

## 3A, 45V - 60V Trench Schottky Rectifiers

### FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ high efficiency
- High forward surge capability
- Halogen-free according to IEC 61249-2-21 definition
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC



**SOD123HE**



### TYPICAL APPLICATIONS

Trench Schottky barrier rectifiers are designed for high frequency miniature switched mode power supplies such as adapters, lighting and on-board DC/DC converters, USB power delivery.

### MECHANICAL DATA

**Case:** SOD123HE

Molding compound, UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.022 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25°C unless otherwise noted)								
PARAMETER			SYMBOL	TSSE3H45		TSSE3H60		UNIT
Marking code				E3H45		E3H60		
Maximum repetitive peak reverse voltage			V <sub>RRM</sub>	45		60		V
Maximum RMS voltage			V <sub>RMS</sub>	32		42		V
Maximum average forward rectified current			I <sub>F(AV)</sub>	3				A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I <sub>FSM</sub>	60				A
				Typ.	Max.	Typ.	Max.	
Instantaneous forward voltage (Note 1)	I <sub>F</sub> = 3A	T <sub>J</sub> = 25°C	V <sub>F</sub>	0.47	0.57	0.50	0.60	V
	I <sub>F</sub> = 3A	T <sub>J</sub> = 125°C		0.40	0.50	0.43	0.53	
Maximum Instantaneous reverse current at rated reverse voltage		T <sub>J</sub> = 25°C	I <sub>R</sub>	100				μA
		T <sub>J</sub> = 125°C		25				mA
Typical thermal resistance			R <sub>θJL</sub>	20				°C/W
Operating junction temperature range			T <sub>J</sub>	- 55 to +150				°C
Storage temperature range			T <sub>STG</sub>	- 55 to +150				°C

Note 1: Pulse test with pulse width = 300μs, 1% duty cycle

**ORDERING INFORMATION**

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TSSE3HXX (Note 1, 2)	H	RV	G	SOD123HE	3,000 / 7" Reel
		RQ		SOD123HE	10,000 / 13" Reel

Note 1: "XX" defines voltage from 45V (TSSE3H45) to 60V (TSSE3H60)

Note 2: Whole series with green compound (halogen-free)

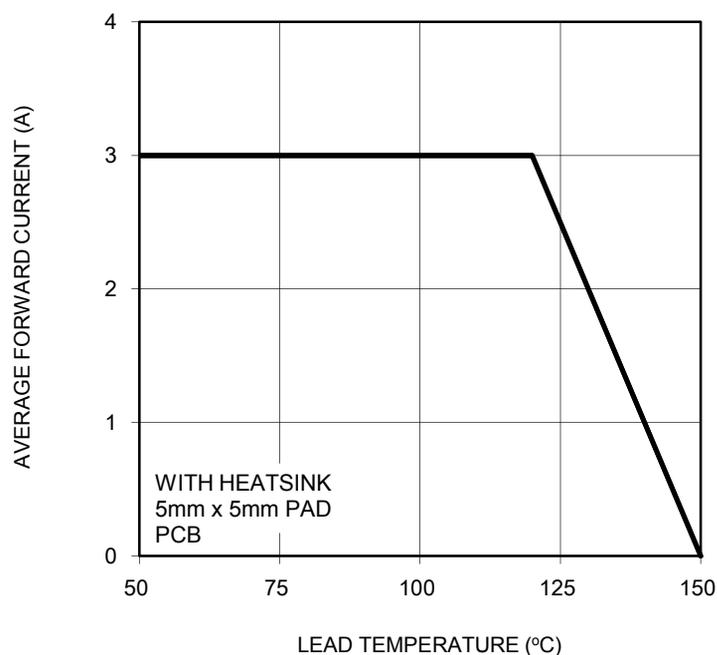
**EXAMPLE**

PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSSE3H45HC0G	TSSE3H45	H	C0	G	AEC-Q101 qualified Green compound

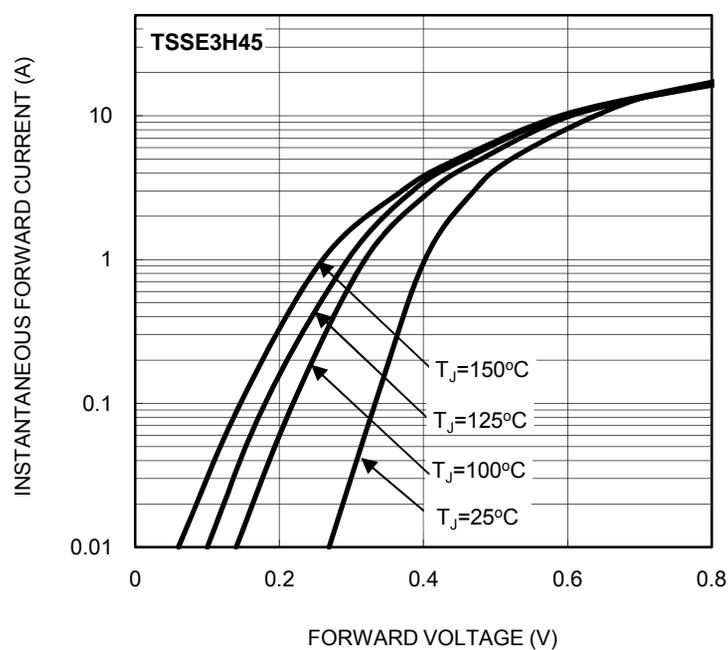
**RATINGS AND CHARACTERISTICS CURVES**

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

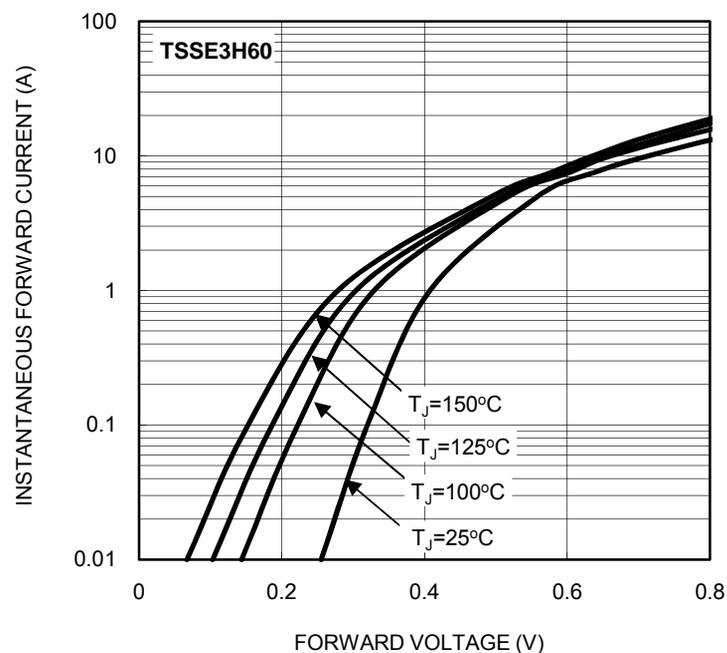
**FIG.1 FORWARD CURRENT DERATING CURVE**



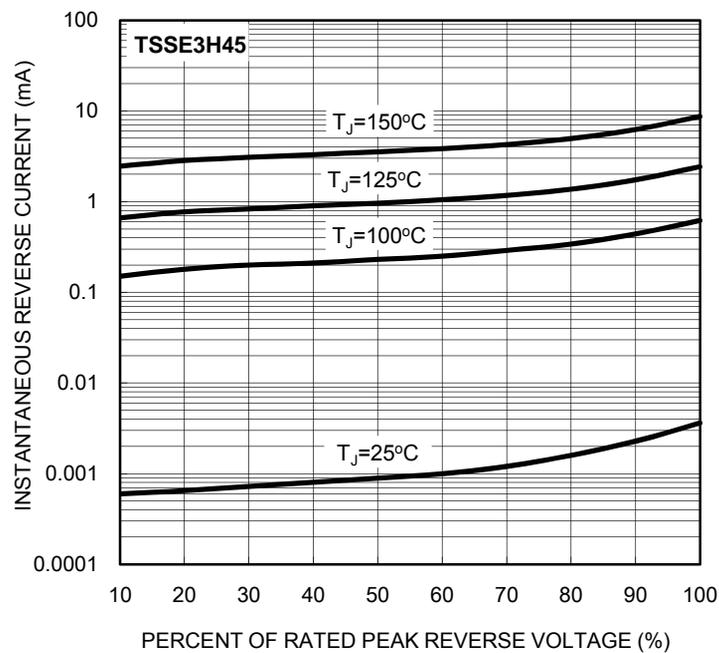
**FIG.2 TYPICAL FORWARD CHARACTERISTICS**



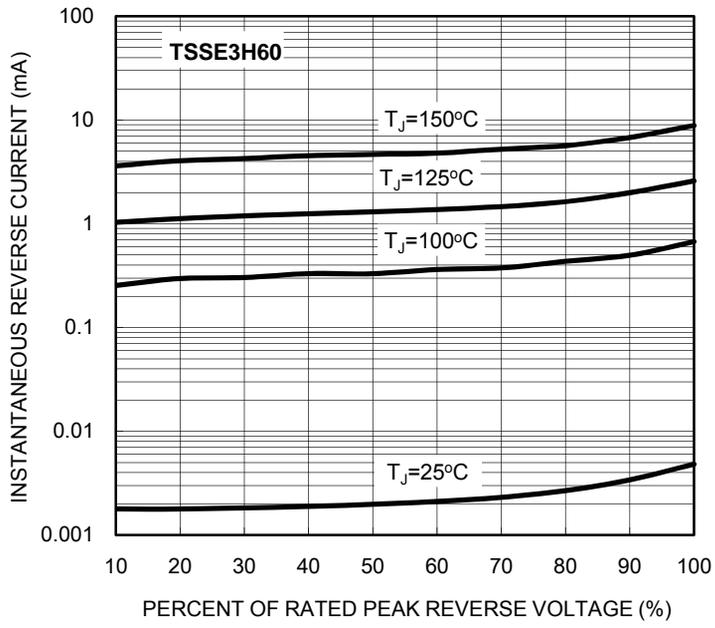
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



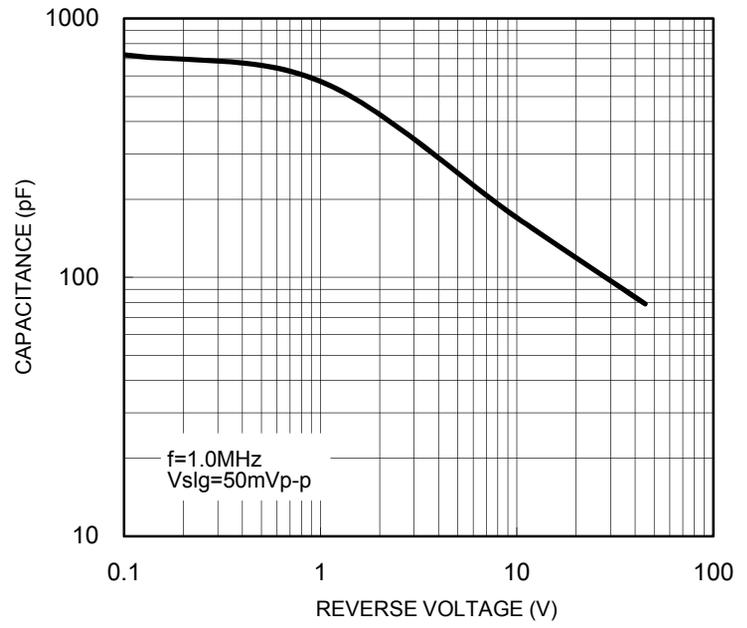
**FIG.4 TYPICAL REVERSE CHARACTERISTICS**



**FIG.5 TYPICAL REVERSE CHARACTERISTICS**

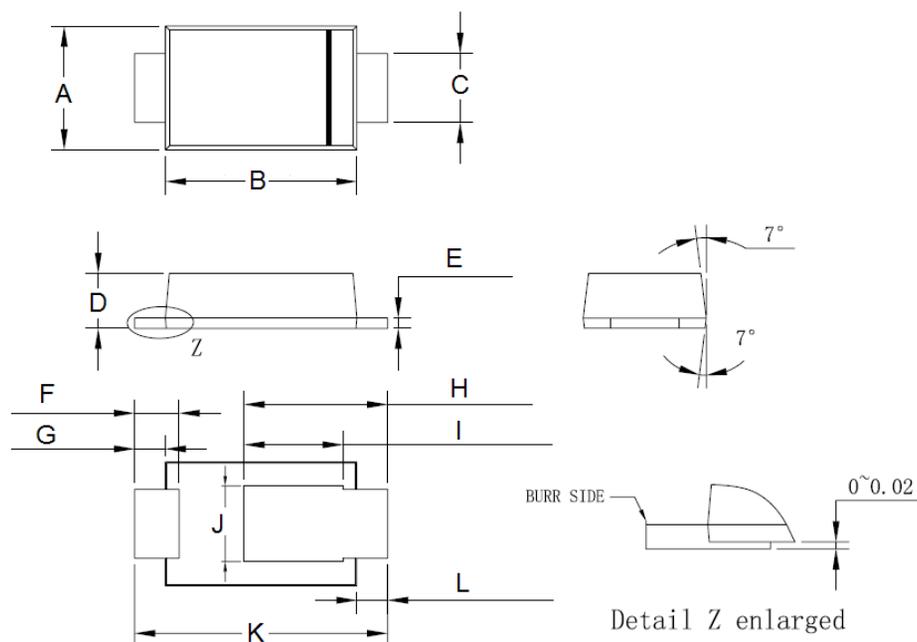


**FIG.6 TYPICAL JUNCTION CAPACITANCE**



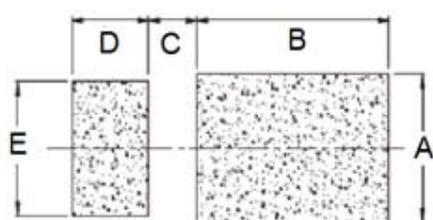
PACKAGE OUTLINE DIMENSIONS

**SOD123HE**



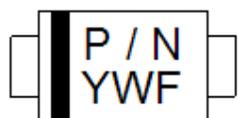
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.06	0.08
B	2.60	3.00	0.10	0.12
C	0.85	1.15	0.03	0.05
D	0.75	0.85	0.03	0.03
E	0.10	0.20	0.00	0.01
F	0.55	0.75	0.02	0.03
G	0.35	0.55	0.01	0.02
H	1.90	2.30	0.07	0.09
I	1.35	1.55	0.05	0.06
J	0.95	1.25	0.04	0.05
K	3.50	3.90	0.14	0.15
L	0.35	0.55	0.01	0.02

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  
YWF = Date Code  
F = Factory Code

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.