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°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=1.0μs		I_{FSM}	2	A
Junction temperature range		T_J	-65 to +150	°C
Storage temperature range		T_{STG}	-65 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	450	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage (1)	1N4448W, 1N914BW	I_F = 5mA, T_J = 25°C	V_F	0.62	0.72	V
	1N4148W	I_F = 10mA, T_J = 25°C		-	1.00	
	1N4448W, 1N914BW	I_F = 100mA, T_J = 25°C		-	1.00	
Reverse voltage		I_R=100μA, T_J = 25°C	V_R	100	-	V
		I_R=5μA, T_J = 25°C		75	-	
Reverse leakage current (2)		V_R=20V T_J = 25°C	I_R	-	25	nA
		V_R=75V T_J = 25°C		-	5	μA
Junction capacitance		1 MHz, V_R=0V	C_J	-	4	pF
Reverse recovery time		I_F=10mA, I_R=60mA, R_L=100Ω, I_{RR}=1mA	t_{rr}	-	4	ns

Notes:

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

ORDERING INFORMATION

PART NO.	PACKAGE	PACKING
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°C unless otherwise noted)

Fig.1 Typical Forward Characteristics

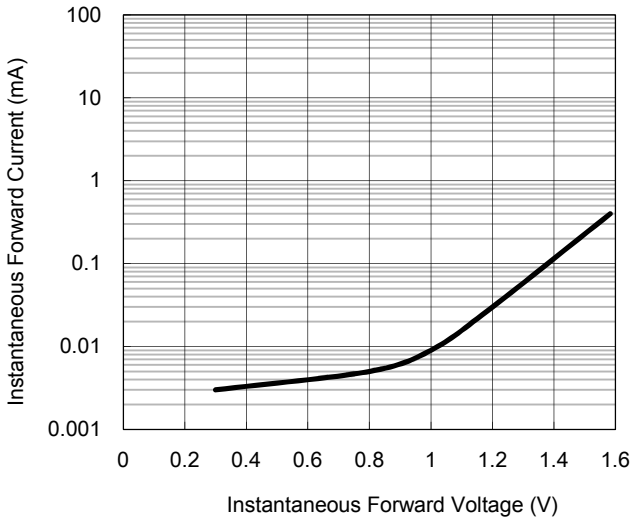


Fig.2 Reverse Current VS. Reverse Voltage

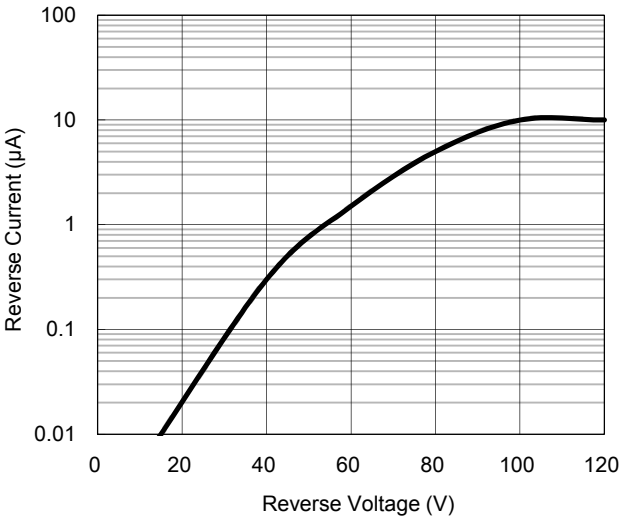


Fig.3 Admissible Power Dissipation Curve

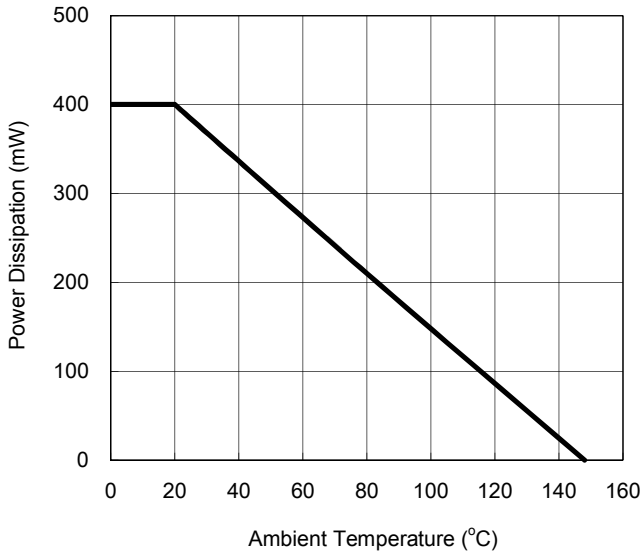
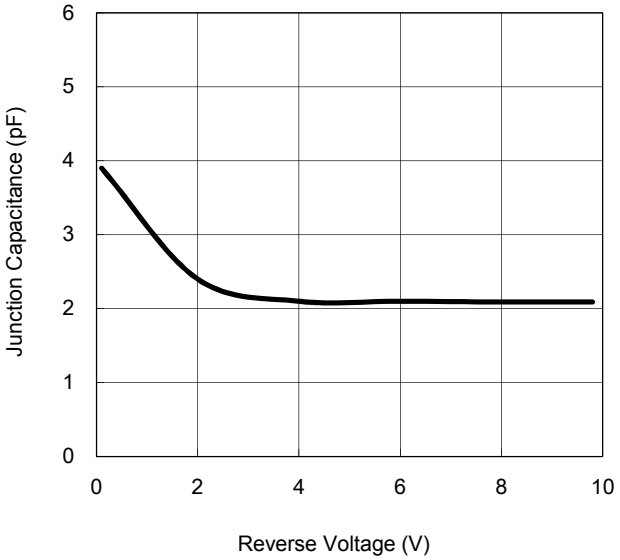
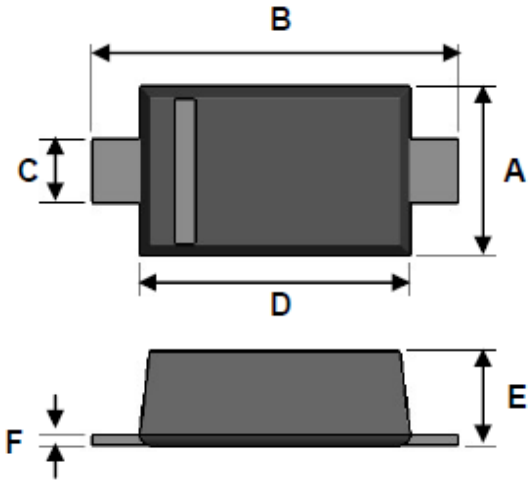


Fig.4 Typical Junction Capacitance



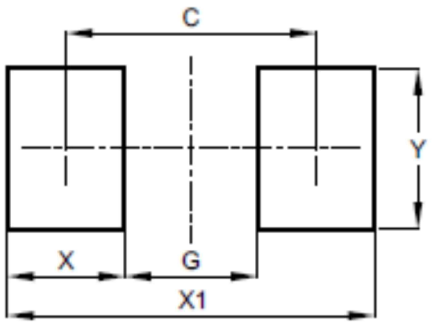
PACKAGE OUTLINE DIMENSION

SOD-123F



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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