

## 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


**SOD-123HE**


### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

**Case:** SOD-123HE

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	TSSE3U45		TSSE3U60		UNIT	
Marking code				E3U45		E3U60			
Maximum repetitive peak reverse voltage			V <sub>RRM</sub>	45		60		V	
Working Peak Reverse Voltage			V <sub>RWM</sub>						
DC Blocking Voltage			V <sub>RM</sub>						
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>	80				A	
				Typ	Max	Typ	Max		
Instantaneous forward voltage (Note 1)			I <sub>F</sub> = 1A	T <sub>J</sub> = 25°C	V <sub>F</sub>	0.33	-	0.39	-
						I <sub>F</sub> = 3A	0.40	0.47	0.49
			I <sub>F</sub> = 1A	T <sub>J</sub> = 125°C		0.24	-	0.28	-
						I <sub>F</sub> = 3A	0.34	0.44	0.43
Maximum Instantaneous reverse current at rated reverse voltage			T <sub>J</sub> = 25°C	I <sub>R</sub>	1000		μA		
					T <sub>J</sub> = 125°C	50		mA	
Typical thermal resistance			R <sub>θJL</sub>	23				°C/W	
			R <sub>θJA</sub>	70					
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
TSSE3UXX (Note 1, 2)	H	RV	G	SOD-123HE	3,000 / 7" Reel
		RQ		SOD-123HE	10,000 / 13" Reel

Note 1: "xx" defines voltage from 45V (TSSE3U45) to 60V (TSSE3U60)

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

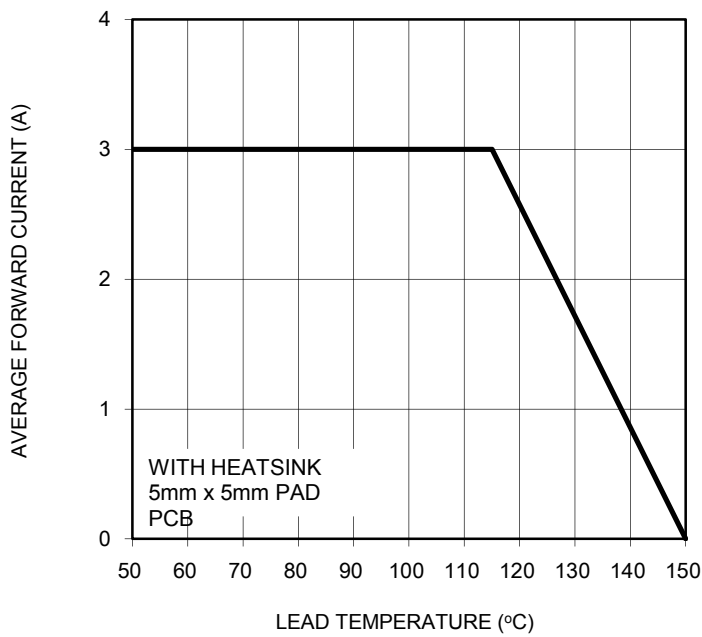
**EXAMPLE**

PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSSE3U45HC0G	TSSE3U45	H	C0	G	AEC-Q101 qualified Green compound

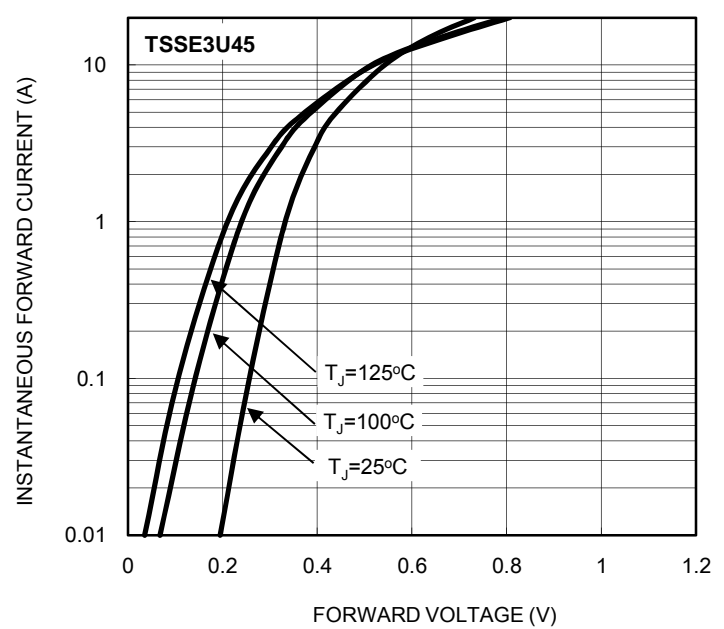
**RATINGS AND CHARACTERISTICS CURVES**

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

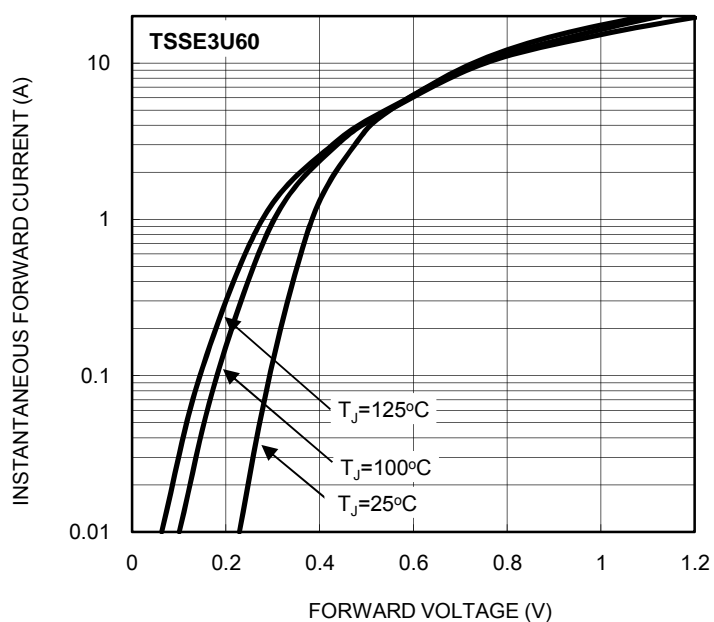
**FIG.1 FORWARD CURRENT DERATING CURVE**



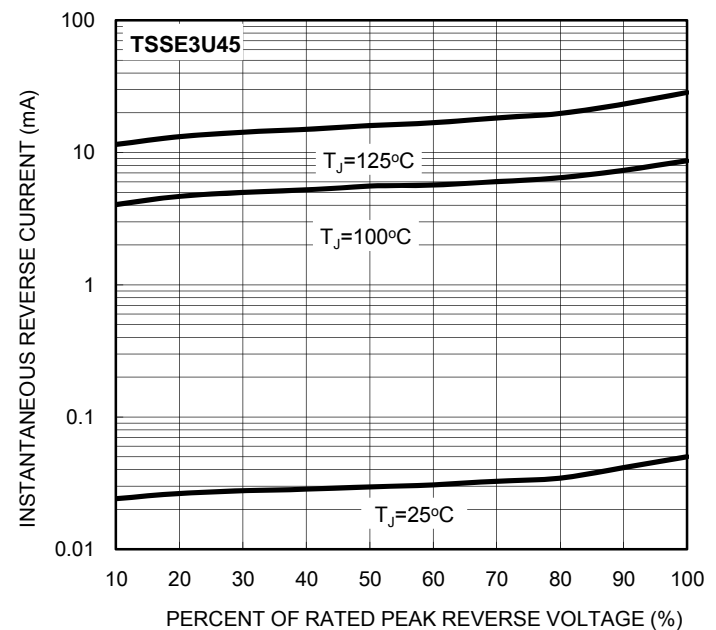
**FIG.2 TYPICAL FORWARD CHARACTERISTICS**



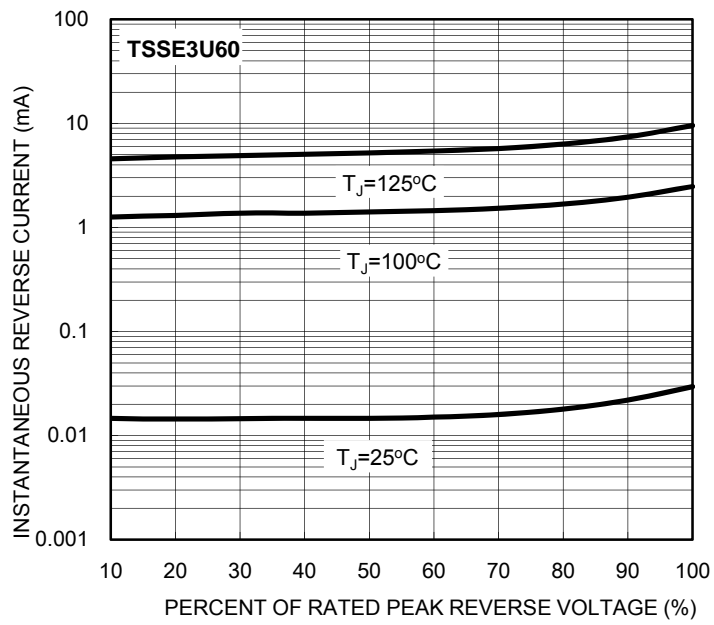
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



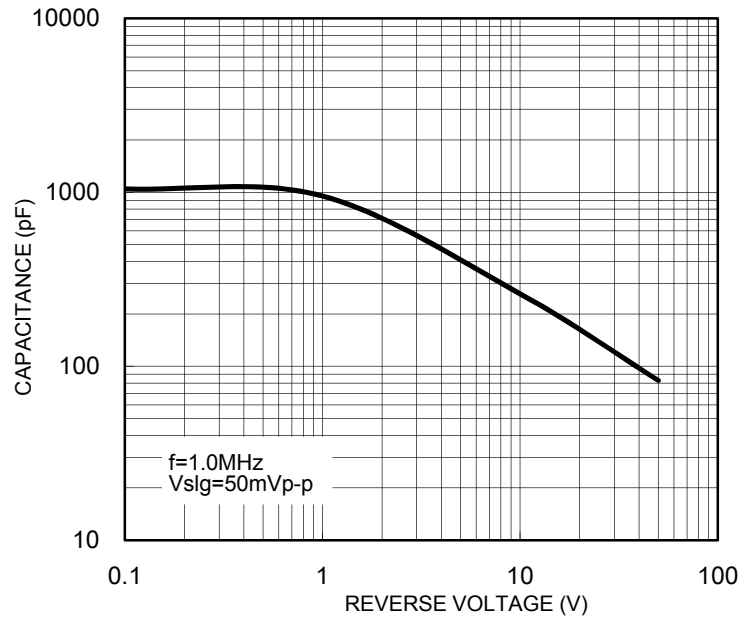
**FIG.4 TYPICAL REVERSE CHARACTERISTICS**



**FIG.5 TYPICAL REVERSE CHARACTERISTICS**

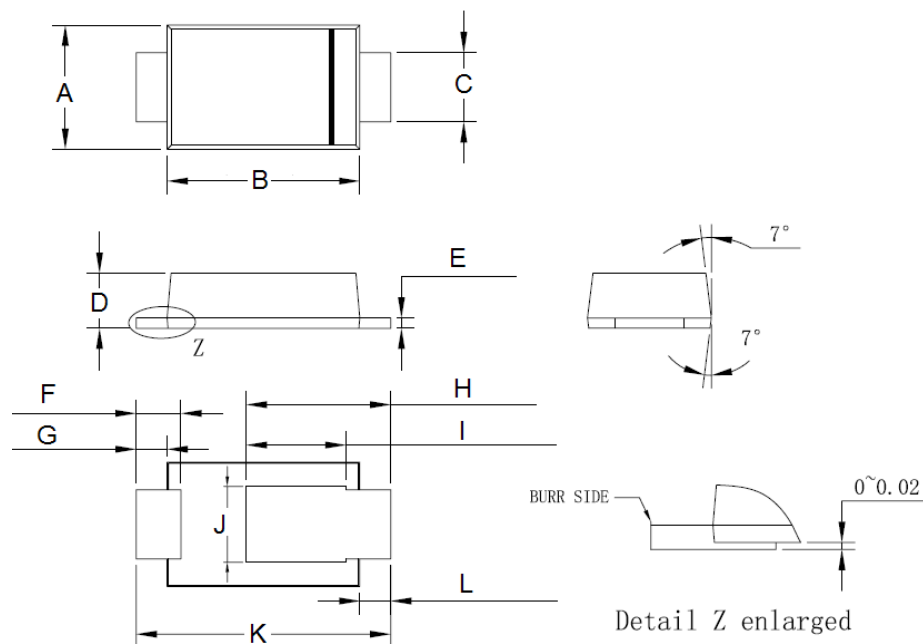


**FIG.6 TYPICAL JUNCTION CAPACITANCE**



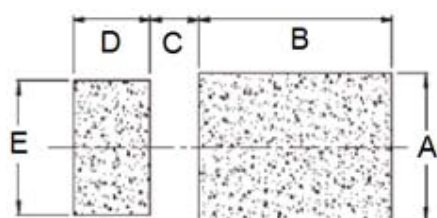
PACKAGE OUTLINE DIMENSIONS

**SOD-123HE**



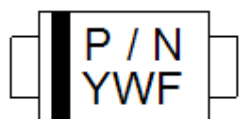
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.06	0.08
B	2.60	3.00	0.10	0.12
C	0.85	1.15	0.03	0.05
D	0.75	0.85	0.03	0.03
E	0.10	0.20	0.00	0.01
F	0.55	0.75	0.02	0.03
G	0.35	0.55	0.01	0.02
H	1.90	2.30	0.07	0.09
I	1.35	1.55	0.05	0.06
J	0.95	1.25	0.04	0.05
K	3.50	3.90	0.14	0.15
L	0.35	0.55	0.01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

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