BAT54SWT1

Preferred Device

Dual Series Schottky Barrier Diodes

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand held and portable applications where space is limited.

Features

- Extremely Fast Switching Speed
- Low Forward Voltage − 0.35 Volts (Typ) @ I_F = 10 mAdc
- Pb−Free Package is Available

MAXIMUM RATINGS (T_J = 125°C unless otherwise noted)

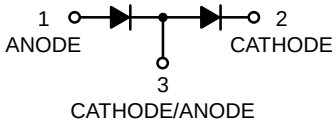
Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Forward Power Dissipation @ T_A = 25°C Derate above 25°C	P_F	 200 1.6	 mW mW/°C
Forward Current (DC)	I_F	200 Max	mA
Junction Temperature	T_J	−55 to 125	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

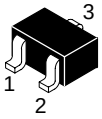
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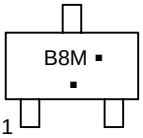
30 VOLT DUAL SERIES SCHOTTKY BARRIER DIODES



MARKING DIAGRAM



SOT−323
CASE 419
STYLE 9



B8 = Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
BAT54SWT1	SOT−323	3000 / Tape & Reel
BAT54SWT1G	SOT−323 (Pb−Free)	3000 / Tape & Reel

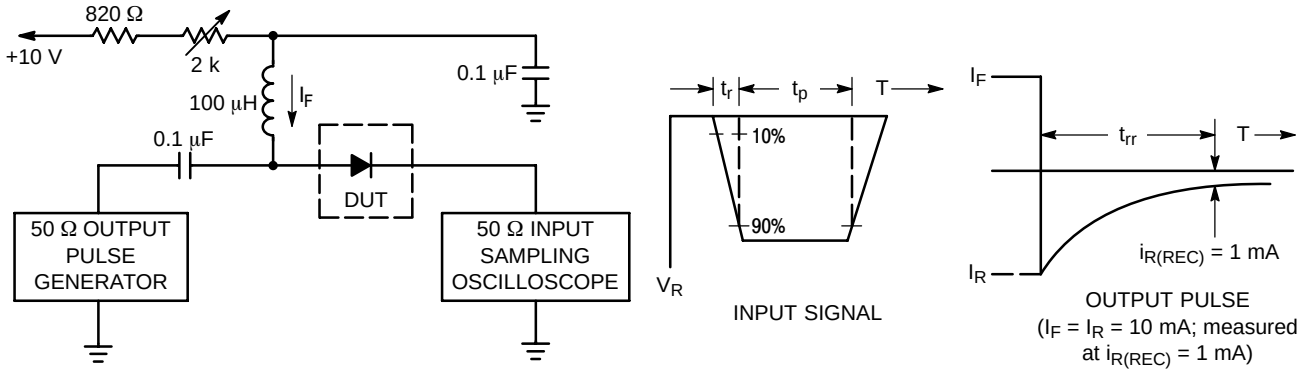
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (EACH DIODE)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	30	–	–	V
Total Capacitance (V_R = 1.0 V, f = 1.0 MHz)	C_T	–	7.6	10	pF
Reverse Leakage (V_R = 25 V)	I_R	–	0.5	2.0	μAdc
Forward Voltage (I_F = 0.1 mAdc)	V_F	–	0.22	0.24	Vdc
Forward Voltage (I_F = 30 mAdc)	V_F	–	0.41	0.5	Vdc
Forward Voltage (I_F = 100 mAdc)	V_F	–	0.52	0.8	Vdc
Reverse Recovery Time (I_F = I_R = 10 mAdc, $I_{R(REC)}$ = 1.0 mAdc, Figure 1)	t_{rr}	–	–	5.0	ns
Forward Voltage (I_F = 1.0 mAdc)	V_F	–	0.29	0.32	Vdc
Forward Voltage (I_F = 10 mAdc)	V_F	–	0.35	0.40	Vdc
Forward Current (DC)	I_F	–	–	200	mAdc
Repetitive Peak Forward Current	I_{FRM}	–	–	300	mAdc
Non−Repetitive Peak Forward Current (t < 1.0 s)	I_{FSM}	–	–	600	mAdc



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

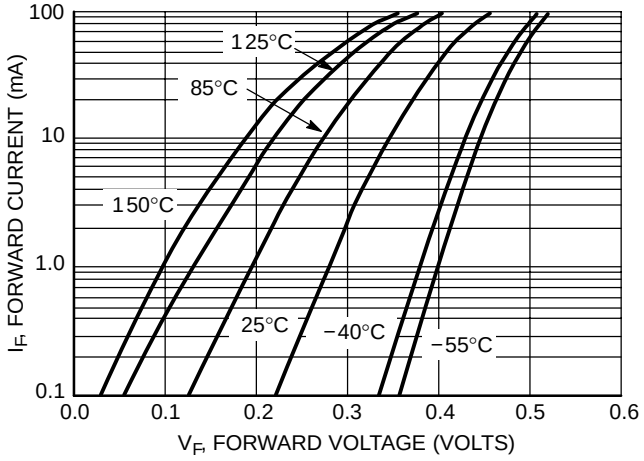


Figure 2. Forward Voltage

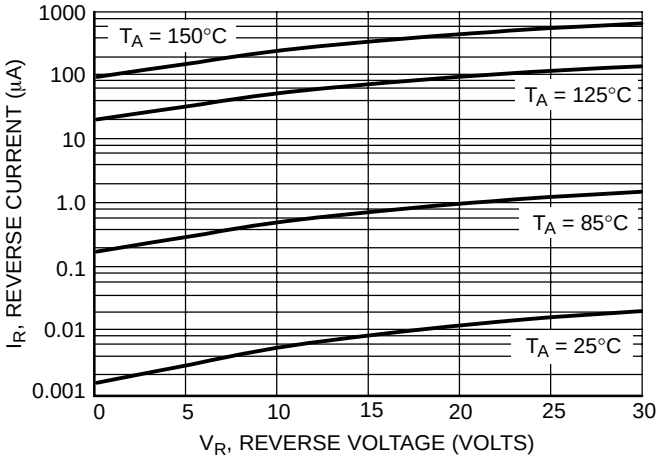


Figure 3. Leakage Current

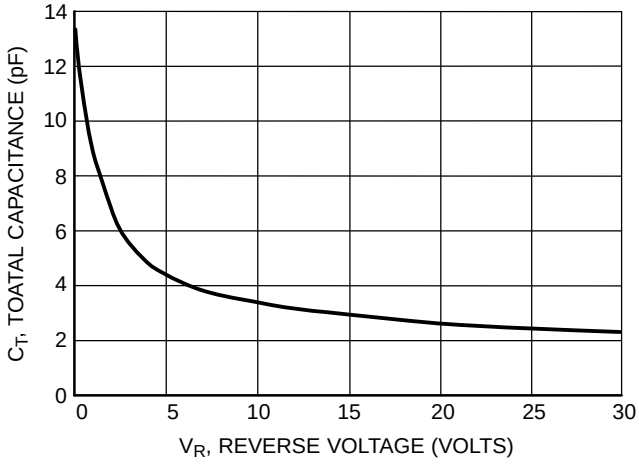
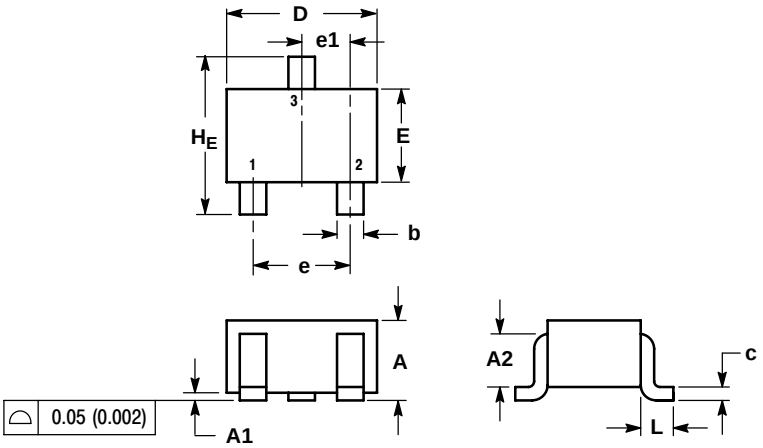


Figure 4. Total Capacitance

BAT54SWT1

PACKAGE DIMENSIONS

SOT−323 (SC−70)
CASE 419−04
ISSUE M

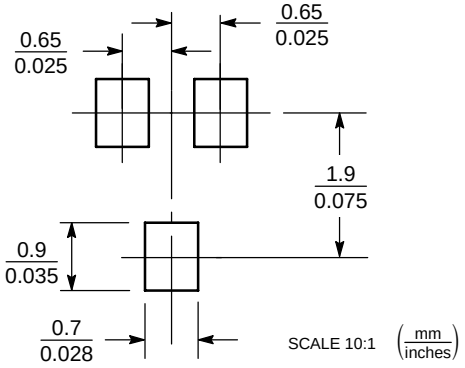


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2		0.7 REF			0.028 REF	
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1		0.65 BSC			0.026 BSC	
L		0.425 REF			0.017 REF	
H_E	2.00	2.10	2.40	0.079	0.083	0.095

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE−ANODE

SOLDERING FOOTPRINT*



*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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