1A, 200V - 600V Surface Mount Ultra Fast Rectifiers

FEATURES

- Ideal for automated placement
- Ultra fast recovery time for high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	1	A
V_{RRM}	200-600	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	SOD-123W	
Configuration	Single dice	

APPLICATIONS

- For use in high voltage, high frequency power factor corrections, switching mode power supplies, freewheeling diodes and secondary dc to dc rectifications

Pb-Free RoHS COMPLIANT HALOGEN FREE

MECHANICAL DATA

- **Case:** SOD-123W
- Molding compound, UL flammability classification rating 94V-0
- Moisture sensitivity level: level 1, per J-STD-020
- 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 J-STD-002
- Meet JESD 201 class 2 whisker test
- **Polarity:** Indicated by cathode band
- **Weight:** 16 mg (approximately)

SOD-123W

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	UF1DLW	UF1GLW	UF1JLW	UNIT
Marking code on the device		UDLW	UGLW	UJLW	
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Maximum RMS voltage	V_{RMS}	140	280	420	V
Maximum DC blocking voltage	V_{DC}	200	400	600	V
Maximum average forward rectified current	$I_{F(AV)}$	1			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30			A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	- 55 to +150			°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**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 recommended PCB (5mm x 5mm Cu test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER		**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Maximum instantaneous forward voltage (Note 1)	UF1DLW UF1GLW UF1JLW	I_F = 1A	V_F	- - -	0.95 1.25 1.5	V
Maximum reverse current @ rated V_R (Note 2)		T_J = 25℃	I_R	-	1	μA
		T_J = 125℃		-	50	μA
Junction capacitance	UF1DLW UF1GLW UF1JLW	1 MHz, V_R=4.0V	C_J	40 25 15	- - -	pF
Reverse recovery time	UF1DLW UF1GLW UF1JLW	I_F=0.5A , I_R=1.0A I_{RR}=0.25A	t_{rr}	-	20 20 25	ns

Notes:

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

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
UF1xLW (Note 1, 2)	H	RV	G	SOD-123W	3,000 / 7" Plastic reel
		RQ			10,000 / 13" Paper reel

Note 1: "x" defines voltage from 200V (UF1DLW) to 600V (UF1JLW)
Note 2: Whole series with green compound (halogen-free)

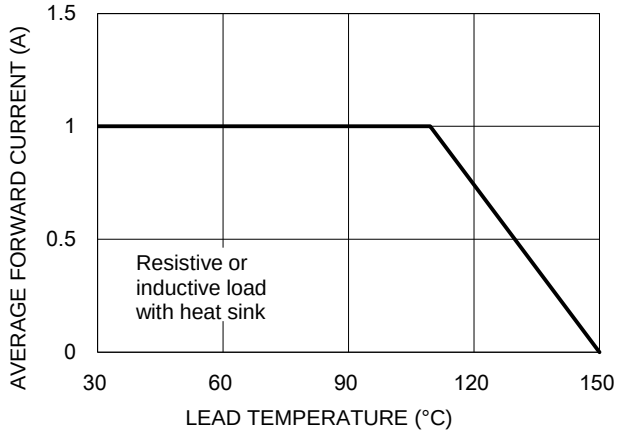
EXAMPLE

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
UF1DLWHRVG	UF1DLW	H	RV	G	AEC-Q101 qualified Green compound

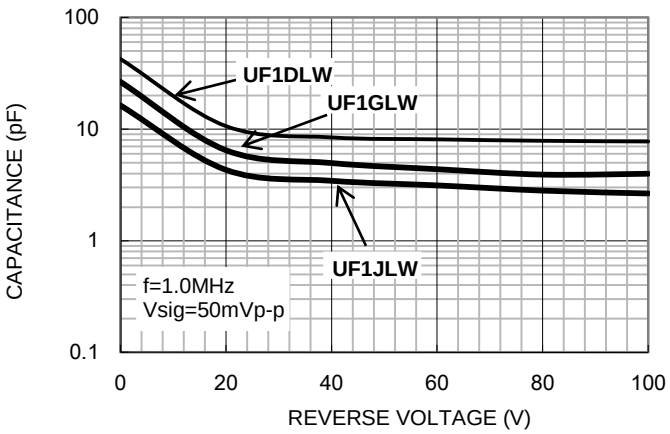
CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

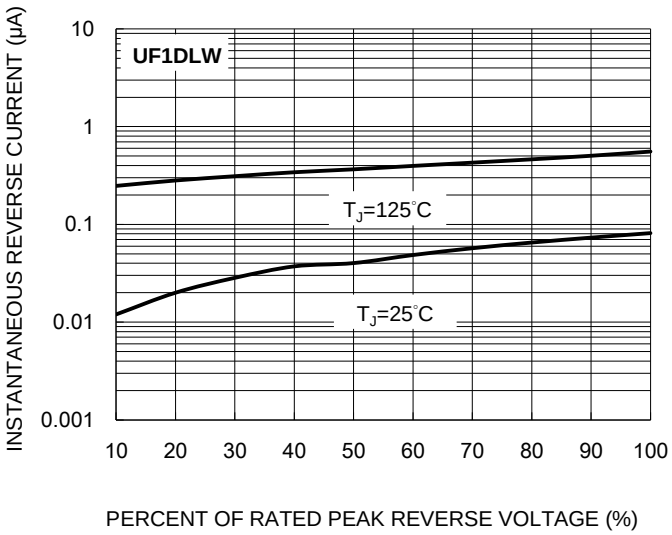
Forward Current Derating Curve



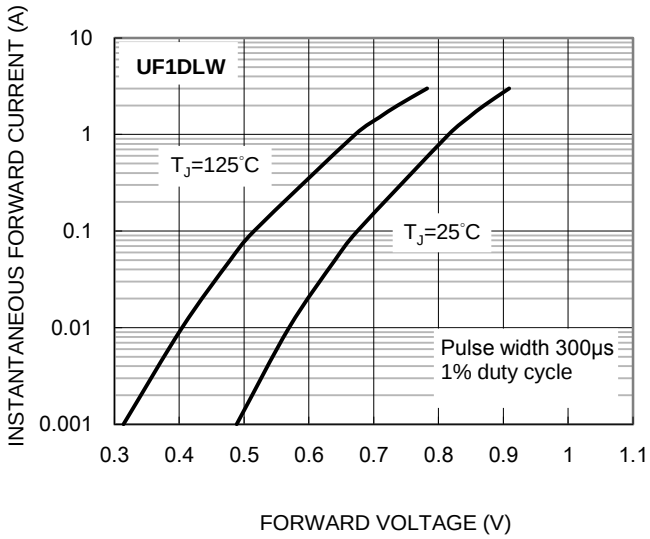
Typical Junction Capacitance



TYPICAL REVERSE CHARACTERISTICS



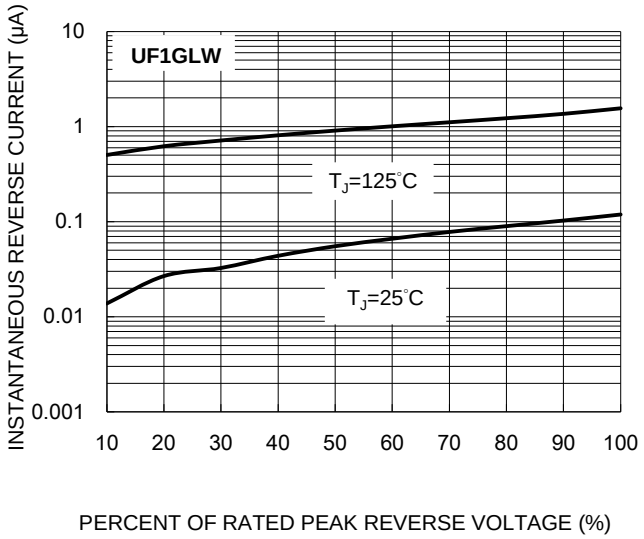
TYPICAL FORWARD CHARACTERISTICS



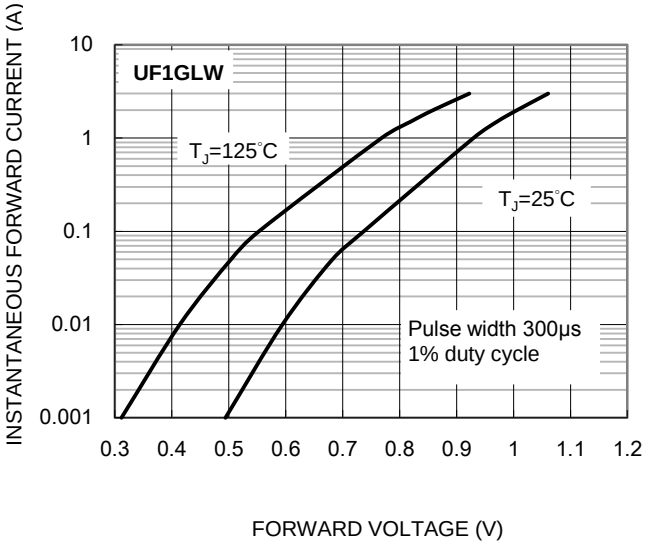
CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

TYPICAL REVERSE CHARACTERISTICS



TYPICAL FORWARD CHARACTERISTICS



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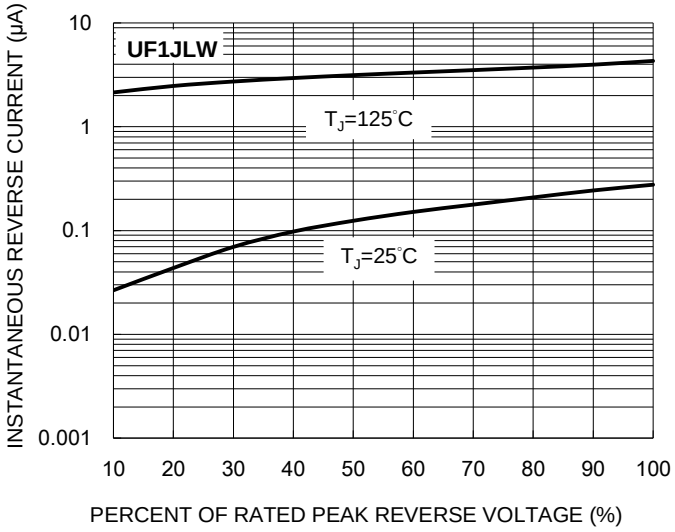

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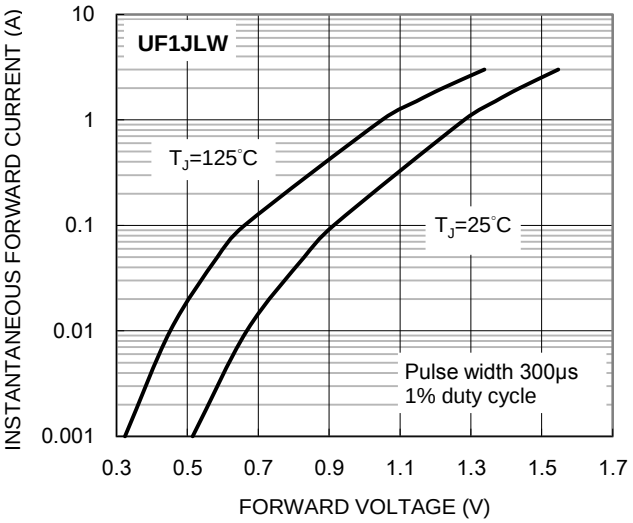
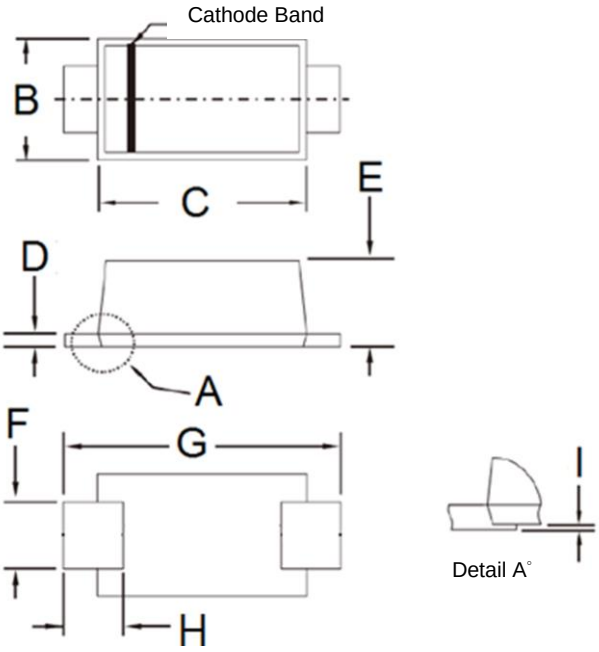


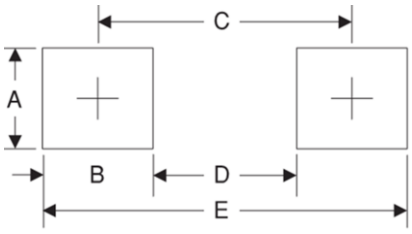
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

SOD-123W



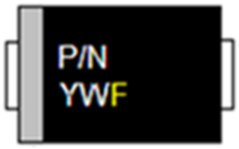
DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
B	1.70	1.90	0.067	0.075
C	2.60	2.90	0.102	0.114
D	0.10	0.22	0.004	0.009
E	0.90	1.02	0.035	0.040
F	0.90	1.05	0.035	0.041
G	3.60	3.80	0.142	0.150
H	0.50	0.85	0.020	0.033
I	0.00	0.10	0.000	0.004

SUGGESTED PAD LAYOUT (Unit: Millimeters)



Symbol	Unit (mm)	Unit (inch)
A	1.4	0.055
B	1.2	0.047
C	3.1	0.122
D	1.9	0.075
E	4.3	0.169

MARKING DIAGRAM



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

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UF1DLW RQG UF1DLW RVG UF1DLWHRQG UF1DLWHRVG UF1GLW RQG UF1GLW RVG UF1GLWHRQG UF1GLWHRVG UF1JLW RQG UF1JLW RVG UF1JLWHRQG UF1JLWHRVG