

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

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 _A =25°C unless otherwise noted)									
PARAMETER			SYMBOL	TSSE3U45		TSSE3U60		UNIT	
Marking code				E3U45		E3U60			
Maximum repetitive peak reverse voltage			V _{RRM}	45		60		V	
Working Peak Reverse Voltage			V _{RWM}						
DC Blocking Voltage			V _{RM}						
Maximum RMS voltage			V _{RMS}	32	42		V		
Maximum average forward rectified current			I _{F(AV)}	3				A	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I _{FSM}	80				A	
				Typ	Max	Typ	Max		
Instantaneous forward voltage (Note 1)		I _F = 1A	T _J = 25°C	V _F	0.33	-	0.39	-	V
		I _F = 3A			0.40	0.47	0.49	0.58	
		I _F = 1A	T _J = 125°C		0.24	-	0.28	-	
		I _F = 3A			0.34	0.44	0.43	0.52	
Maximum Instantaneous reverse current at rated reverse voltage		T _J = 25°C		I _R	1000			μA	
		T _J = 125°C			50			mA	
Typical thermal resistance			R _{θJL}	23				°C/W	
			R _{θJA}	70					
Operating junction temperature range			T _J	- 55 to +150				°C	
Storage temperature range			T _{STG}	- 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	SOD123HE	3,000 / 7" Reel
		RQ		SOD123HE	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

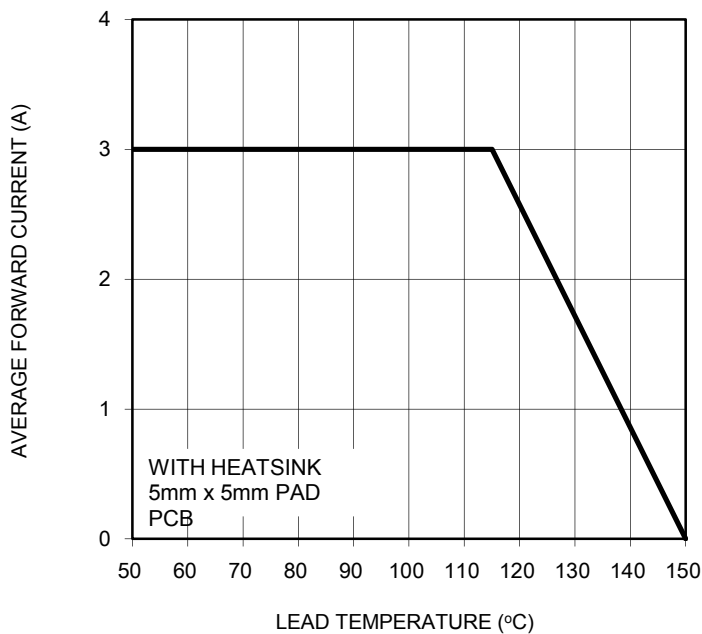


FIG.2 TYPICAL FORWARD CHARACTERISTICS

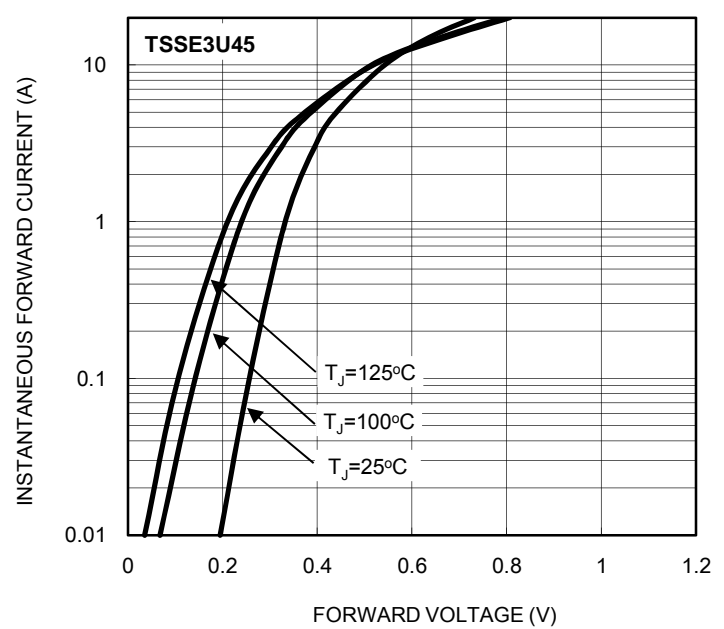


FIG.3 TYPICAL FORWARD CHARACTERISTICS

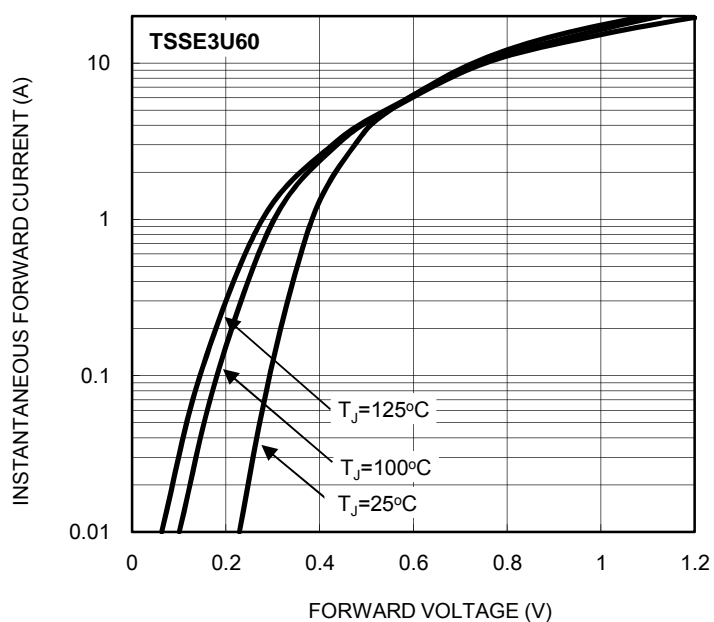


FIG.4 TYPICAL REVERSE CHARACTERISTICS

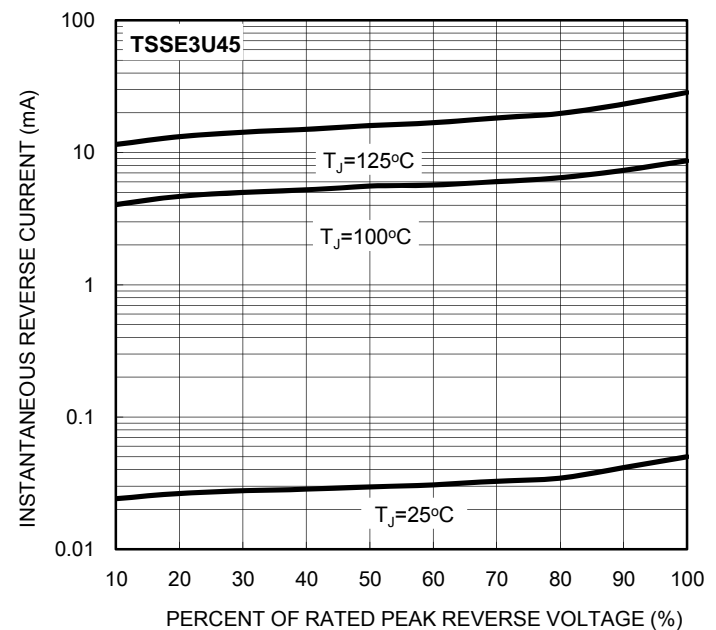


FIG.5 TYPICAL REVERSE CHARACTERISTICS

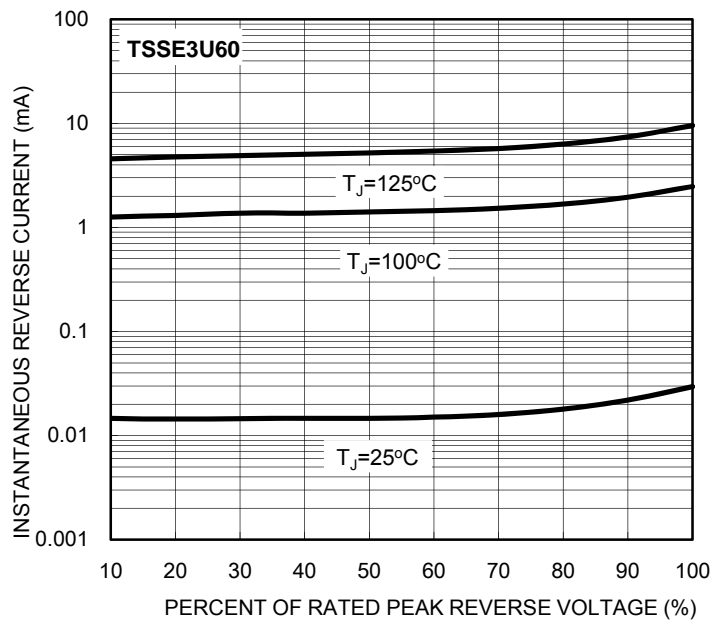
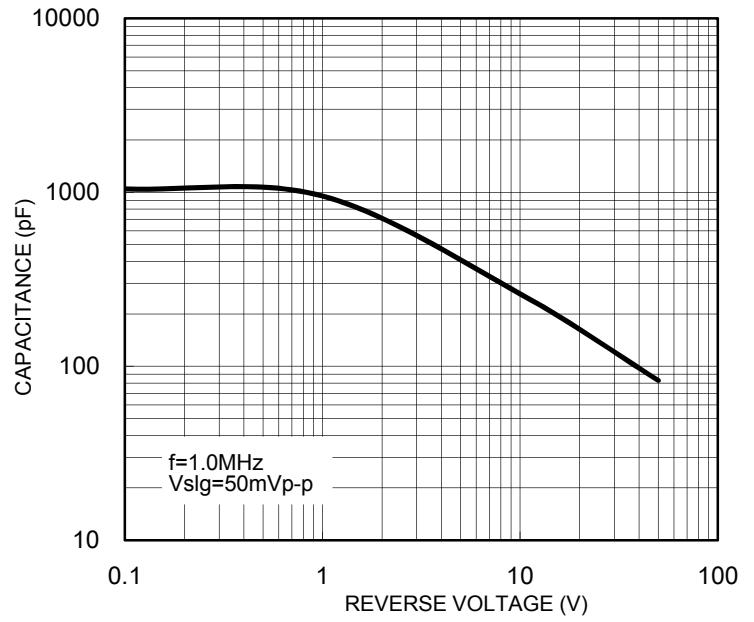
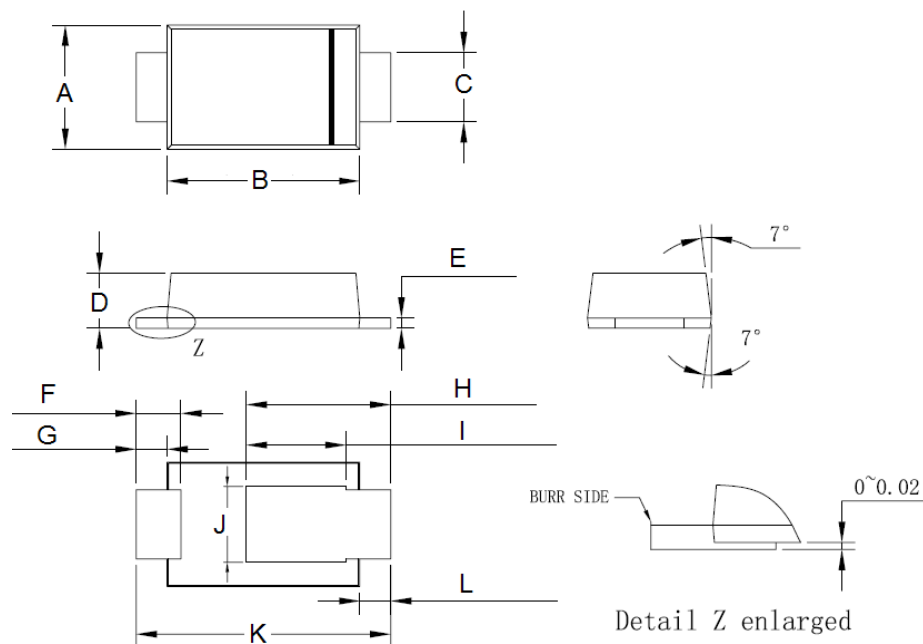


FIG.6 TYPICAL JUNCTION CAPACITANCE



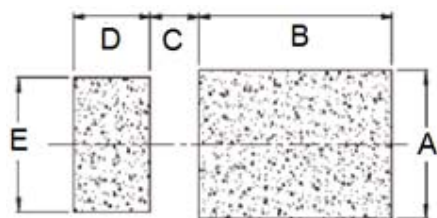
PACKAGE OUTLINE DIMENSIONS

SOD123HE



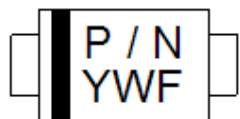
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.06	0.08
B	2.60	3.00	0.10	0.12
C	0.85	1.15	0.03	0.05
D	0.75	0.85	0.03	0.03
E	0.10	0.20	0.00	0.01
F	0.55	0.75	0.02	0.03
G	0.35	0.55	0.01	0.02
H	1.90	2.30	0.07	0.09
I	1.35	1.55	0.05	0.06
J	0.95	1.25	0.04	0.05
K	3.50	3.90	0.14	0.15
L	0.35	0.55	0.01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

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