

200mA, 30V Schottky Barrier Diode

FEATURES

- Fast switching speed
- Surface mount device type
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

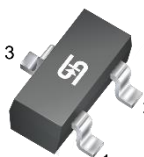
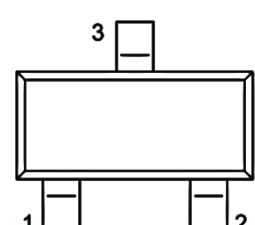
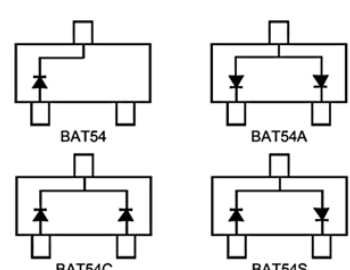
- Adapters
- For switching power supply
- Inverter

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 1A whisker test
- Weight: 8.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	200	mA
V_{RRM}	30	V
I_{FSM}	600	mA
V_F at $I_F = 100mA$	1	V
$T_J \text{ MAX}$	125	°C



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	P_D	200	mW
Repetitive peak reverse voltage	V_{RRM}	30	V
Repetitive peak forward current ($t_p \leq 1s; \delta \leq 0.5$)	I_{FRM}	300	mA
Forward current	I_F	200	mA
Non-Repetitive peak forward surge current @ $t < 1.0s$	I_{FSM}	600	mA
Junction temperature range	T_J	-55 to +125	°C
Storage temperature range	T_{STG}	-55 to +125	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	500	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 0.1\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	0.24	V
	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$		-	0.32	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$		-	0.40	V
	$I_F = 30\text{mA}, T_J = 25^\circ\text{C}$		-	0.50	V
	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$		-	1.00	V
Reverse voltage	$I_R = 100\text{ }\mu\text{A}, T_J = 25^\circ\text{C}$	V_R	30	-	V
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 25\text{ V}, T_J = 25^\circ\text{C}$	I_R	-	2	μA
Junction capacitance	$f = 1\text{MHz}, V_R = 1\text{V}$	C_J	-	10	pF
Reverse recovery time	$I_F = I_R = 10\text{mA},$ $R_L = 100\Omega, I_{rr} = 1\text{mA}$	t_{rr}	-	5	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	DEVICE MARKING
BAT54 RFG	SOT-23	3K / 7" Reel	KL1
BAT54A RFG	SOT-23	3K / 7" Reel	KL2
BAT54C RFG	SOT-23	3K / 7" Reel	KL3
BAT54S RFG	SOT-23	3K / 7" Reel	KL4

CHARACTERISTICS CURVES

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

Fig.1 Typical Forward Characteristics

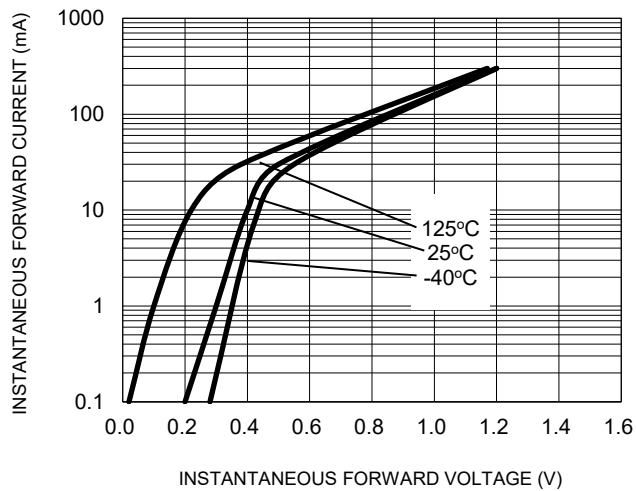


Fig.2 Typical Reverse Characteristics

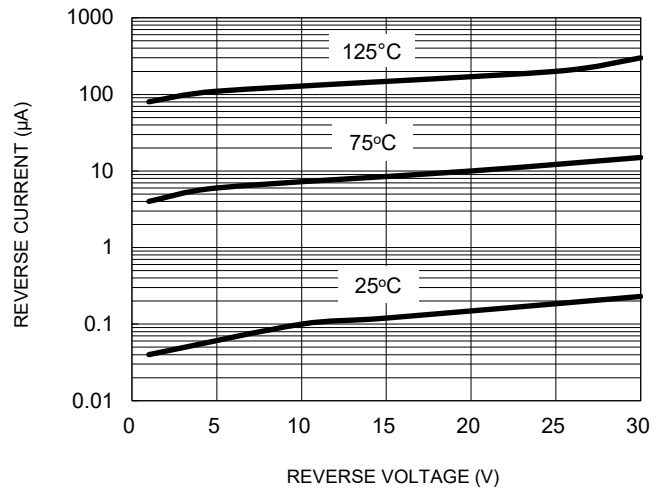


Fig.3 Admissible Power Dissipation Curve

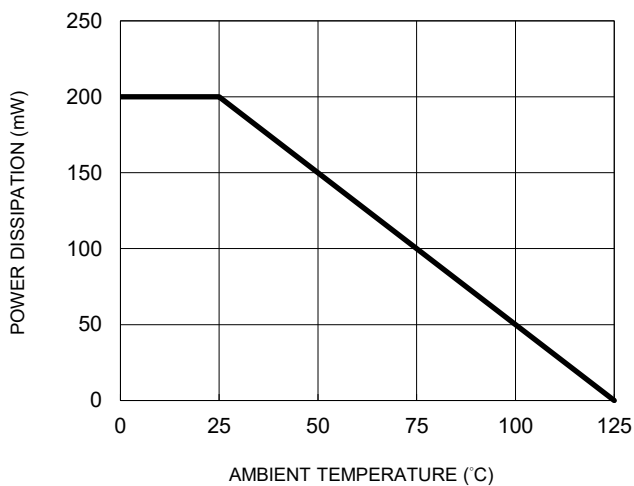
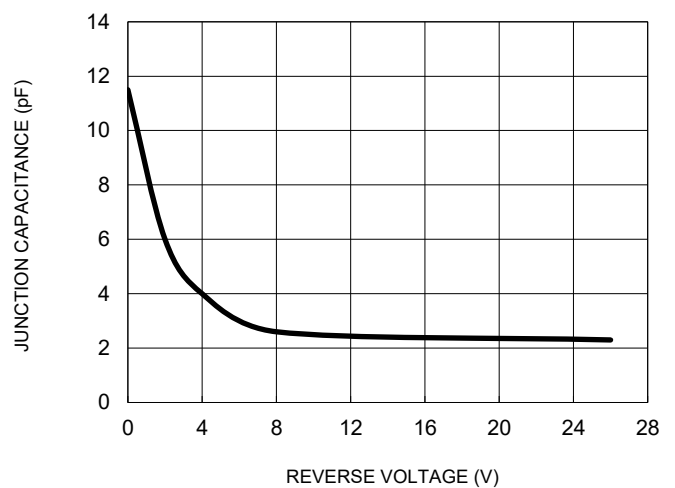
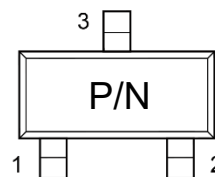
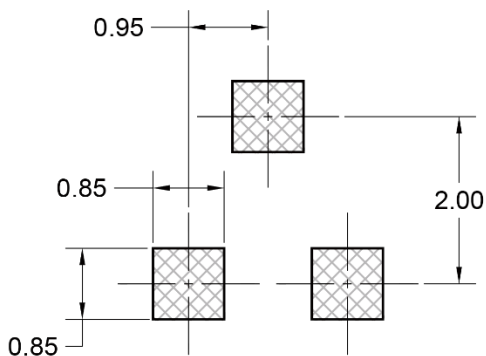
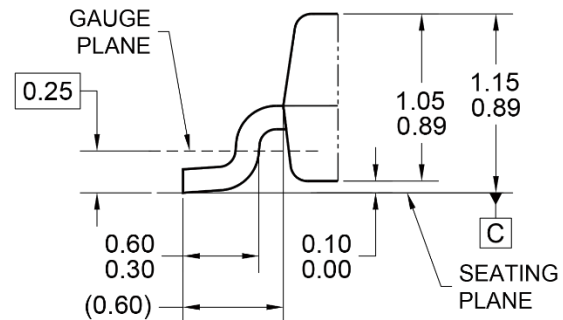
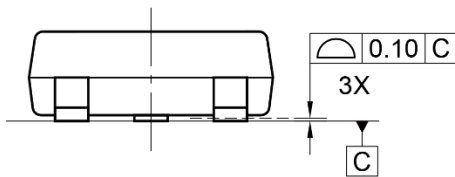
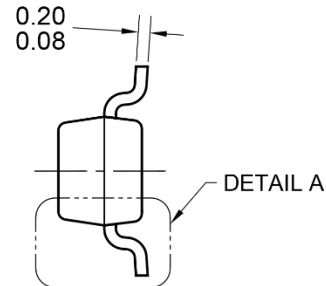
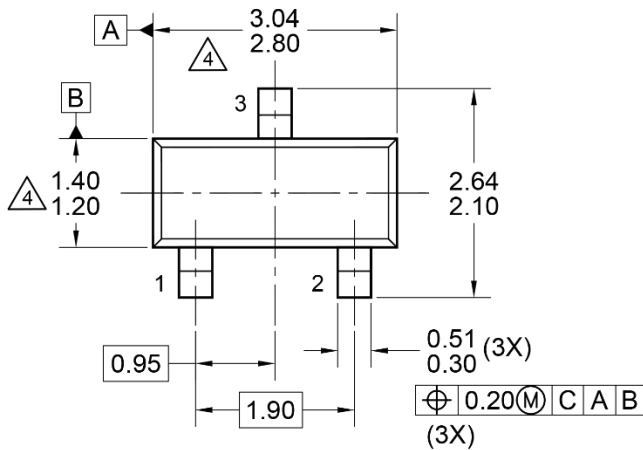


Fig.4 Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS

SOT-23



MARKING DIAGRAM

P/N = 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: 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.

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