1A, 400V - 1000V Standard Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

MECHANICAL DATA

- Case: SOD-123FL
- Molding compound meets UL 94V-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: 0.016g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	400 - 1000	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	SOD-123FL	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-123FL

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**S1GFL**	**S1JFL**	**S1MFL**	**UNIT**
Marking code on the device		SGF	SJF	SMF	
Repetitive peak reverse voltage	V_{RRM}	400	600	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	280	420	700	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	$R_{\Theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	85	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	I_F = 1A, T_J = 25°C	V_F	-	1.1	V
Reverse current @ rated V_R[2]	T_J = 25°C	I_R	-	1	μA
	T_J = 125°C		-	50	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	7	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
S1xFL	SOD-123FL	10,000 / Tape & Reel

Notes:

1. “x” defines voltage from 400V(S1GFL) to 1000V(S1MFL)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

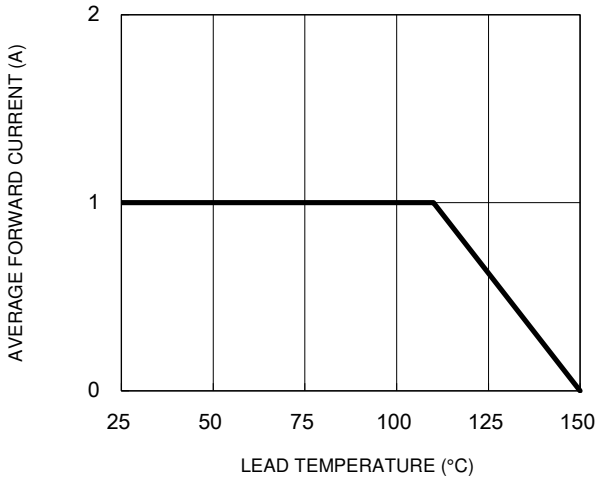


Fig.2 Typical Junction Capacitance

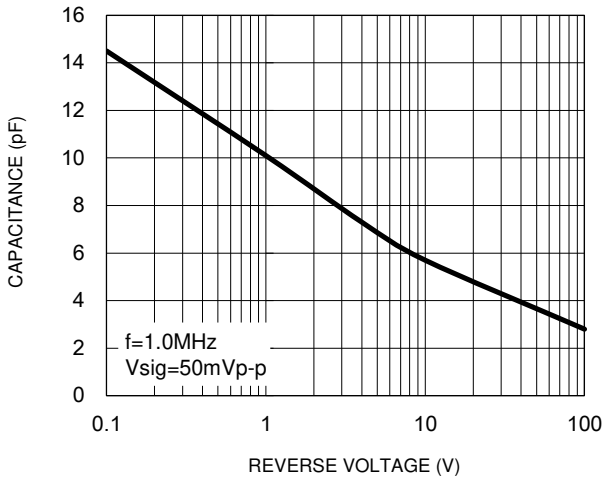


Fig.3 Typical Reverse Characteristics

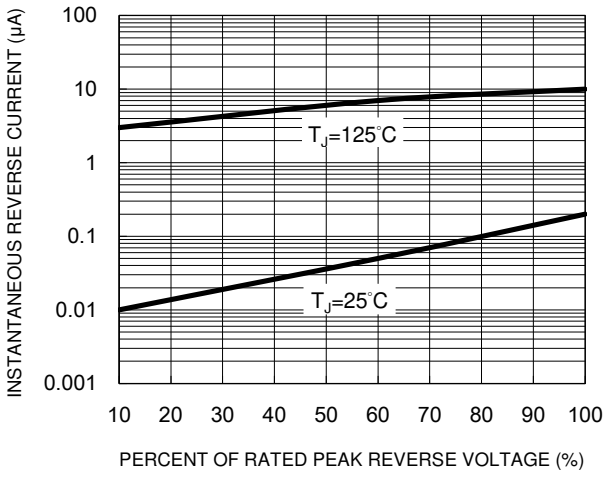


Fig.4 Typical Forward Characteristics

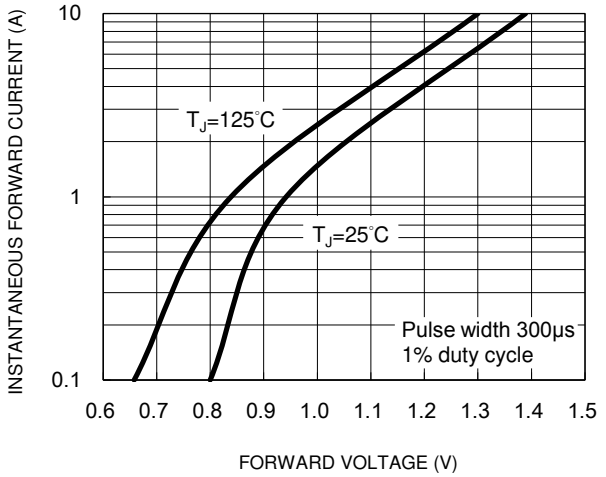
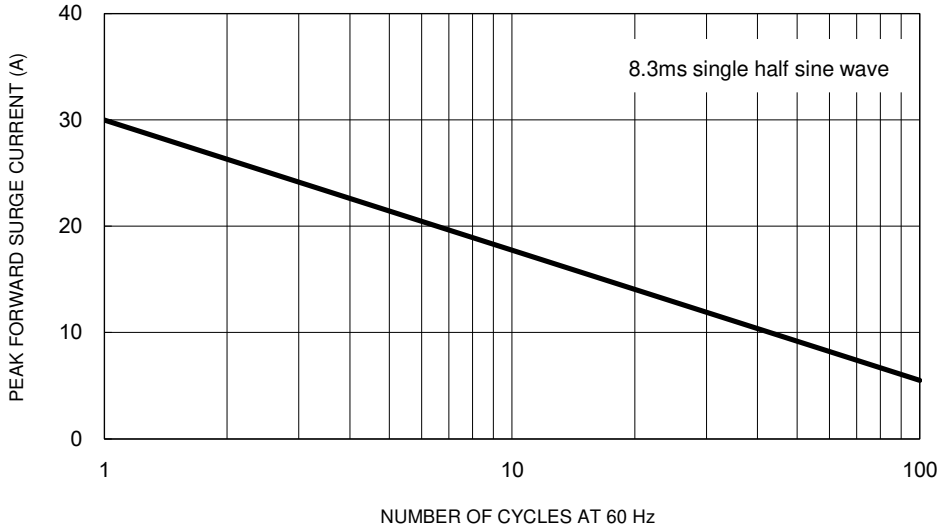


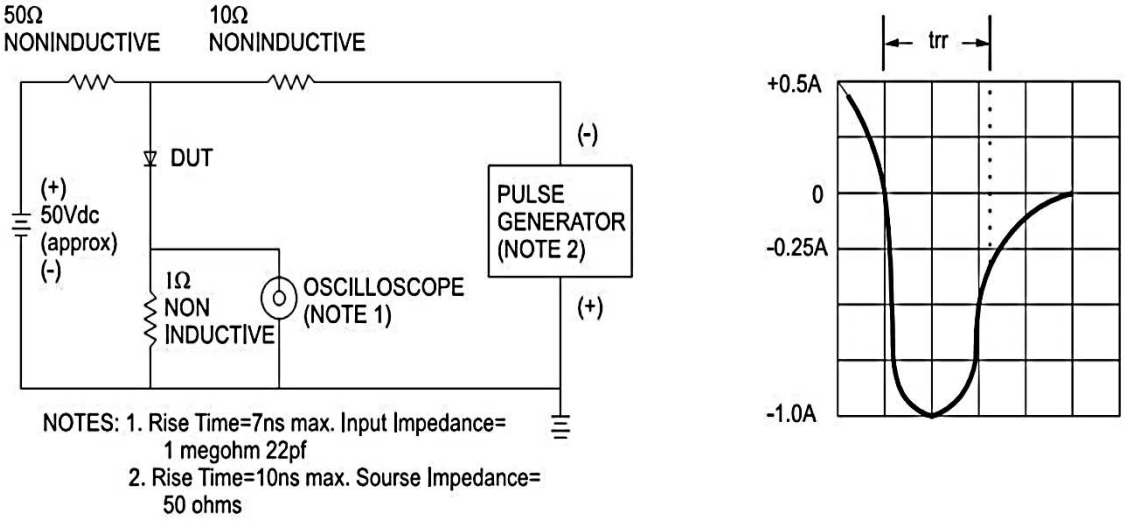
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

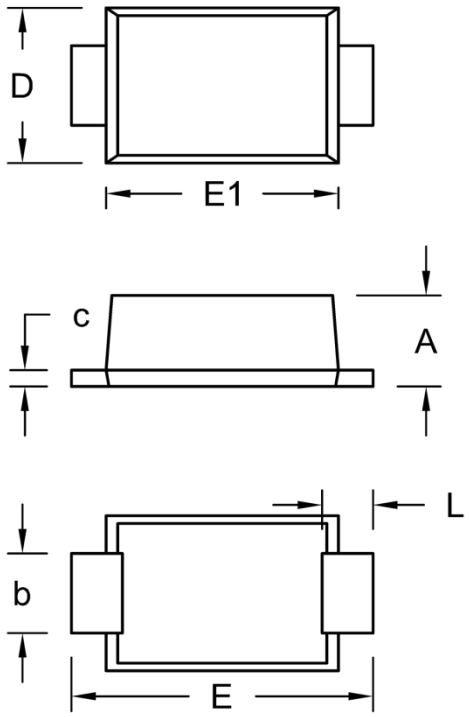
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



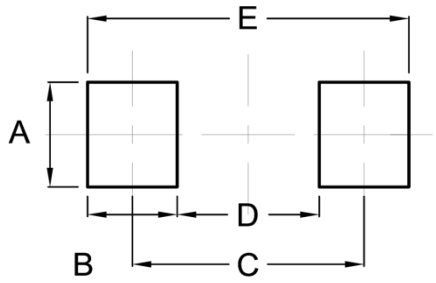
PACKAGE OUTLINE DIMENSIONS

SOD-123FL



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.88	1.35	0.035	0.053
b	0.80	1.15	0.031	0.045
c	0.10	0.30	0.004	0.012
D	1.70	2.10	0.067	0.083
E	3.45	3.95	0.136	0.156
E1	2.60	3.10	0.102	0.122
L	0.30	0.90	0.012	0.035

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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