

1A, 600V Ultra Fast Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Ideal for automated placement
- Ultra fast recovery time for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- Freewheeling application

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)
- Base P/N_X ("X" denotes revision code e.g. A, B, ...)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	600	V
I_{FSM}	30	A
$T_J \text{ MAX}$	150	°C
Package	SOD-123W	
Configuration	Single die	


**HALOGEN
FREE**


SOD-123W



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	I_F	1	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30	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	$R_{\theta JL}$	28	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	88	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	38	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu test board)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.50	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	1	μA
	$T_J = 125^\circ\text{C}$		-	50	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	15	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	25	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
UF1JLWH_A	SOD-123W	10,000 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

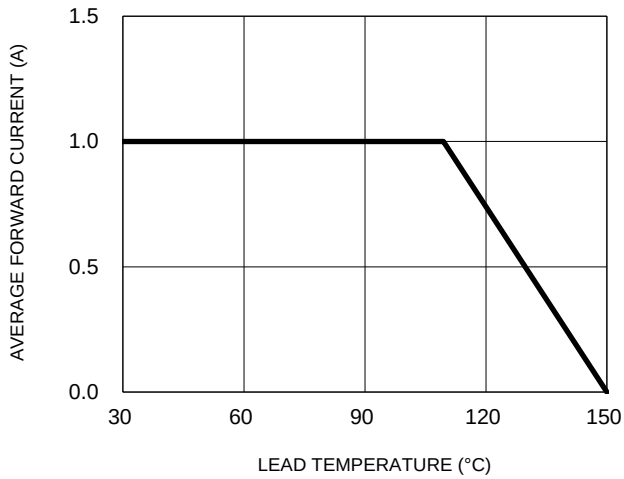


Fig.2 Typical Junction Capacitance

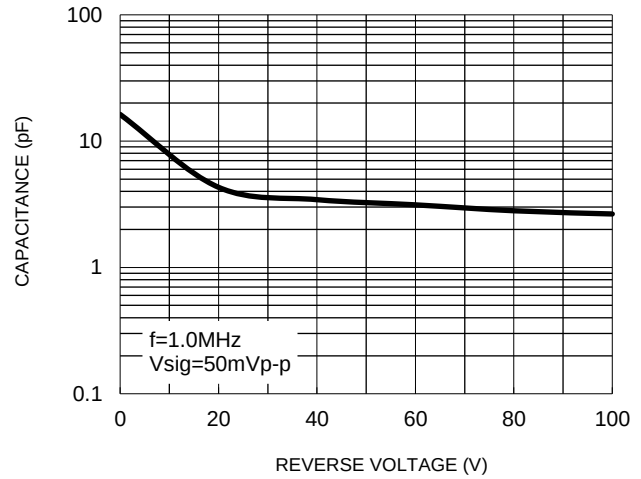


Fig.3 Typical Reverse Characteristics

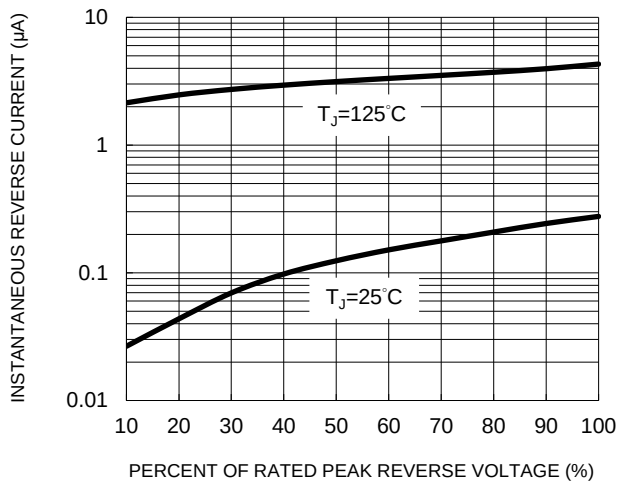
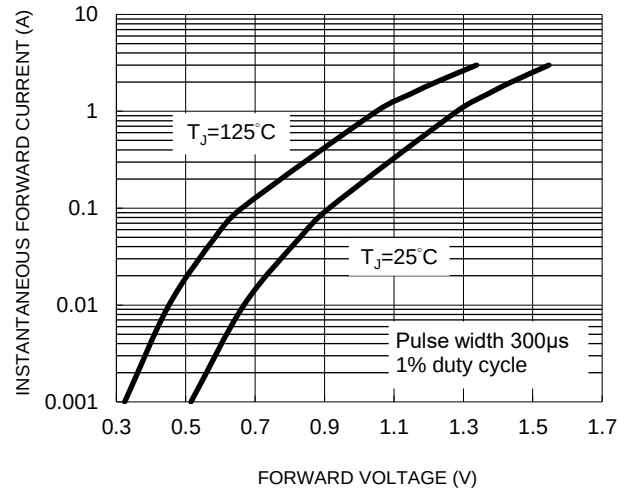
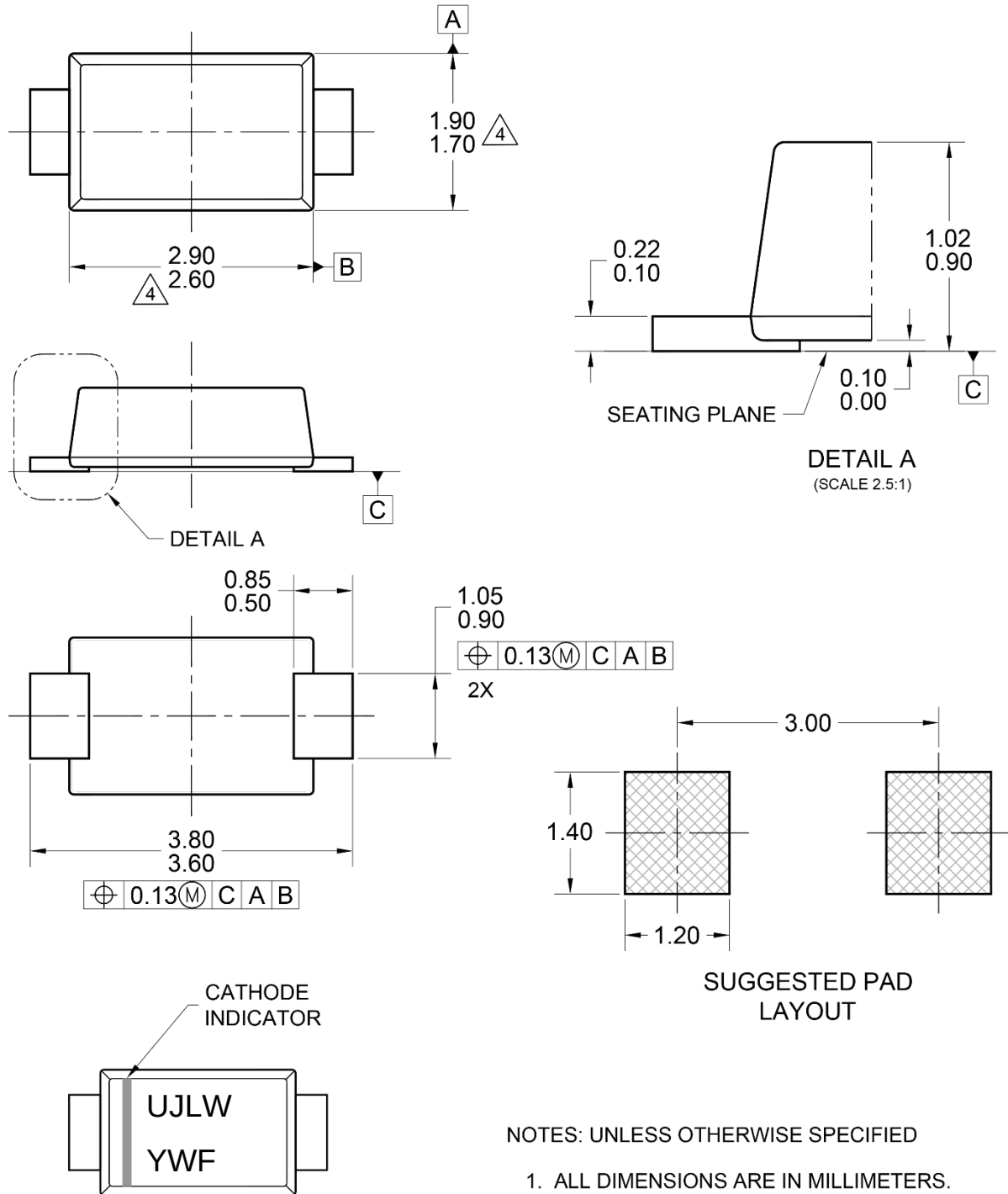


Fig.4 Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

SOD-123W



YW = Date code
F = Factory code

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
- PACKAGE OUTLINE REFERENCE:
JEDEC DO-219, VARIATION AB, ISSUE C.
- MODIFIED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
- DWG NO. REF: HQ2SD07-SOD123W-037 REV A.

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