SURFACE MOUNT FAST SWITCHING DIODE

NEW PRODUCT

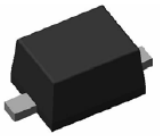
Features

- Fast Switching Speed: $t_{rr} \leq 4.0$ns
- Low Leakage Current: $I_R \leq 25$nA
- Low Capacitance: $C_T \leq 4$pF
- Flat Lead for High Thermal Efficiency
- Small Surface Mount Package
- **Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD323F
- Case Material: Molded Plastic, "Green Molding Compound". UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Copper Alloy leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.007 grams (approximate)

SOD323F



Top View

Ordering Information (Note 3)

Part Number	Qualification	Case	Packaging
1N4448WSF-7	Commercial	SOD323F	3000/Tape & Reel
1N4448WSFQ-7	Automotive	SOD323F	3000/Tape & Reel

Notes:
1. No purposefully added lead. Halogen and Antimony Free.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
3. For packaging details, go to our website at http://www.diodes.com.

Marking Information

TK = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Y = 2011)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018
Code	Y	Z	A	B	C	D	E	F

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

NEW PRODUCT

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V_{RM}	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	75	V
RMS Reverse Voltage		$V_{R(RMS)}$	53	V
Forward Continuous Current		I_{FM}	500	mA
Average Rectified Output Current		I_O	250	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I_{FSM}	4 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P_D	400	mW
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	313	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	75	—	V	I_R = 100μA
Forward Voltage	V_F	0.62	0.72	V	I_F = 5.0mA
		—	0.855		I_F = 10mA
		—	1.0		I_F = 100mA
		—	1.25		I_F = 150mA
Leakage Current (Note 5)	I_R	—	2.5	μA	V_R = 75V
		—	50	μA	V_R = 75V, T_J = 150°C
		—	30	μA	V_R = 25V, T_J = 150°C
		—	25	nA	V_R = 20V
Total Capacitance	C_T	—	4.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	4.0	ns	I_F = I_R = 10mA, I_{rr} = 0.1 x I_R, R_L = 100Ω

Notes: 4. Part mounted on FR-4 PC board with minimum recommended pad layouts, which can be found on our website at http://www/diodes.com.
5. Short duration pulse test used to minimize self-heating.

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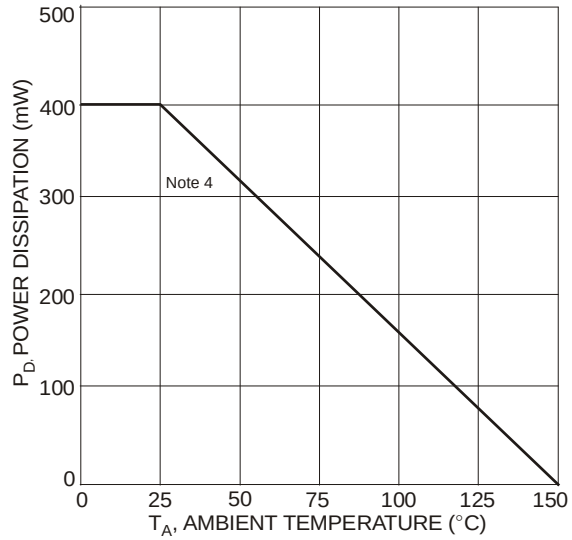


Fig. 1 Forward Current Derating Curve

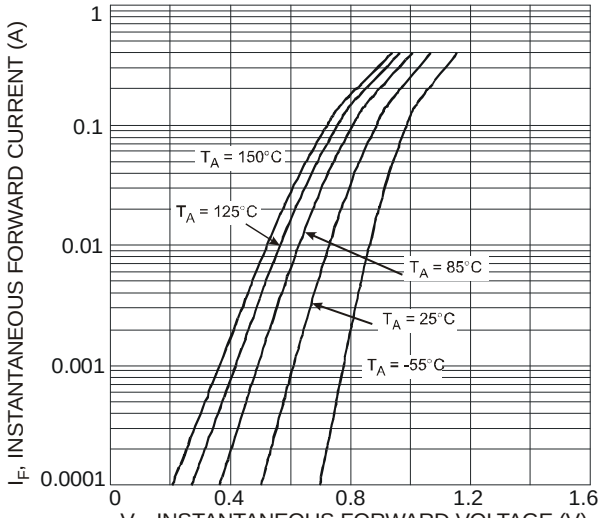


Fig. 2 Typical Forward Characteristics

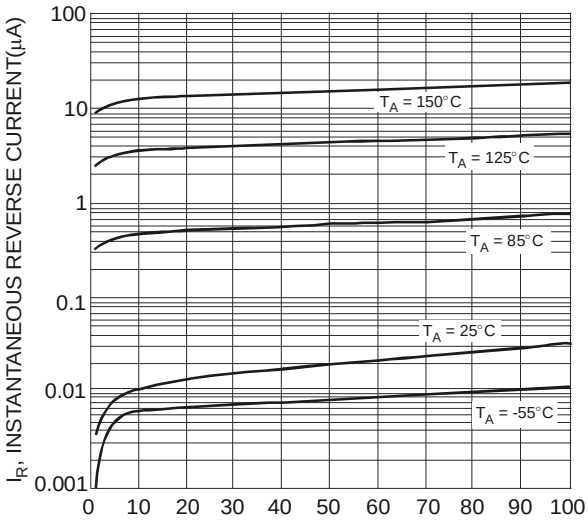


Fig. 3 Typical Reverse Characteristics

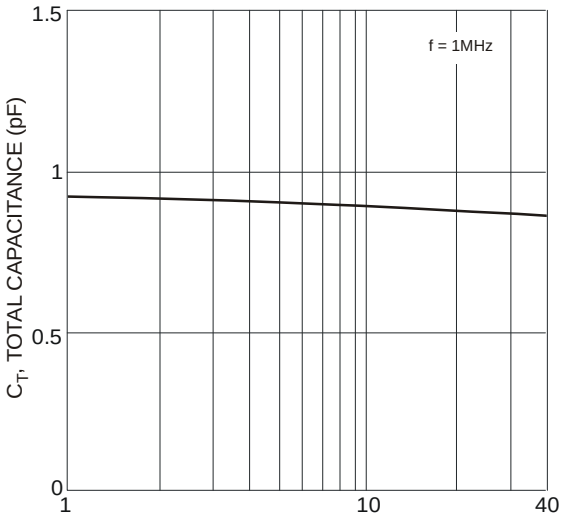
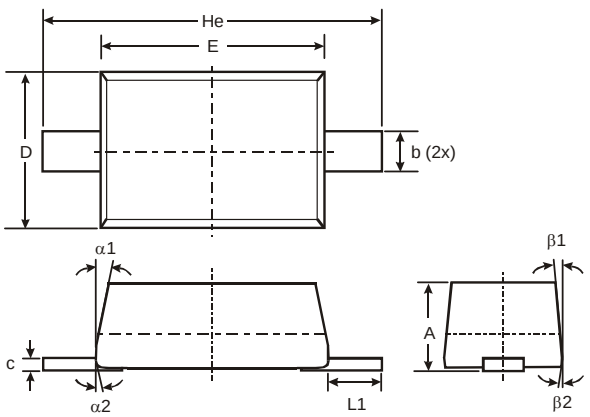


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions



SOD323F			
Dim	**Min**	**Max**	**Typ**
A	0.60	0.75	–
b	0.25	0.35	–
c	0.05	0.26	–
D	1.15	1.35	1.25
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L1	0.30	0.50	0.40
α1	–	–	7°
α2	–	–	3°
β1	–	–	7°
β2	–	–	3°
All Dimensions in mm			

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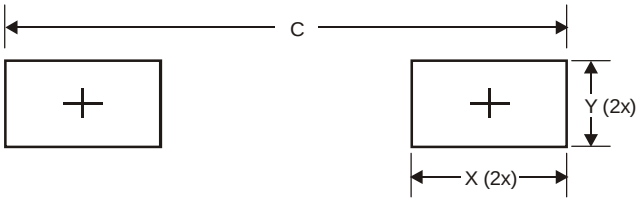
Suggested Pad Layout



Dimensions	Value (in mm)
X	0.710
Y	0.403
C	2.700

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