

150mA, 100V High Speed Switching Diode

FEATURES

- AEC-Q101 qualified
- Fast switching speed
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

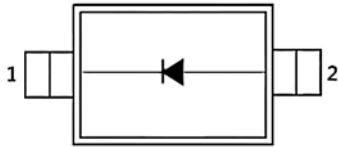
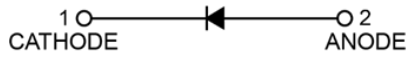
- High-speed switching
- General-purpose switching

MECHANICAL DATA

- Case: SOD-323
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 4.5mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	150	mA
V_{RRM}	100	V
I_{FSM}	2	A
$T_{J\ MAX}$	150	°C
V_F at $I_F=150mA$	1.25	V
Configuration	Single die	



PACKAGE: SOD-323	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

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

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation ⁽¹⁾	P_D	200	mW
Repetitive peak reverse voltage	V_{RRM}	100	V
Average rectified output current	I_O	150	mA
Forward continuous current	I_{FM}	300	mA
Non-repetitive peak forward surge current	$t = 1s$	1	A
	$t = 1\mu s$	2	A
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

Note:

1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance ⁽¹⁾	$R_{\theta JA}$	625	°C/W

Thermal Performance Note:

- Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint

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

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1\text{mA}$	V_F	-	-	0.715	V
	$I_F = 10\text{mA}$		-	-	0.855	
	$I_F = 50\text{mA}$		-	-	1.000	
	$I_F = 150\text{mA}$		-	-	1.250	
Reverse breakdown voltage	$I_R = 100\mu\text{A}$	V_{BR}	100	-	-	V
Reverse current ⁽²⁾	$V_R = 75\text{V}$	I_R	-	-	0.5	μA
	$V_R = 75\text{V}, T_J = 150^\circ\text{C}$		-	-	50	μA
Junction capacitance	$f = 1\text{MHz}, V_R = 0\text{V}$	C_J	-	-	2	pF
Reverse recovery time	$I_F = I_R = 10\text{mA},$ $I_{RR} = 1\text{mA}, R_L = 100\Omega$	t_{rr}	-	-	4	ns

Notes:

- Pulse test with $PW=0.3\text{ ms}$
- Pulse test with $PW=30\text{ ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
1N4148WSH RRG	SOD-323	3,000 / 7" Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Power Dissipation Curve

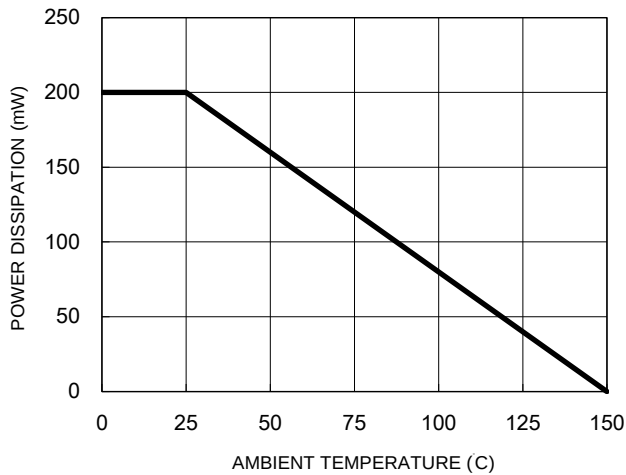


Fig.3 Typical Reverse Characteristics

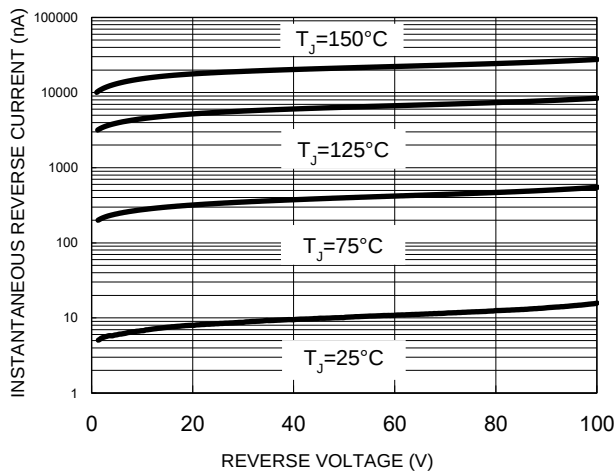


Fig.2 Typical Junction Capacitance

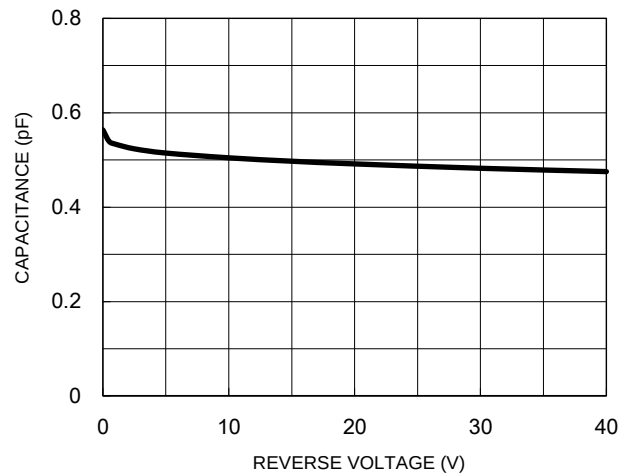
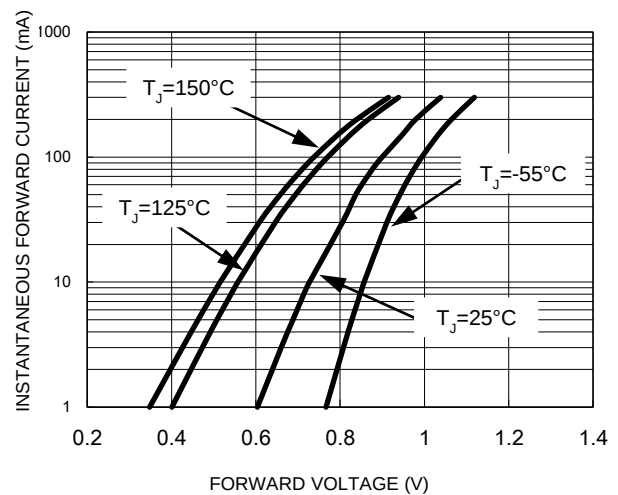
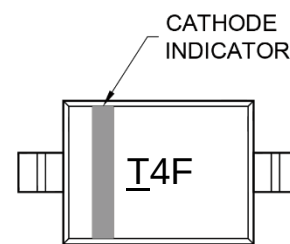
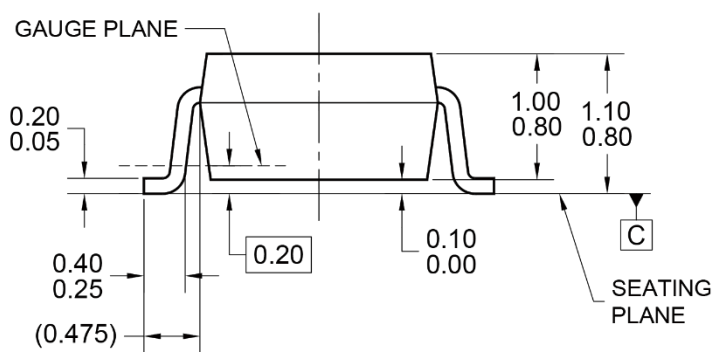
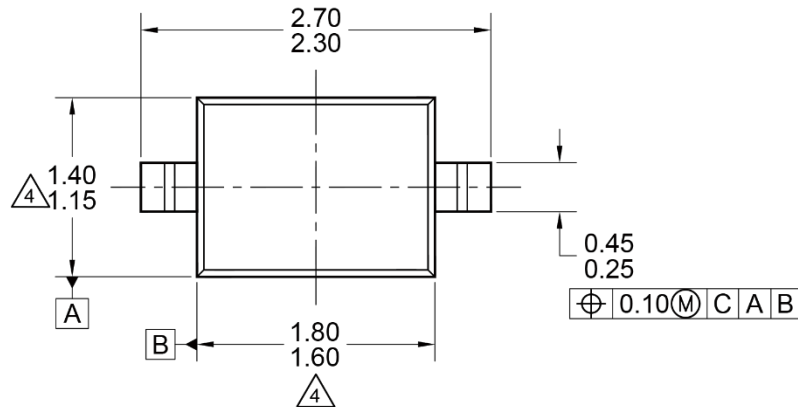


Fig.4 Typical Forward Characteristics



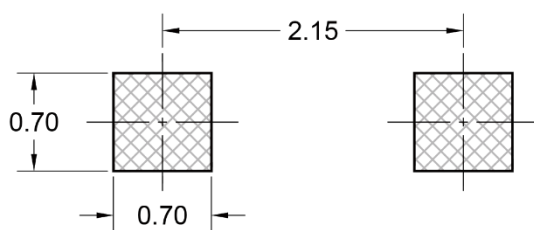
PACKAGE OUTLINE DIMENSION

SOD-323



MARKING DIAGRAM

14 = Device marking
F = Factory code



SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A, SC-76A.
- MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
- DWG NO. REF: HQ2SD07-SOD323-113 REV A.

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