

## 150mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliance to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: SOD-123F
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 8.85 ± 0.5mg

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	150	mA
$V_{RRM}$	75	V
$I_{FSM}$	2	A
$V_F$ at $I_F=100mA$	1.00	V
$T_J$ Max.	150	°C
Package	SOD-123F	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Marking code on the device	1N4148W		D1	
	1N4448W		D2	
	1N914BW		D3	
Power dissipation		$P_D$	400	mW
Reverse voltage		$V_R$	100	V
Repetitive peak reverse voltage		$V_{RRM}$	75	V
Forward current		$I_F$	150	mA
Repetitive peak forward current		$I_{FRM}$	300	mA
Non-repetitive peak forward surge current @ $t=1.0\mu\text{s}$		$I_{FSM}$	2	A
Junction temperature range		$T_J$	-65 to +150	°C
Storage temperature range		$T_{STG}$	-65 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	450	$^{\circ}\text{C/W}$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>MIN</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	1N4448W, 1N914BW	$I_F = 5\text{mA}, T_J = 25^{\circ}\text{C}$	$V_F$	0.62	0.72	V
	1N4148W	$I_F = 10\text{mA}, T_J = 25^{\circ}\text{C}$		-	1.00	
	1N4448W, 1N914BW	$I_F = 100\text{mA}, T_J = 25^{\circ}\text{C}$		-	1.00	
Reverse voltage	$I_R = 100\mu\text{A}, T_J = 25^{\circ}\text{C}$		$V_R$	100	-	V
	$I_R = 5\mu\text{A}, T_J = 25^{\circ}\text{C}$			75	-	
Reverse leakage current <sup>(2)</sup>	$V_R = 20\text{V}, T_J = 25^{\circ}\text{C}$		$I_R$	-	25	nA
	$V_R = 75\text{V}, T_J = 25^{\circ}\text{C}$			-	5	$\mu\text{A}$
Junction capacitance	1 MHz, $V_R = 0\text{V}$		$C_J$	-	4	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 60\text{mA}, R_L = 100\Omega, I_{RR} = 1\text{mA}$		$t_{rr}$	-	4	ns

**Notes:**

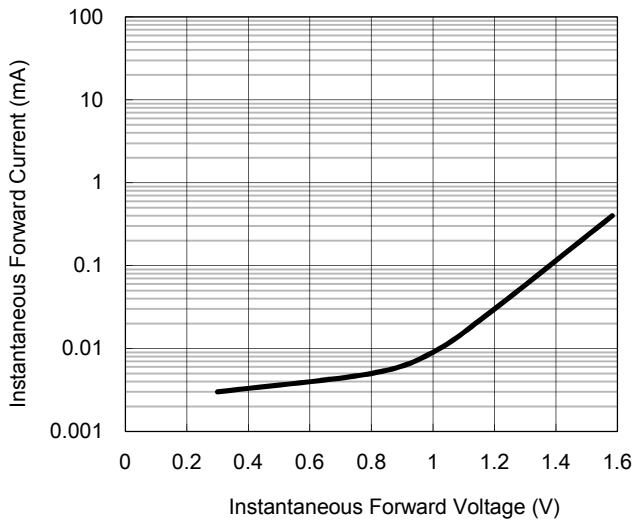
1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>		
<b>PART NO.</b>	<b>PACKAGE</b>	<b>PACKING</b>
1N4148W RHG	SOD-123F	3K / 7" Reel
1N4148W RH	SOD-123F	3K / 7" Reel
1N4448W RHG	SOD-123F	3K / 7" Reel
1N4448W RH	SOD-123F	3K / 7" Reel
1N914BW RHG	SOD-123F	3K / 7" Reel
1N914BW RH	SOD-123F	3K / 7" Reel

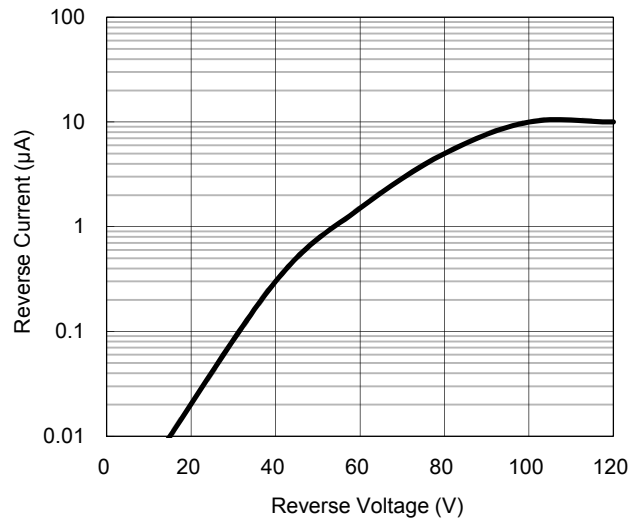
**CHARACTERISTICS CURVES**

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

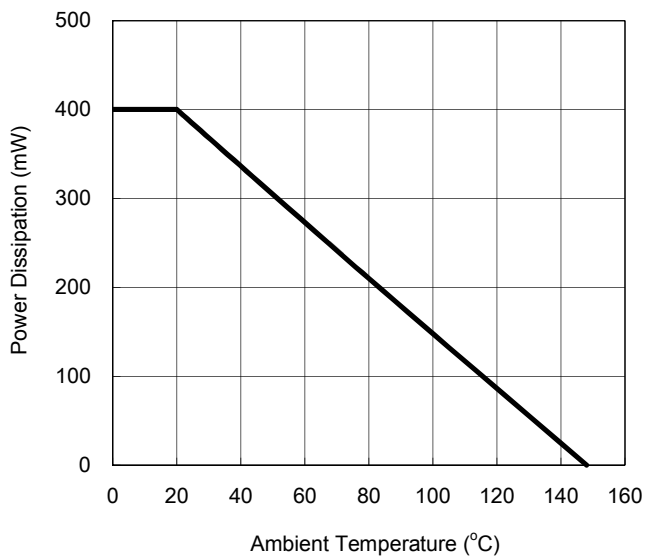
**Fig.1 Typical Forward Characteristics**



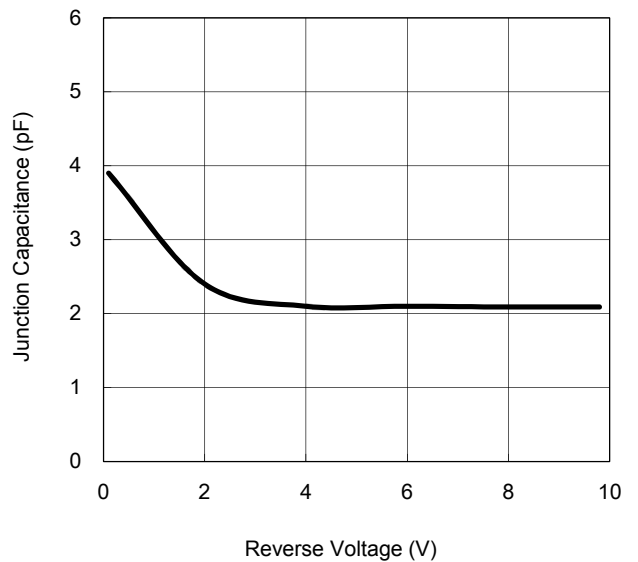
**Fig.2 Reverse Current VS. Reverse Voltage**



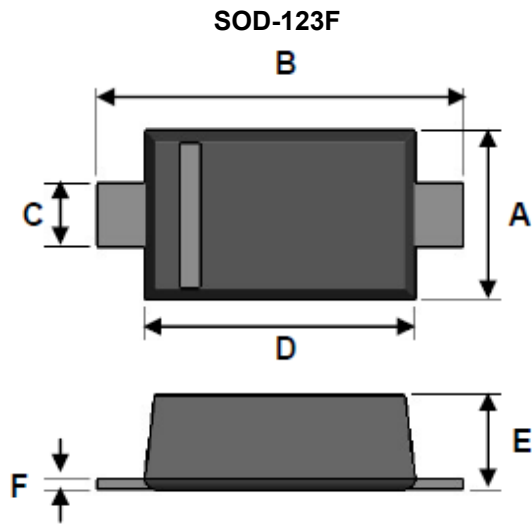
**Fig.3 Admissible Power Dissipation Curve**



**Fig.4 Typical Junction Capacitance**

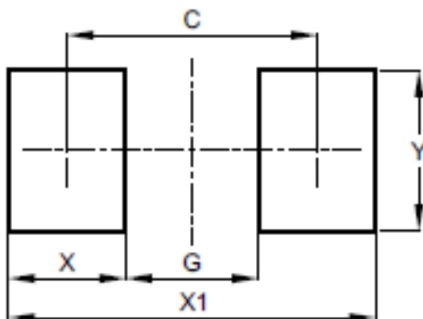


**PACKAGE OUTLINE DIMENSION**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.067
B	3.30	3.90	0.130	0.154
C	0.50	0.70	0.020	0.028
D	2.50	2.70	0.098	0.106
E	0.80	1.15	0.031	0.045
F	0.05	0.20	0.002	0.008

**SUGGEST PAD LAYOUT**



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
C	2.86	0.113
G	1.52	0.060
X	1.34	0.053
X1	4.20	0.165
Y	1.80	0.071

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