

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) @ $I_F = 10 \text{ mA}$
- 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, $t_p < 10 \text{ msec}$ | 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 | $^\circ\text{C}/\text{W}$ |

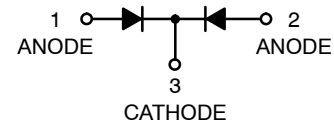
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 board with minimum mounting pad.

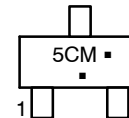
30 VOLT DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES



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 |

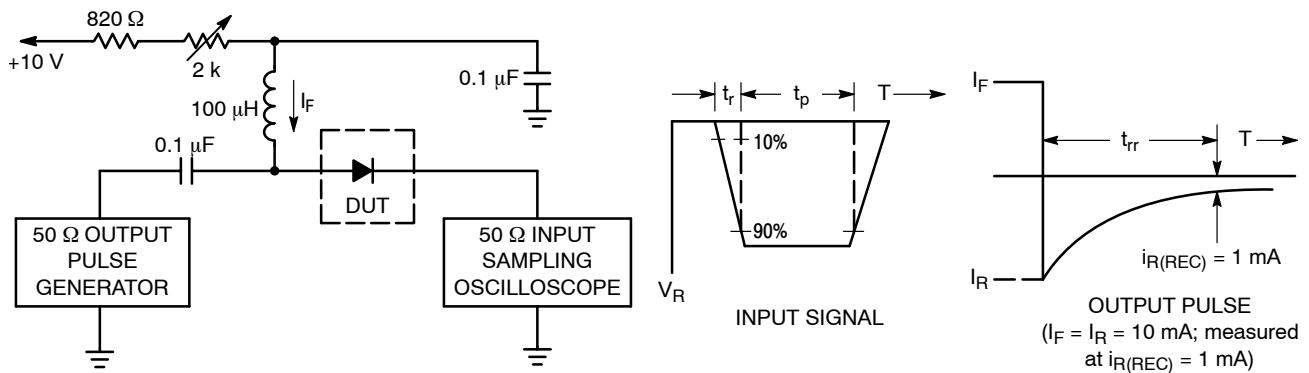
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

BAT54CXV3

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|-------------|-----|--------------------------------------|--------------------------------------|--------------------|
| Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$) | $V_{(BR)R}$ | 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 ($I_F = I_R = 10 \text{ mAdc}$, $I_{R(REC)} = 1.0 \text{ mAdc}$, 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 k Ω 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

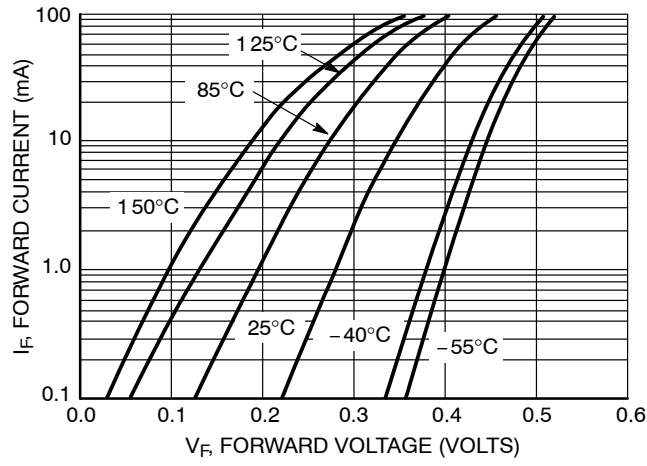


Figure 2. Forward Voltage

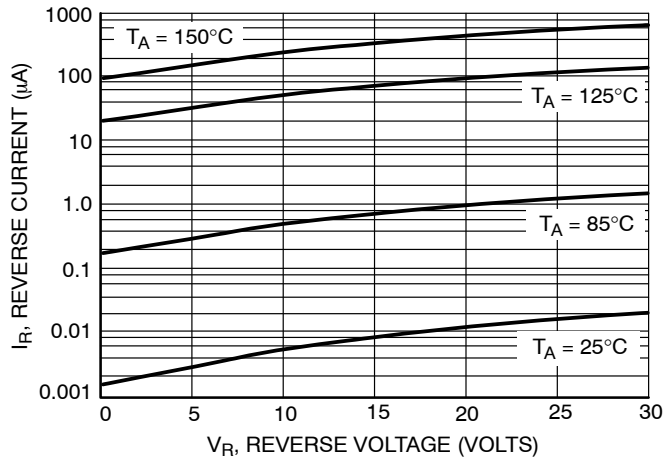


Figure 3. Leakage Current

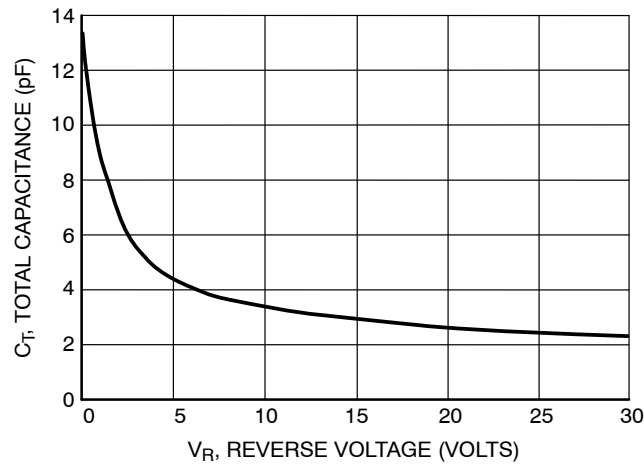


Figure 4. Total Capacitance

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

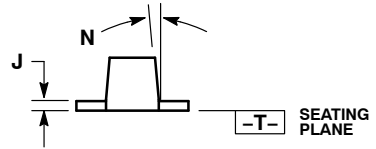
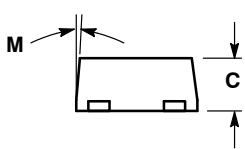
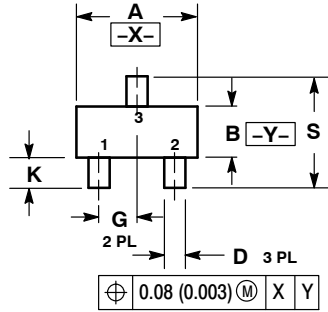
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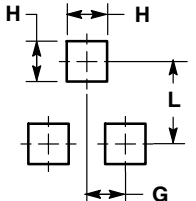
SCALE 4:1

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

DATE 31 JUL 2003



- 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

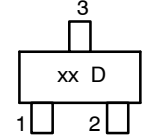


RECOMMENDED PATTERN OF SOLDER PADS

- NOTES:
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 - CONTROLLING DIMENSION: MILLIMETERS
 - MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
 - 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 |

GENERIC MARKING DIAGRAM*



xx = Specific Device Code
D = Date Code

*This information is generic. Please refer to device data sheet for actual part marking.

| | | |
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