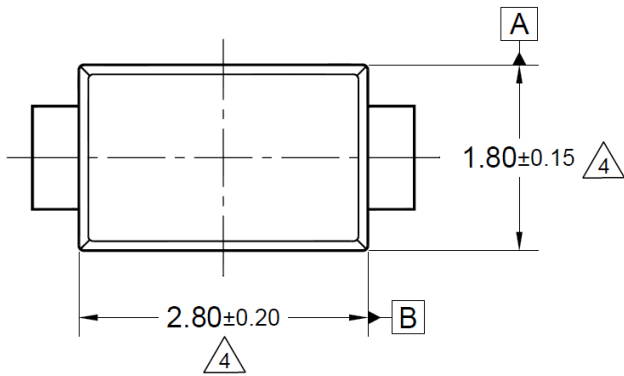


Fig.11 Maximum Non-Repetitive Forward Surge Current



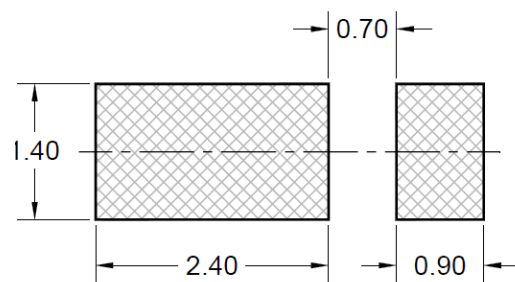
PACKAGE OUTLINE DIMENSIONS

SOD-123HE



MARKING DIAGRAM

P/N = MARKING CODE
YWF = DATE CODE
F = FACTORY CODE



SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
3. THERE IS NO EXISTING INDUSTRY STANDARD FOR THIS PACKAGE.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD123HE-038 REV A.

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