

200mA, 250V High Speed Switching Diode

FEATURES

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

APPLICATIONS

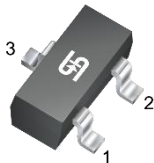
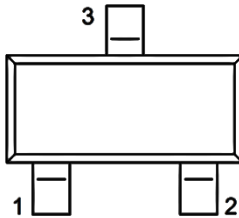
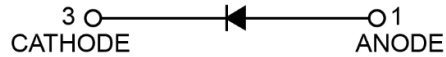
- High-speed switching at high voltage
- High-voltage general-purpose switching
- Voltage clamping
- Reverse polarity protection

MECHANICAL DATA

- Case: SOT-23
- 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
- Weight: 8.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	200	mA
V_{RRM}	250	V
I_{FSM}	4	A
$T_{J\ MAX}$	150	°C
V_F at $I_F=200mA$	1.25	V
Configuration	Single die	



PACKAGE: SOT-23	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	350	mW
Repetitive peak reverse voltage	V_{RRM}	250	V
Forward current	I_F	200	mA
Repetitive peak forward current	I_{FRM}	625	mA
Non-repetitive peak forward surge current	I_{FSM}	4	A
	$t = 1\mu s$		
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⁾	$R_{\theta JA}$	357	°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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 100\text{mA}$	V_F	-	-	1.00	V
	$I_F = 200\text{mA}$		-	-	1.25	
Reverse breakdown voltage	$I_R = 100\mu\text{A}$	V_{BR}	250	-	-	V
Reverse current ⁽²⁾	$V_R = 200\text{V}$	I_R	-	-	0.1	μA
	$V_R = 200\text{V}, T_J = 150^\circ\text{C}$		-	-	100	μA
Junction capacitance	$f = 1\text{MHz}, V_R = 0\text{V}$	C_J	-	-	5	pF
Reverse recovery time	$I_F = I_R = 30\text{mA},$ $I_{RR} = 3\text{mA}, R_L = 100\Omega$	t_{rr}	-	-	50	ns

Notes:

1. Pulse test with $PW=0.3\text{ ms}$
2. Pulse test with $PW=30\text{ ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
BAS21H RFG	SOT-23	3,000 / 7" Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Power Dissipation Curve

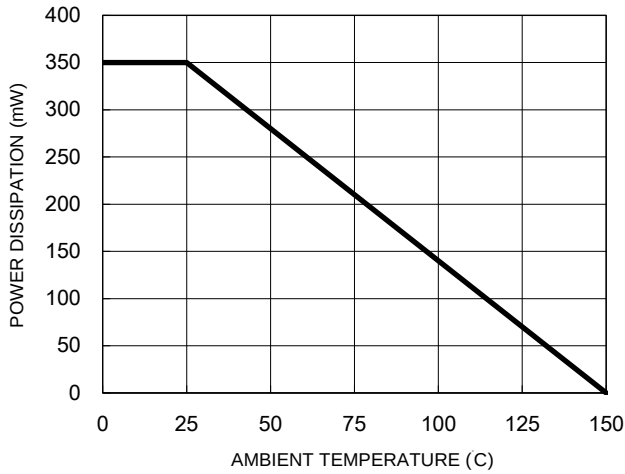


Fig.2 Typical Junction Capacitance

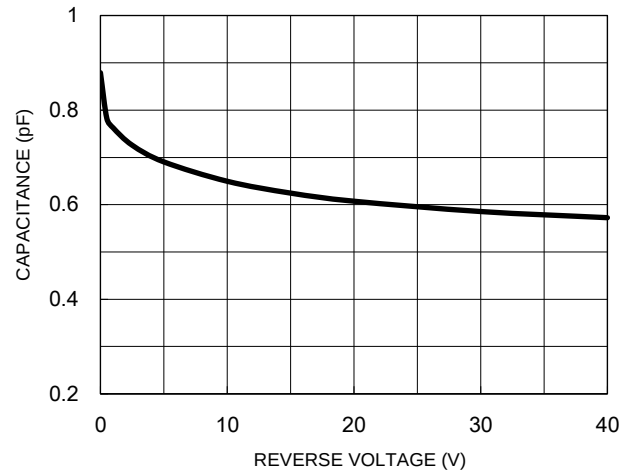


Fig.3 Typical Reverse Characteristics

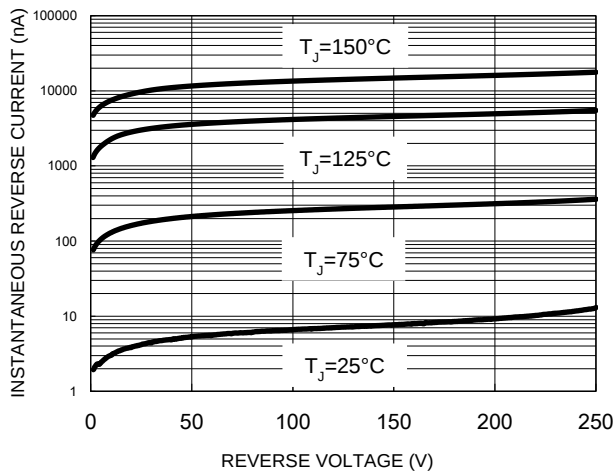
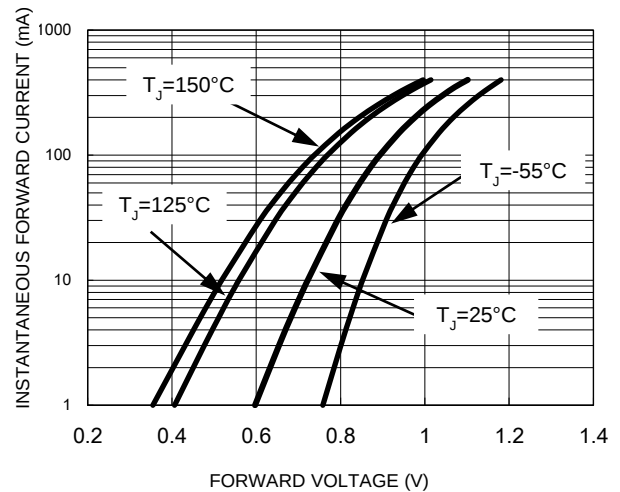
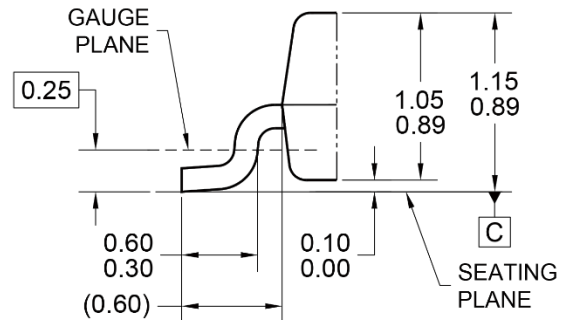
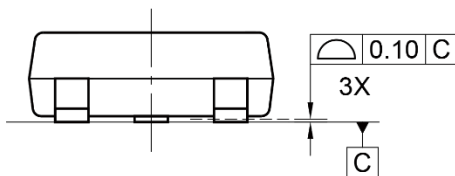
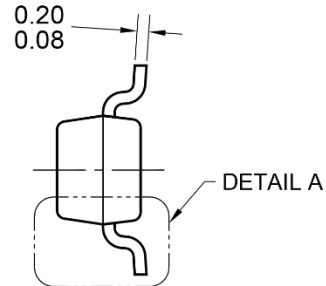
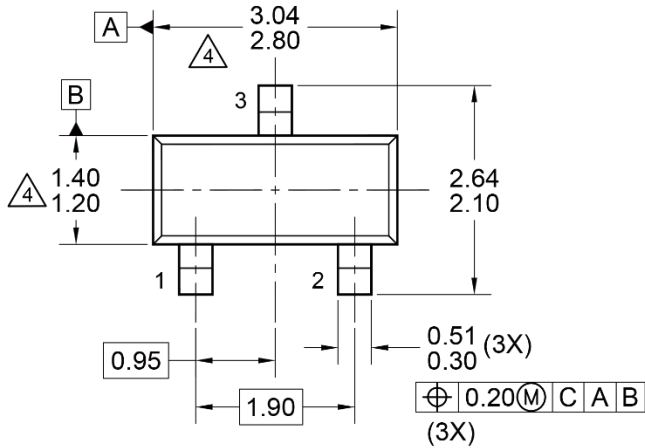


Fig.4 Typical Forward Characteristics

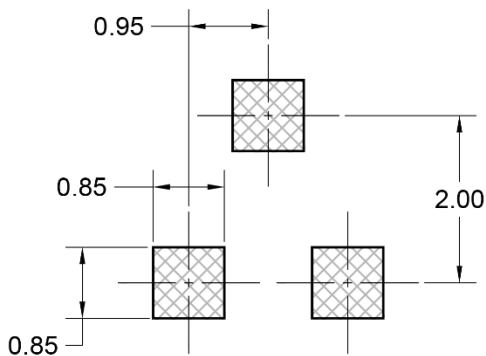


PACKAGE OUTLINE DIMENSIONS

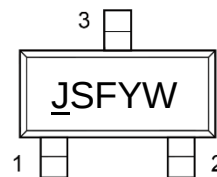
SOT-23



DETAIL A, ROTATED -90°
(SCALE 2:1)



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC TO-236, ISSUE H, VARIATION AA.

4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOT23JEDEC-104 REV B.

JS = Device marking
F = Factory code
Y = Year code
W = Bi-Week code (A~Z)

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