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

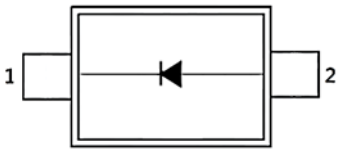
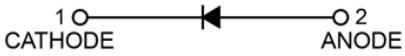
- High-speed switching
- General-purpose switching

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	

MECHANICAL DATA

- Case: SOD-523F
- 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: 1.60mg (approximately)

Pb-Free RoHS COMPLIANT HALOGEN FREE

PACKAGE: SOD-523F	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	I_{FSM}	1	A
	t = 1μs		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:

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

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

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

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
1N4148WTH RSG	SOD-523F	8,000 / 7” Tape & Reel

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Power Dissipation Curve

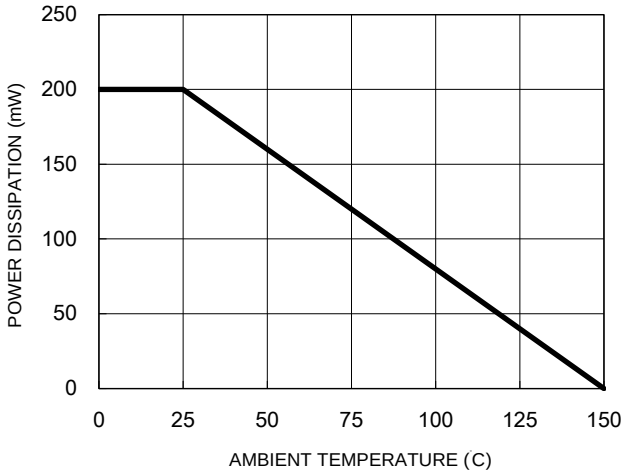


Fig.2 Typical Junction Capacitance

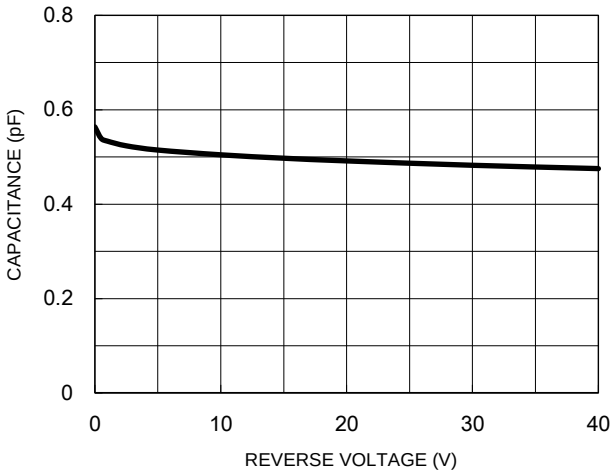


Fig.3 Typical Reverse Characteristics

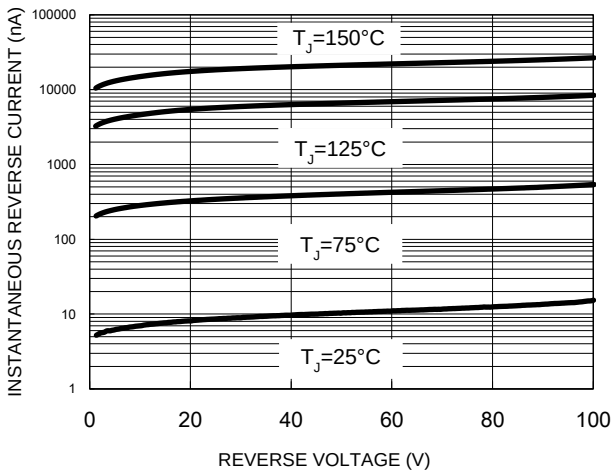
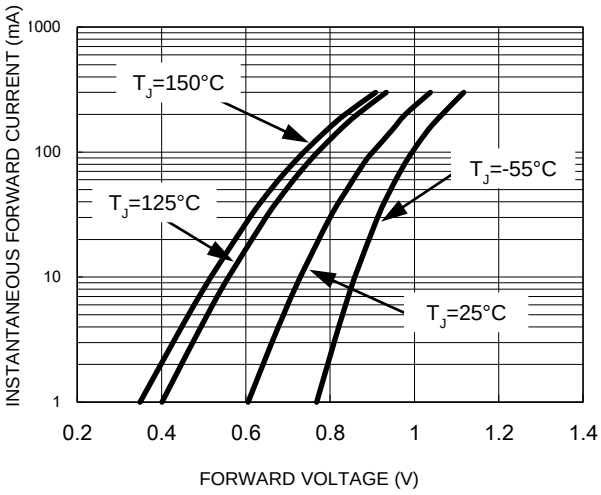
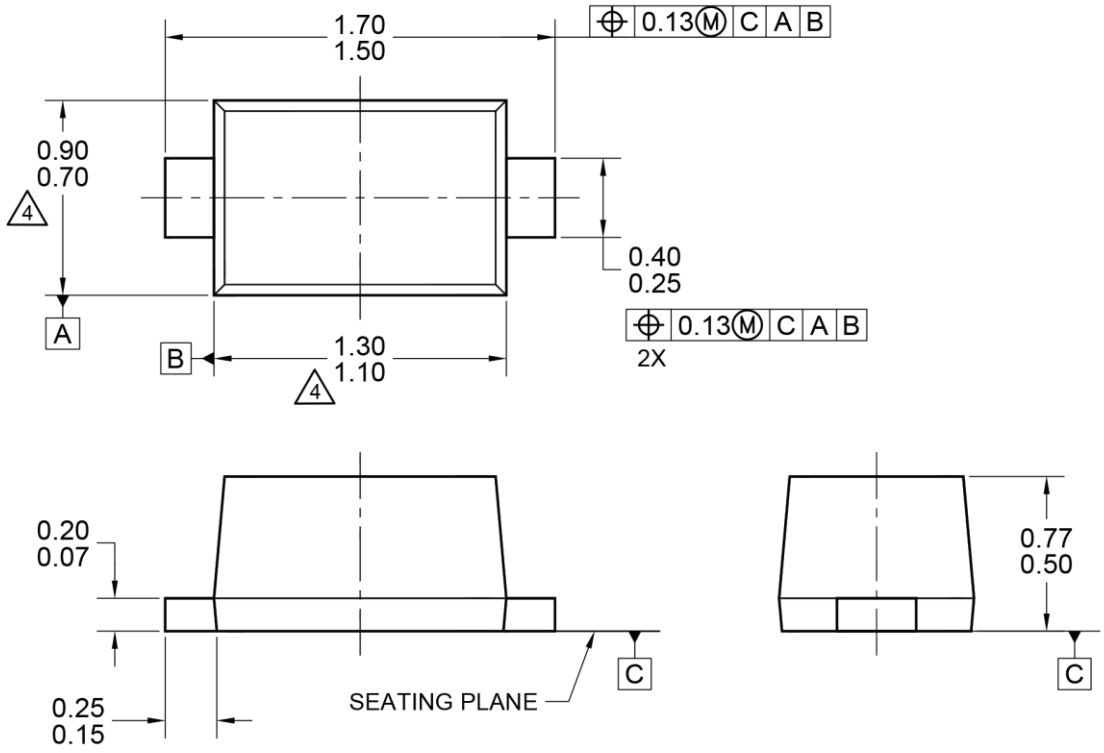


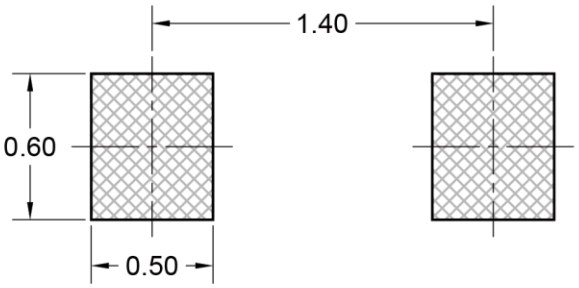
Fig.4 Typical Forward Characteristics



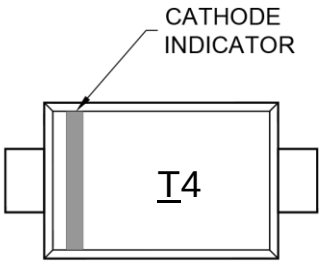
PACKAGE OUTLINE DIMENSION

SOD-523F





SUGGESTED PAD LAYOUT



MARKING DIAGRAM

T4 = Device marking

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A, SC-79.
4. MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD523F-047 REV A.

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