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

FEATURES

- AEC-Q101 qualified
- Patented Trench Schottky technology
- 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 according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	3	A
V_{RRM}	45 - 60	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	SOD-123W	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

MECHANICAL DATA

- Case: SOD-123W
- 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: 0.016g (approximately)

SOD-123W

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)				
PARAMETER	**SYMBOL**	**TSSW3U45H**	**TSSW3U60H**	**UNIT**
Marking code on the device		W3U45	W3U60	
Repetitive peak reverse voltage	V_{RRM}	45	60	V
Reverse voltage, total rms value	$V_{R(RMS)}$	31	42	V
Forward current	I_F	3		A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	50		A
Junction temperature	T_J	- 55 to +150		°C
Storage temperature	T_{STG}	- 55 to +150		°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	75	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	TSSW3U45H	I_F = 1A, T_J = 25°C	V_F	0.33	-	V
	TSSW3U60H			0.39	-	V
	TSSW3U45H	I_F = 3A, T_J = 25°C		0.40	0.47	V
	TSSW3U60H			0.49	0.58	V
	TSSW3U45H	I_F = 1A, T_J = 125°C		0.24	-	V
	TSSW3U60H			0.28	-	V
	TSSW3U45H	I_F = 3A, T_J = 125°C		0.34	0.44	V
	TSSW3U60H			0.43	0.52	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	1	mA
		T_J = 125°C		-	50	mA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
TSSW3UxH	SOD-123W	10,000 / Tape & Reel

Notes:

1. “x” defines voltage from 45V(TSSW3U45H) to 60V(TSSW3U60H)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

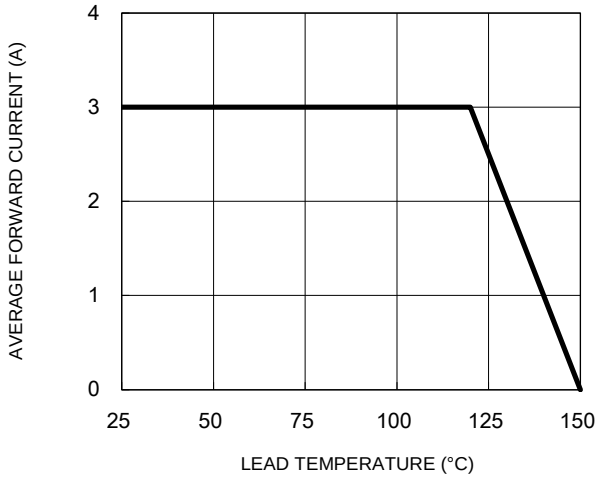


Fig.2 Typical Junction Capacitance

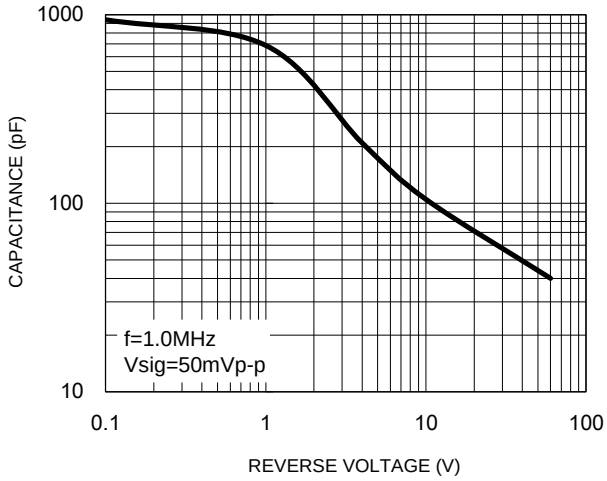


Fig.3 Typical Reverse Characteristics

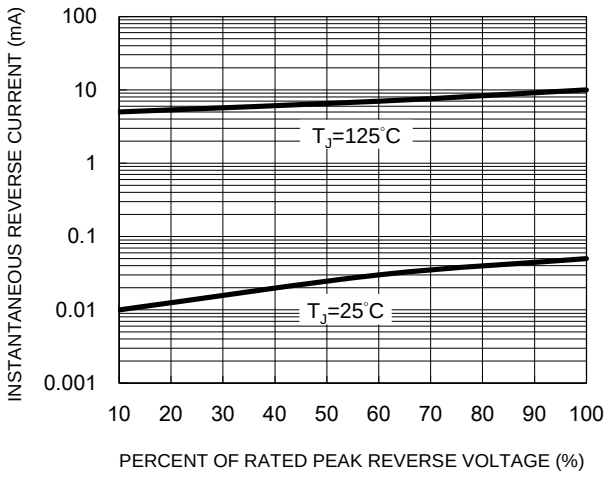


Fig.4 Typical Forward Characteristics

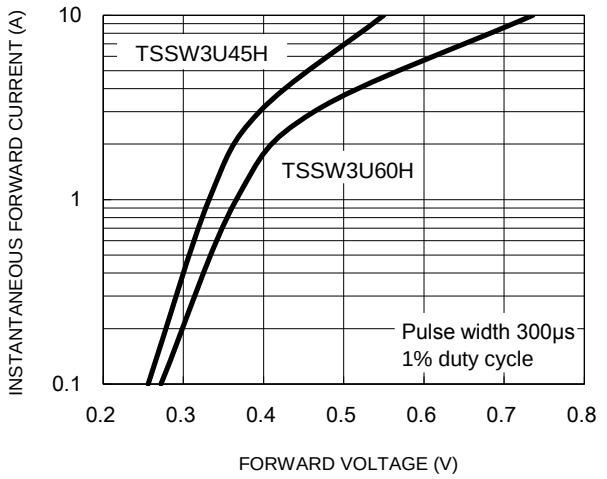
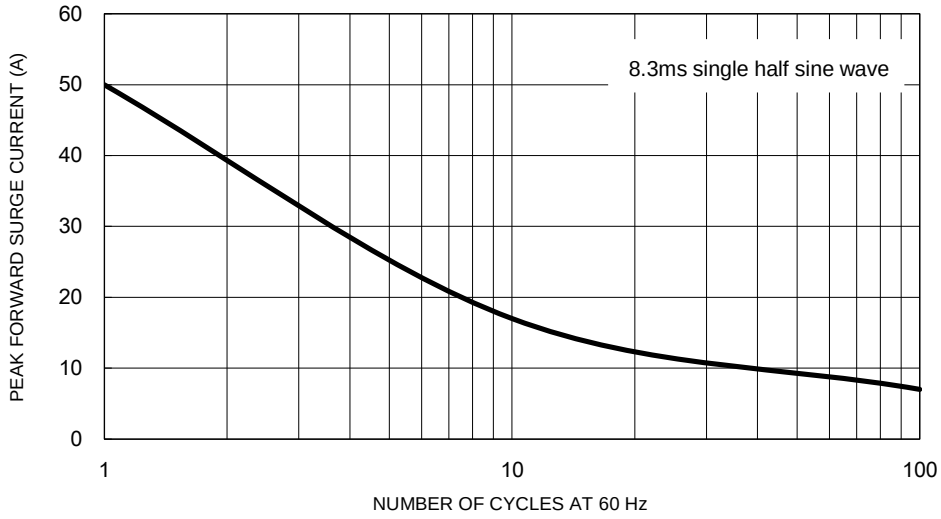
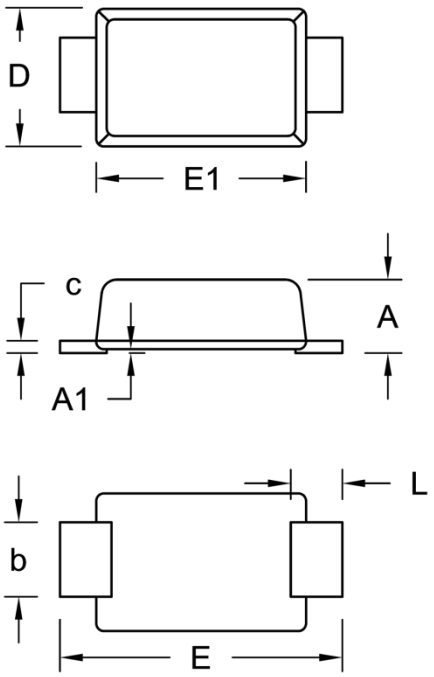


Fig.5 Maximum Non-Repetitive Forward Surge Current



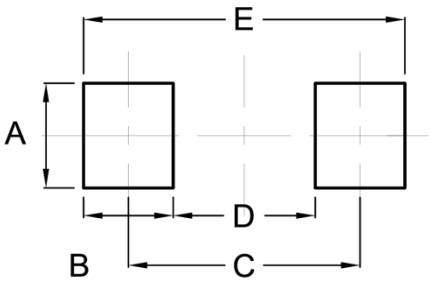
PACKAGE OUTLINE DIMENSIONS

SOD-123W



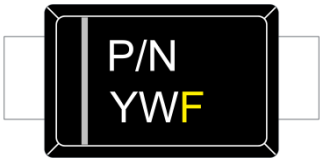
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.90	1.02	0.035	0.040
A1	0.00	0.10	0.000	0.004
b	0.90	1.05	0.035	0.041
c	0.10	0.22	0.004	0.009
D	1.70	1.90	0.067	0.075
E	3.60	3.80	0.142	0.150
E1	2.60	2.90	0.102	0.114
L	0.50	0.85	0.020	0.033

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	1.20	0.047
C	3.10	0.122
D	1.90	0.075
E	4.30	0.169

MARKING DIAGRAM



P/N = Marking Code
YW = Date Code
F = Factory Code

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