

BAT54CXV3T1

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 V (Typ) @ $I_F = 10 \text{ mAdc}$
- Pb-Free Package is Available

MAXIMUM RATINGS ($T_J = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_F	240 1.9	mW mW/ $^\circ\text{C}$
Forward Current (DC)	I_F	200 Max	mA
Junction Temperature	T_J	-55 to 125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	525	$^\circ\text{C}/\text{W}$

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.

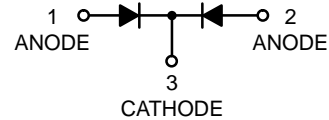
1. FR-5 board with minimum mounting pad.



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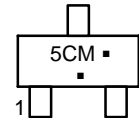
30 VOLT DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



MARKING DIAGRAM



SC-89
CASE 463C
STYLE 3



5C = Device Code
M = Date Code
■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BAT54CXV3T1	SC-89	3000 / Tape & Reel
BAT54CXV3T1G	SC-89 (Pb-Free)	3000 / Tape & Reel

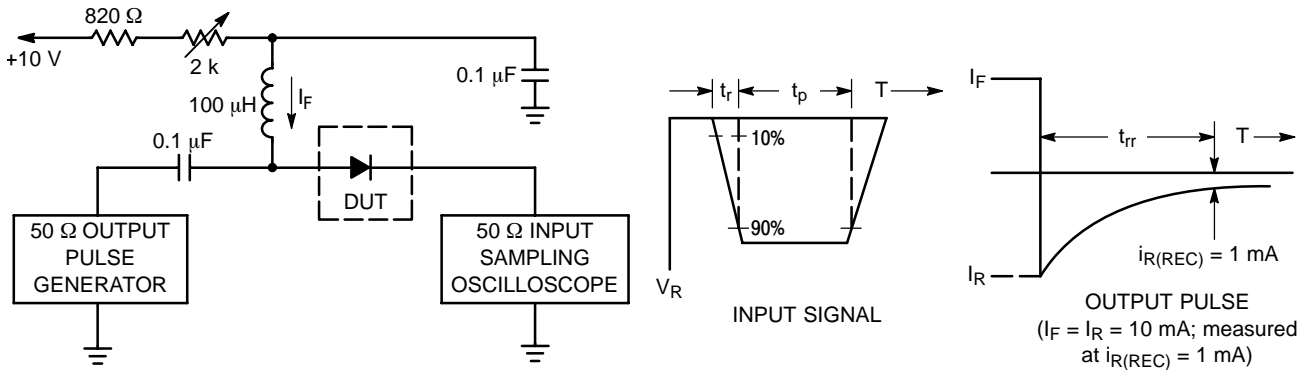
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

BAT54CXV3T1

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

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



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

Figure 1. Recovery Time Equivalent Test Circuit

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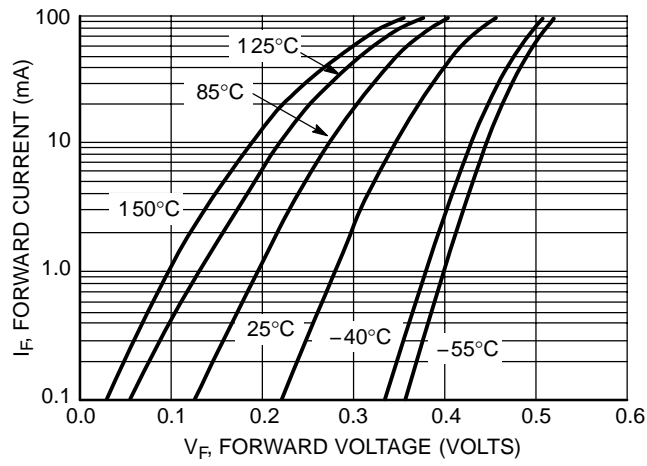


Figure 2. Forward Voltage

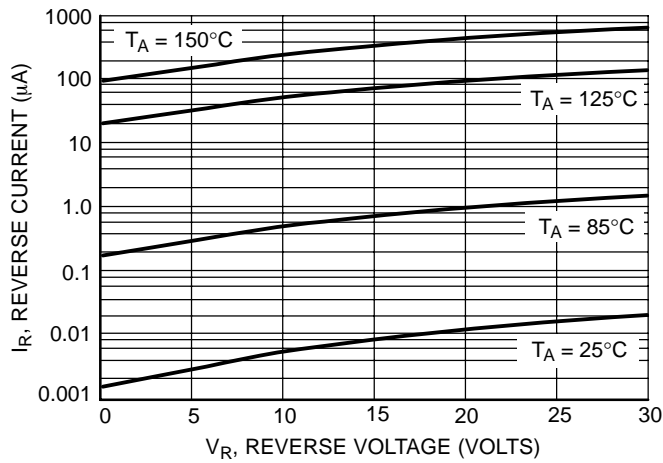


Figure 3. Leakage Current

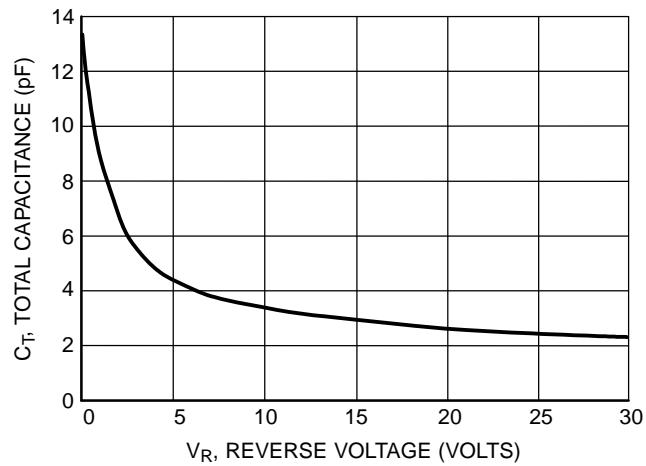
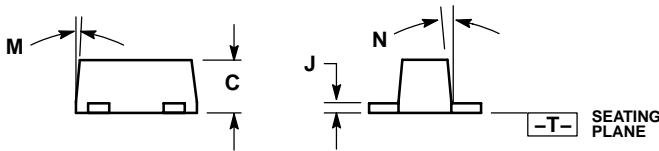
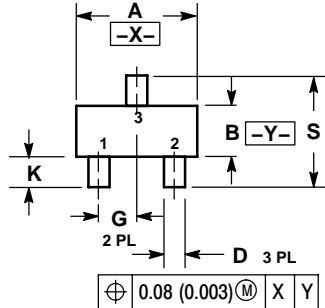


Figure 4. Total Capacitance

BAT54CXV3T1

PACKAGE DIMENSIONS

SC-89, 3-LEAD
CASE 463C-03
ISSUE C



NOTES:

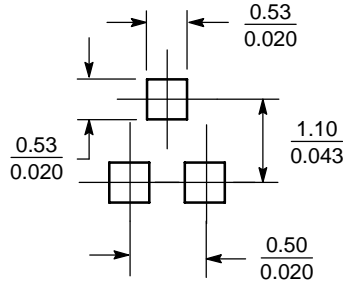
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 463C-01 OBSOLETE, NEW STANDARD 463C-02.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.50	1.60	1.70	0.059	0.063	0.067
B	0.75	0.85	0.95	0.030	0.034	0.040
C	0.60	0.70	0.80	0.024	0.028	0.031
D	0.23	0.28	0.33	0.009	0.011	0.013
G	0.50 BSC			0.020 BSC		
H	0.53 REF			0.021 REF		
J	0.10	0.15	0.20	0.004	0.006	0.008
K	0.30	0.40	0.50	0.012	0.016	0.020
L	1.10 REF			0.043 REF		
M	---	---	10	---	---	10
N	---	---	10	---	---	10
S	1.50	1.60	1.70	0.059	0.063	0.067

STYLE 3:

- PIN 1. ANODE
- ANODE
- CATHODE

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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