



## 3A, 45V - 60V Trench Schottky Surface Mount Rectifier

### FEATURES

- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ high efficiency
- High forward surge capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

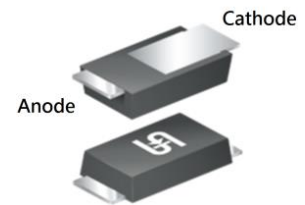
### APPLICATIONS

- 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: 0.022g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	45 - 60	V
$I_{FSM}$	60	A
$T_{J\ MAX}$	150	°C
Package	SOD-123HE	
Configuration	Single die	


**SOD-123HE**


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

PARAMETER	SYMBOL	TSSE3H45	TSSE3H60	UNIT
Marking code on the device		E3H45	E3H60	
Repetitive peak reverse voltage	$V_{RRM}$	45	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	32	42	V
Forward current	$I_F$	3		A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	60		A
Junction temperature	$T_J$	- 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	$R_{\theta JL}$	20	°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>	TSSE3H45	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.48	0.57	V
		$I_F = 3\text{A}, T_J = 125^\circ\text{C}$		0.42	0.50	V
	TSSE3H60	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$		0.56	0.60	V
		$I_F = 3\text{A}, T_J = 125^\circ\text{C}$		0.50	0.53	V
Reverse current @ rated $V_R$ <sup>(2)</sup>		$T_J = 25^\circ\text{C}$	$I_R$	-	100	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		-	25	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</b> <sup>(1)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
TSSE3Hx	SOD-123HE	10,000 / Tape & Reel

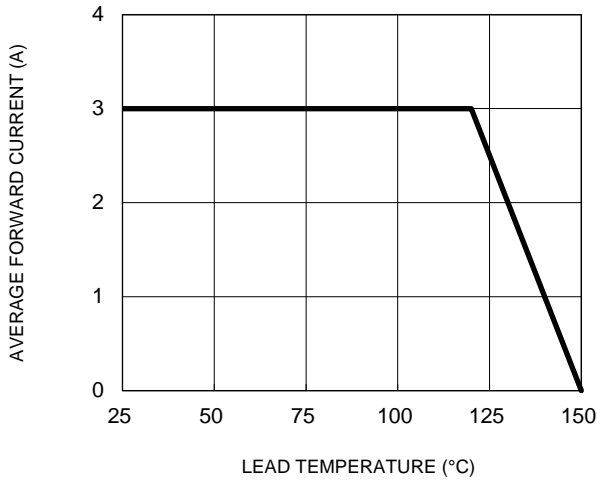
**Notes:**

1. "x" defines voltage from 45V(TSSE3H45) to 60V(TSSE3H60)

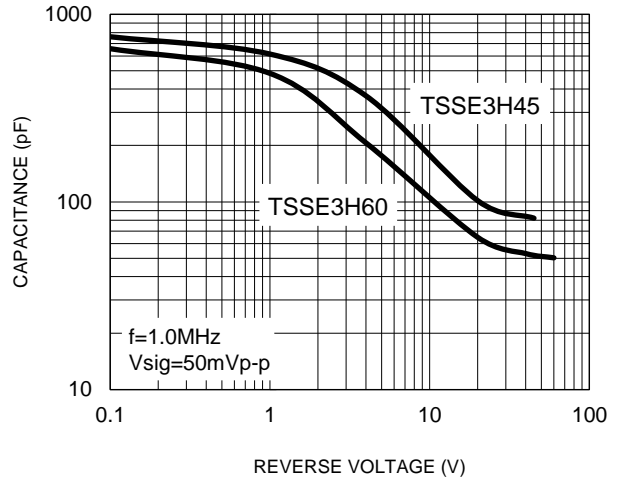
**CHARACTERISTICS CURVES**

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

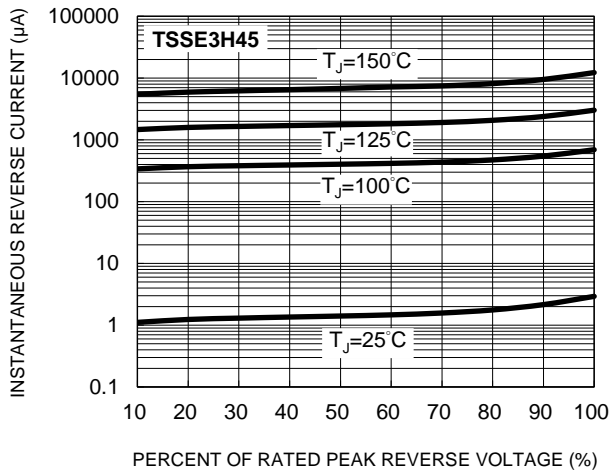
**Fig.1 Forward Current Derating Curve**



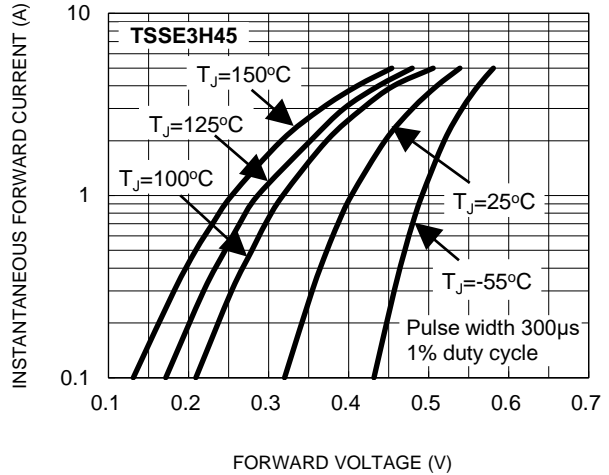
**Fig.2 Typical Junction Capacitance**



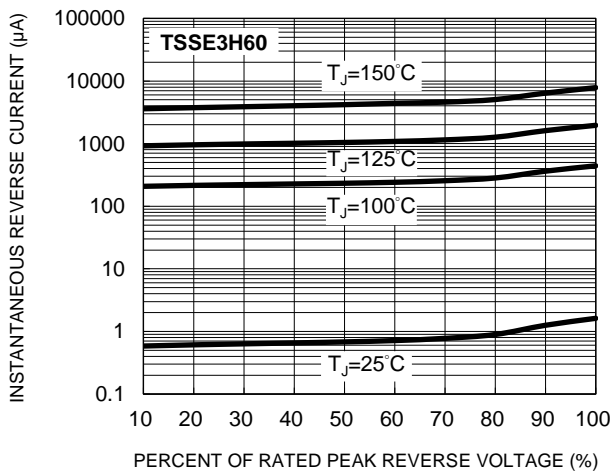
**Fig.3 Typical Reverse Characteristics**



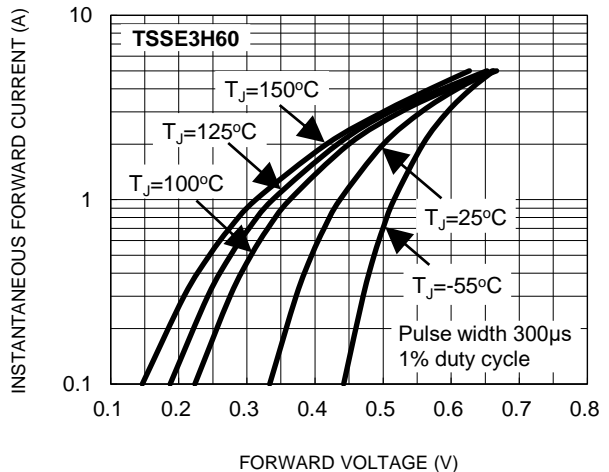
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Reverse Characteristics**

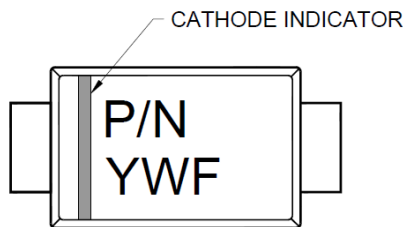
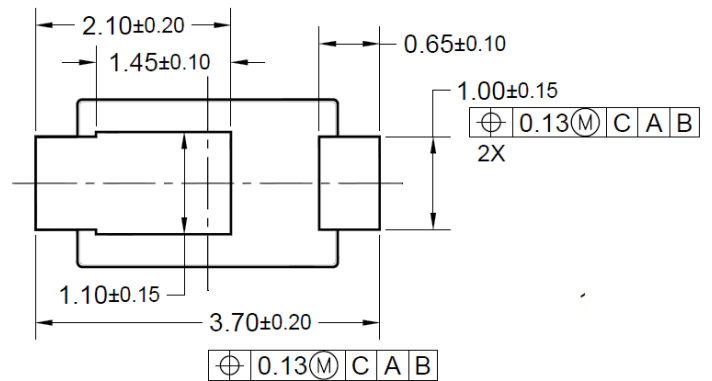
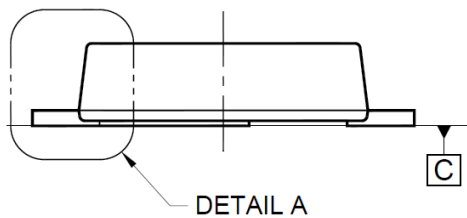
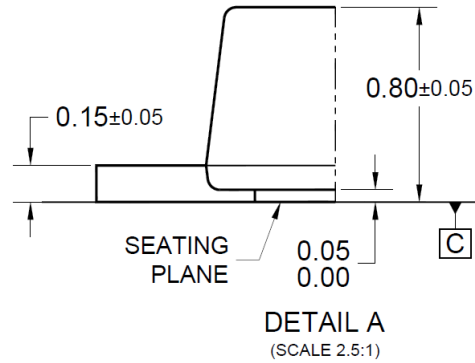
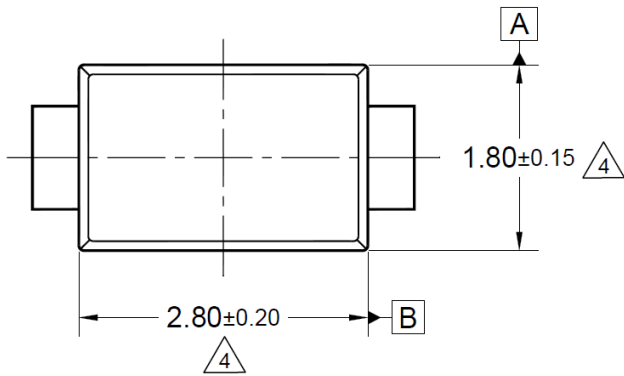


**Fig.6 Typical Forward Characteristics**



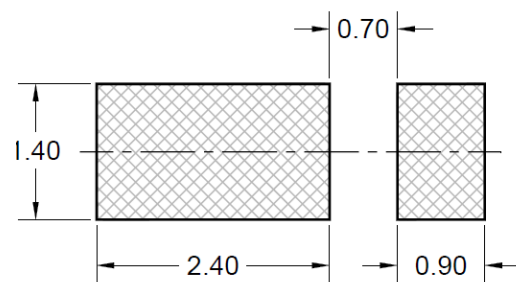
**PACKAGE OUTLINE DIMENSIONS**

**SOD-123HE**



MARKING DIAGRAM

P/N = MARKING CODE  
 YW = 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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