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

Pb-Free

RoHS COMPLIANT

HALOGEN FREE

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: 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_A = 25°C unless otherwise noted)								
PARAMETER			SYMBOL	TSSE3H45		TSSE3H60		UNIT
Marking code				E3H45		E3H60		
Maximum repetitive peak reverse voltage			V_{RRM}	45		60		V
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}	60				A
				Typ.	Max.	Typ.	Max.	
Instantaneous forward voltage (Note 1)	I_F = 3A	T_J = 25°C	V_F	0.47	0.57	0.50	0.60	V
	I_F = 3A	T_J = 125°C		0.40	0.50	0.43	0.53	
Maximum Instantaneous reverse current at rated reverse voltage		T_J = 25°C	I_R	100				μA
		T_J = 125°C		25				mA
Typical thermal resistance			$R_{\theta JL}$	20				°C/W
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
TSSE3HXX (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 (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°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

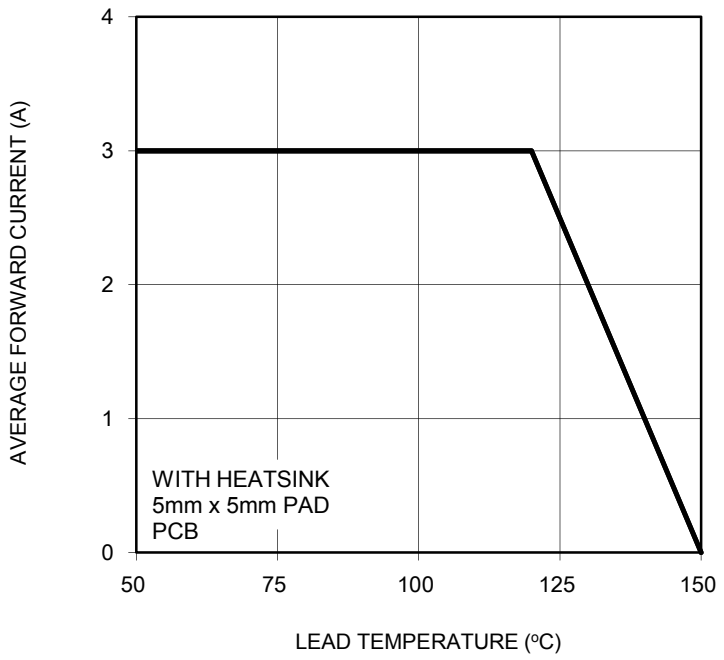


FIG.2 TYPICAL FORWARD CHARACTERISTICS

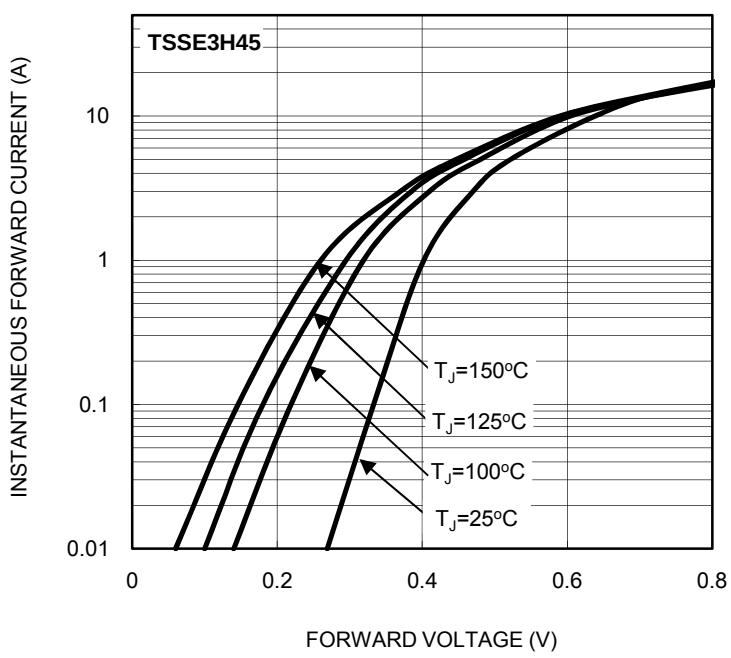


FIG.3 TYPICAL FORWARD CHARACTERISTICS

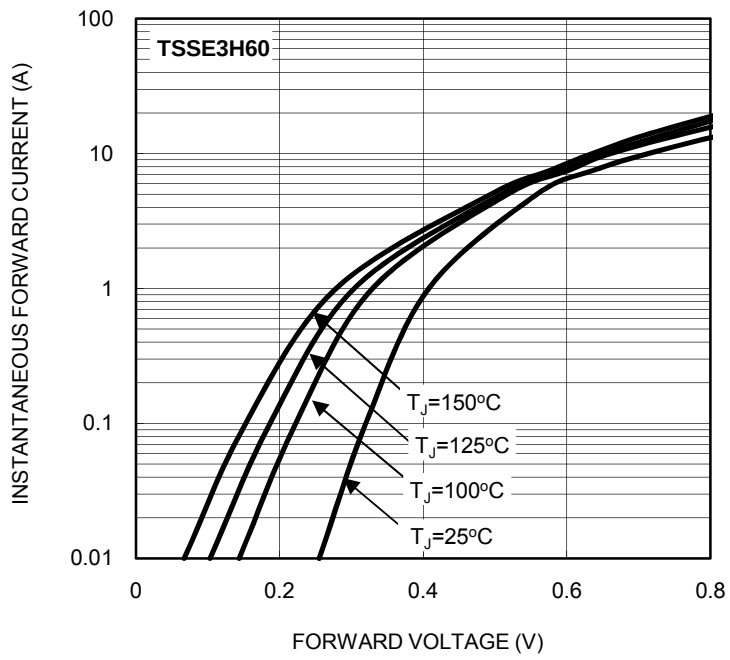


FIG.4 TYPICAL REVERSE CHARACTERISTICS

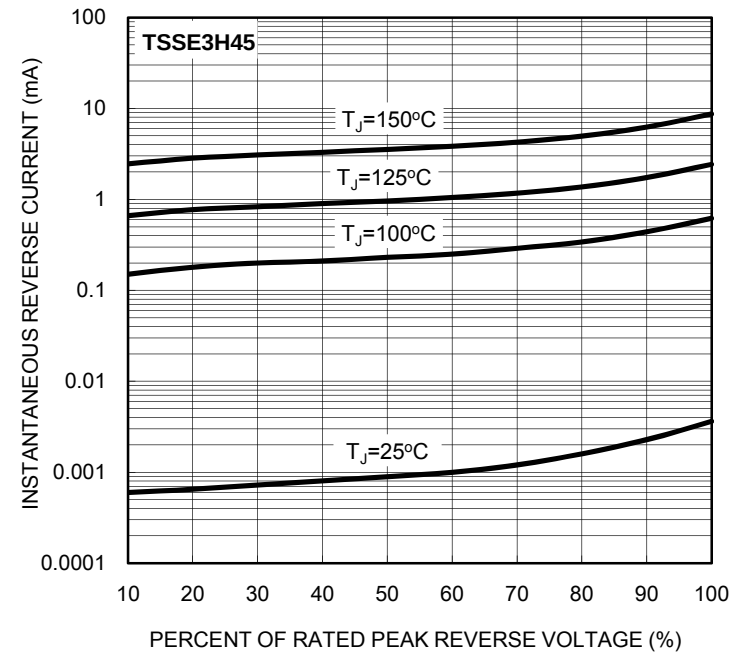


FIG.5 TYPICAL REVERSE CHARACTERISTICS

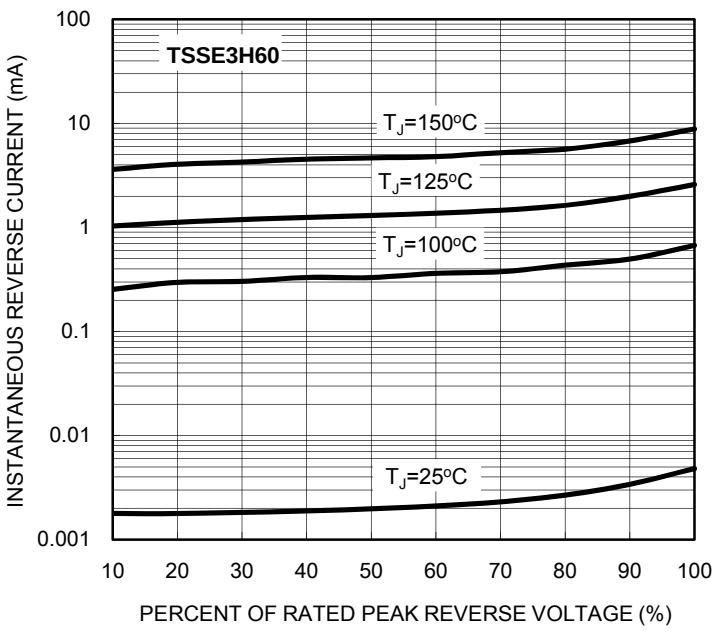
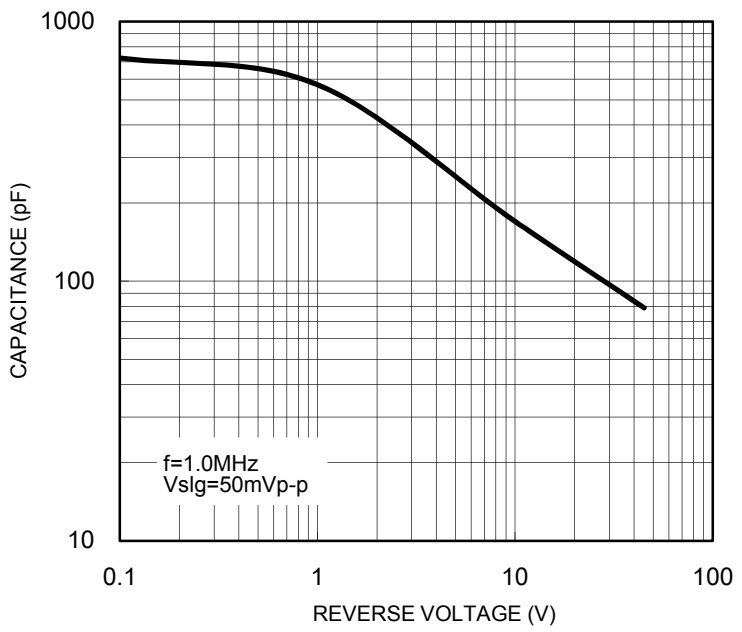
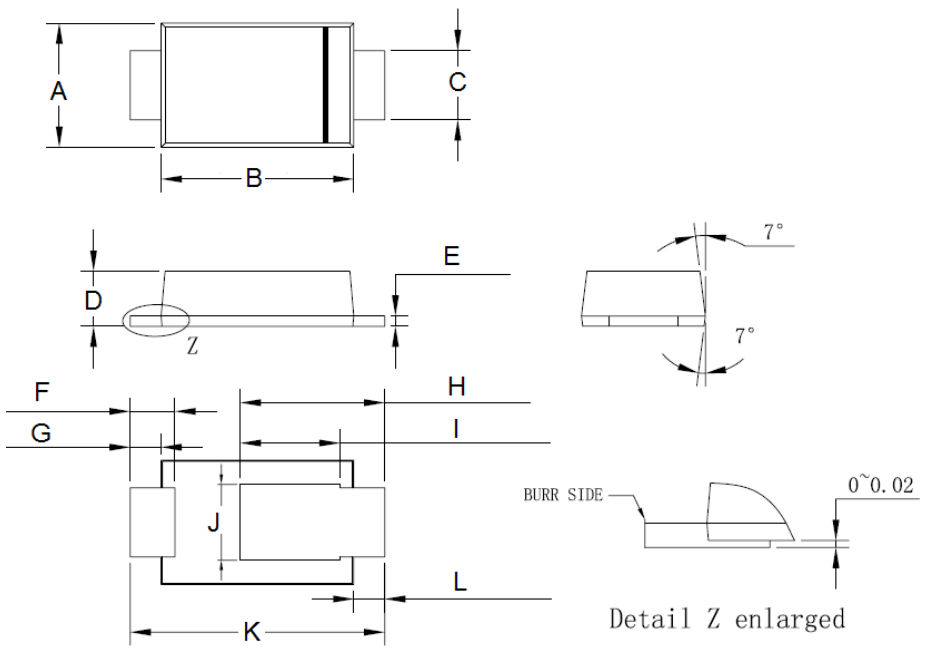


FIG.6 TYPICAL JUNCTION CAPACITANCE



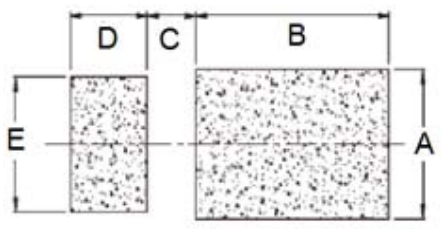
PACKAGE OUTLINE DIMENSIONS

SOD-123HE



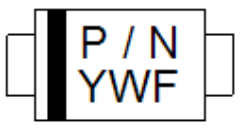
DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.06	0.08
B	2.60	3.00	0.10	0.12
C	0.85	1.15	0.03	0.05
D	0.75	0.85	0.03	0.03
E	0.10	0.20	0.00	0.01
F	0.55	0.75	0.02	0.03
G	0.35	0.55	0.01	0.02
H	1.90	2.30	0.07	0.09
I	1.35	1.55	0.05	0.06
J	0.95	1.25	0.04	0.05
K	3.50	3.90	0.14	0.15
L	0.35	0.55	0.01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