

200mW, SMD High Speed Switching Diode

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- RoHS Compliant
- 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-523F
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 1.68 ± 0.5mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	200	mA
V_{RRM}	100	V
I_{FSM}	500	mA
V_F at $I_F = 100\text{mA}$	1.2	V
$T_{J\text{MAX}}$	150	°C
Package	SOD-523F	
Configuration	Single die	



SOD-523F



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	1SS400	UNIT
Marking code on the device		A	
Power dissipation	P_D	200	mW
Repetitive peak reverse voltage	V_{RRM}	100	V
Reverse voltage	V_R	100	V
Forward current	I_F	200	mA
Non-repetitive peak forward surge current	I_{FSM}	500	mA
Junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 100\text{mA}$, $T_J = 25^\circ\text{C}$	V_F	-	1.2	V
Breakdown voltage	$I_R = 100\mu\text{A}$, $T_J = 25^\circ\text{C}$	V_{BR}	100	-	V
Reverse current @ rated V_R ⁽²⁾	$V_R = 80\text{V}$, $T_J = 25^\circ\text{C}$	I_R	-	0.1	μA
Junction capacitance	$V_R = 0.5\text{V}$, $f = 1\text{MHz}$	C_J	-	4	pF
Reverse recovery time	$I_F = 10\text{mA}$, $V_R = 6\text{V}$, $R_L = 100\ \Omega$	t_{rr}	-	4	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
1SS400 RK	SOD-523F	3,000 / 7" Tape & Reel
1SS400 RJ	SOD-523F	8,000 / 7" Tape & Reel
1SS400 RKG	SOD-523F	3,000 / 7" Tape & Reel
1SS400 RJG	SOD-523F	8,000 / 7" Tape & Reel

Notes:

1. "G" means green compound (halogen free)

CHARACTERISTICS CURVES

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

Fig.1 Typical Junction Capacitance

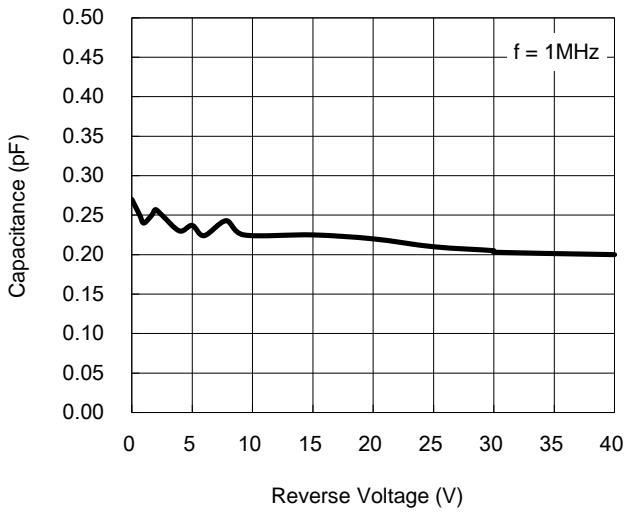


Fig.2 Typical Forward Characteristics

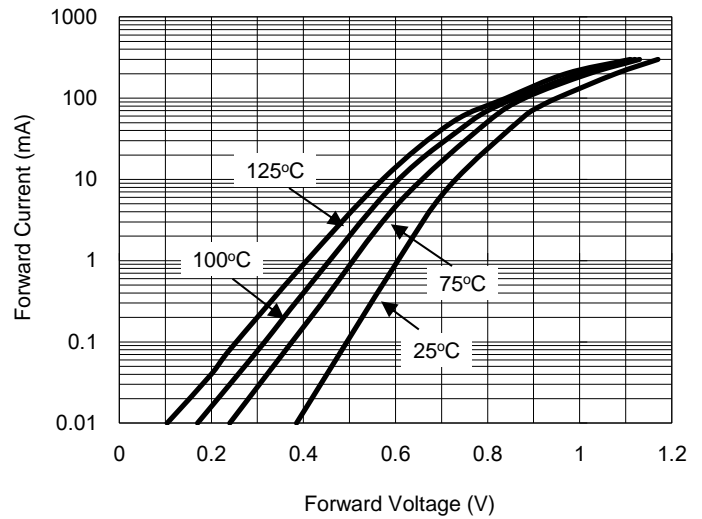


Fig.3 Power Derating Curve

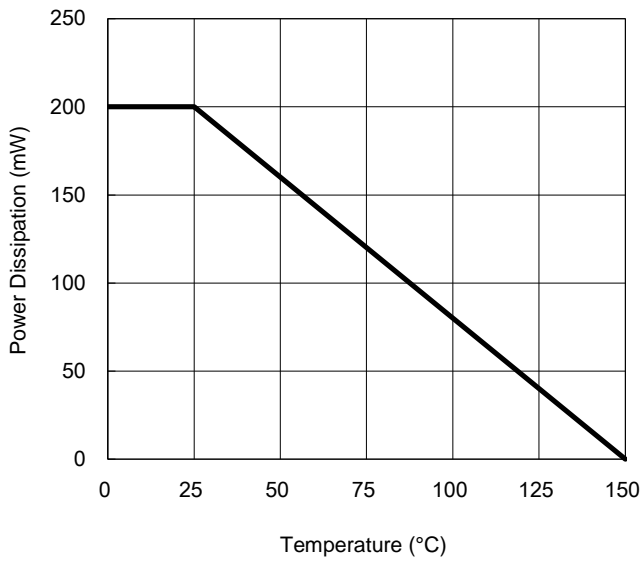
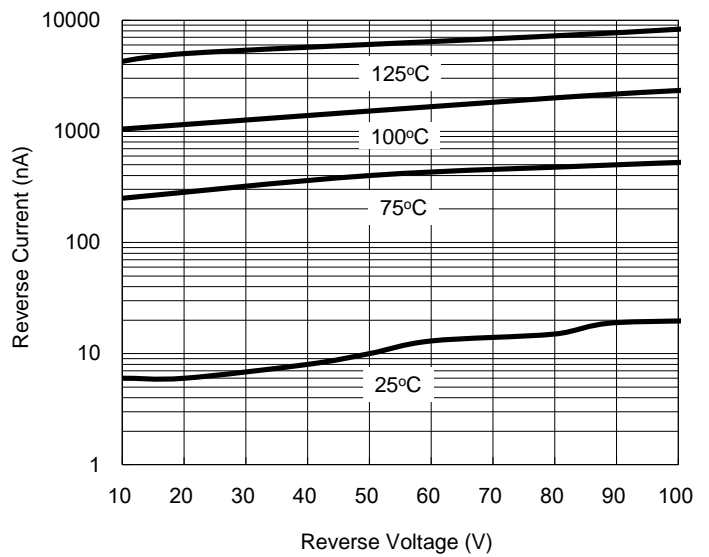
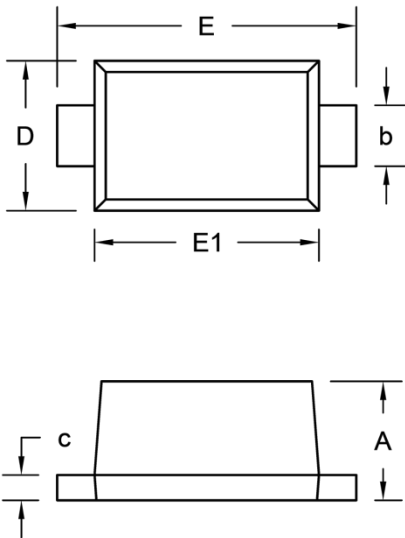


Fig.4 Typical Reverse Characteristics



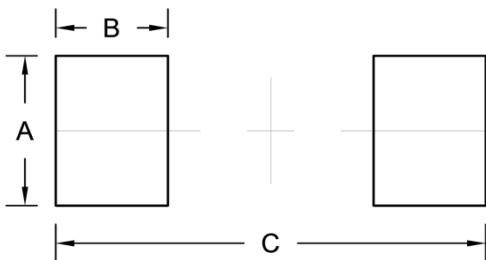
PACKAGE OUTLINE DIMENSIONS

SOD-523F



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.50	0.77	0.020	0.030
b	0.25	0.40	0.010	0.016
c	0.07	0.20	0.003	0.008
D	0.70	0.90	0.028	0.035
E	1.50	1.70	0.059	0.067
E1	1.10	1.30	0.043	0.051

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.80	0.031
B	0.60	0.024
C	2.30	0.091

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

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