

Dual Series Schottky Barrier Diodes

BAT54CXV3

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) @ $I_F = 10$ mAdc
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

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 2.4	mW mW/ $^\circ\text{C}$
Forward Current (DC)	I_F	200 Max	mA
Non-Repetitive Peak Forward Current, $t_p < 10$ msec	I_{FSM}	600	mA
Repetitive Peak Forward Current Pulse Wave = 1 sec, Duty Cycle = 66%	I_{FRM}	300	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	$^\circ\text{C/W}$

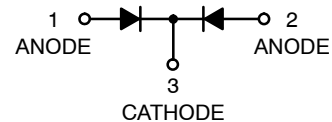
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 board with minimum mounting pad.

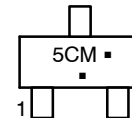
30 VOLT DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



SC-89
CASE 463C
STYLE 3



MARKING DIAGRAM



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

(Note: Microdot may be in either location)

ORDERING INFORMATION

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

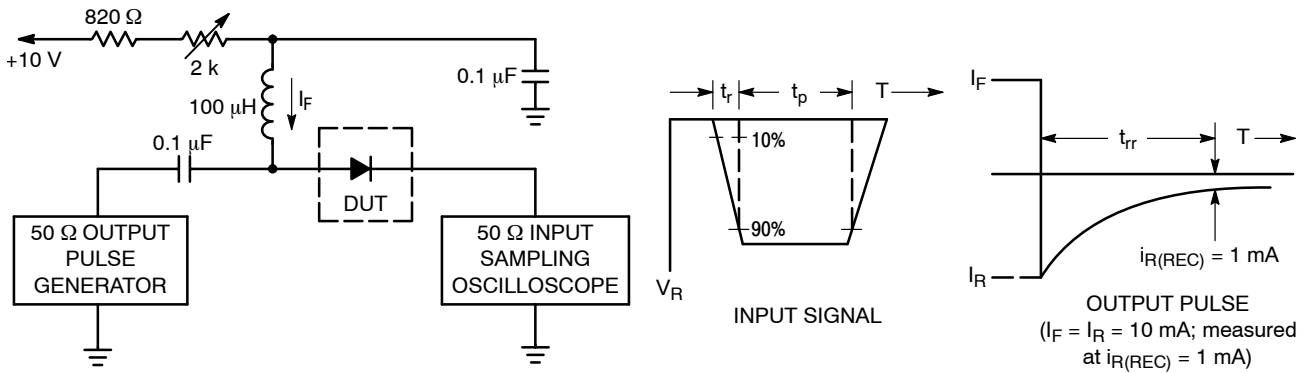
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

BAT54CXV3

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10\text{ }\mu\text{A}$)	$V_{(BR)R}$	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 ($I_F = 0.1\text{ mA}$) ($I_F = 1.0\text{ mA}$) ($I_F = 10\text{ mA}$) ($I_F = 30\text{ mA}$) ($I_F = 100\text{ mA}$)	V_F	– – – – –	0.22 0.29 0.35 0.41 0.52	0.24 0.32 0.40 0.50 0.80	V
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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



- 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

BAT54CXV3

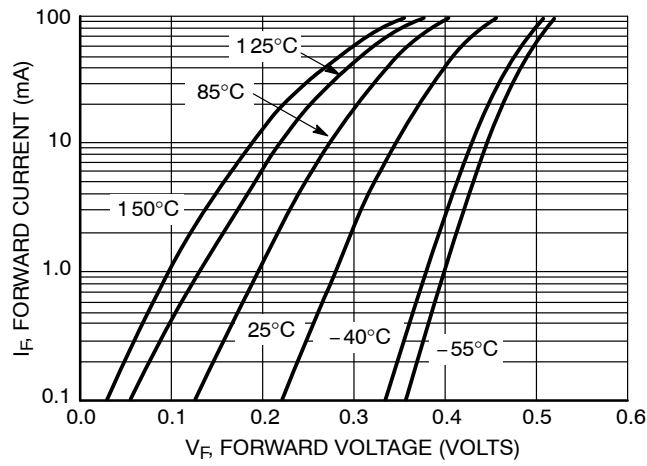


Figure 2. Forward Voltage

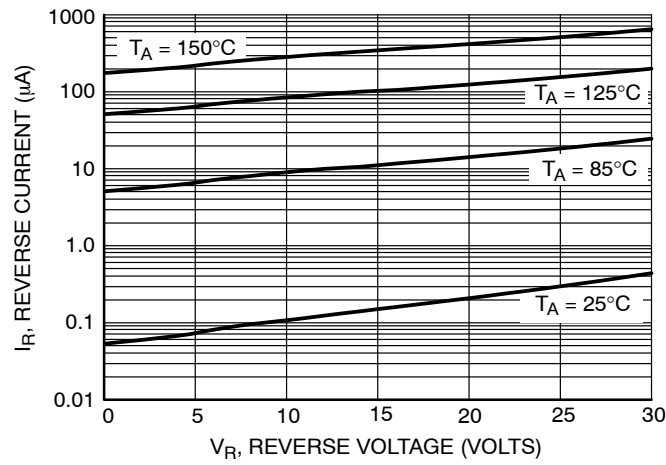


Figure 3. Leakage Current

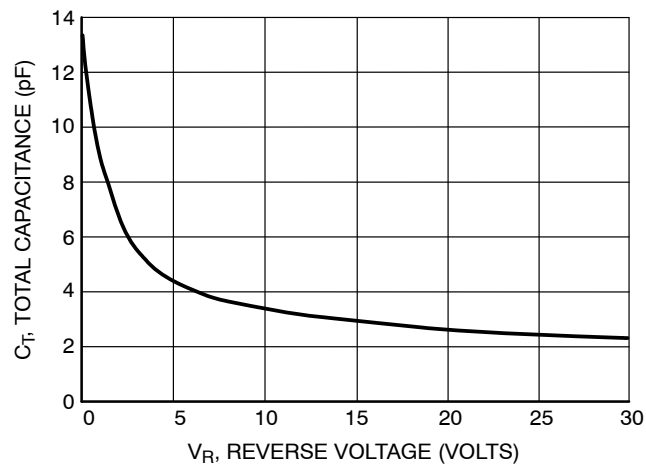
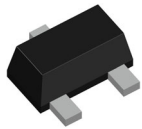


Figure 4. Total Capacitance

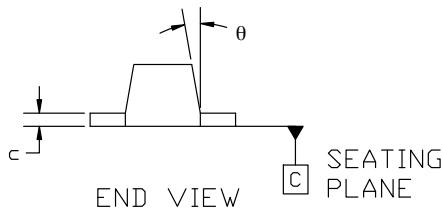
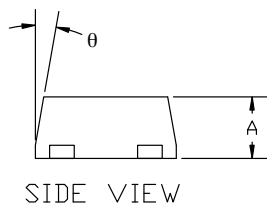
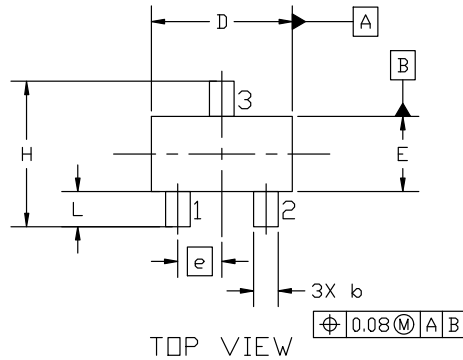
MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

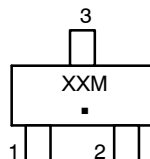


SC-89 3LEAD 1.60x0.85x0.70, 0.50P
CASE 463C
ISSUE D

DATE 20 FEB 2024



GENERIC MARKING DIAGRAM*



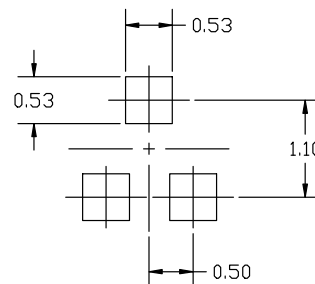
XX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSIONS: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.60	0.70	0.80
b	0.23	0.28	0.33
c	0.10	0.15	0.20
D	1.50	1.60	1.70
E	0.75	0.85	0.95
e	0.50 BSC		
H	1.50	1.60	1.70
L	0.30	0.40	0.50
θ	---	---	10°



RECOMMENDED MOUNTING 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.

STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

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

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

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DESCRIPTION:	SC-89 3LEAD 1.60x0.85x0.70, 0.50P	PAGE 1 OF 1

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