# 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°C unless otherwise noted)

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 30 | V |
| Forward Power Dissipation<br>@ $T_A$ = 25°C<br>Derate above 25°C | $P_F$ | <br>240<br>2.4 | <br>mW<br>mW/°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 | °C |
| Storage Temperature Range | $T_{stg}$ | −55 to +150 | °C |
| Thermal Resistance, Junction−to−Ambient (Note 1) | $R_{\theta JA}$ | 525 | °C/W |

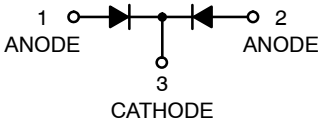
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR−4 board with minimum mounting pad.

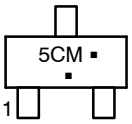
## 30 VOLT DUAL COMMON CATHODE SCHOTTKY BARRIER DIODES




**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 |

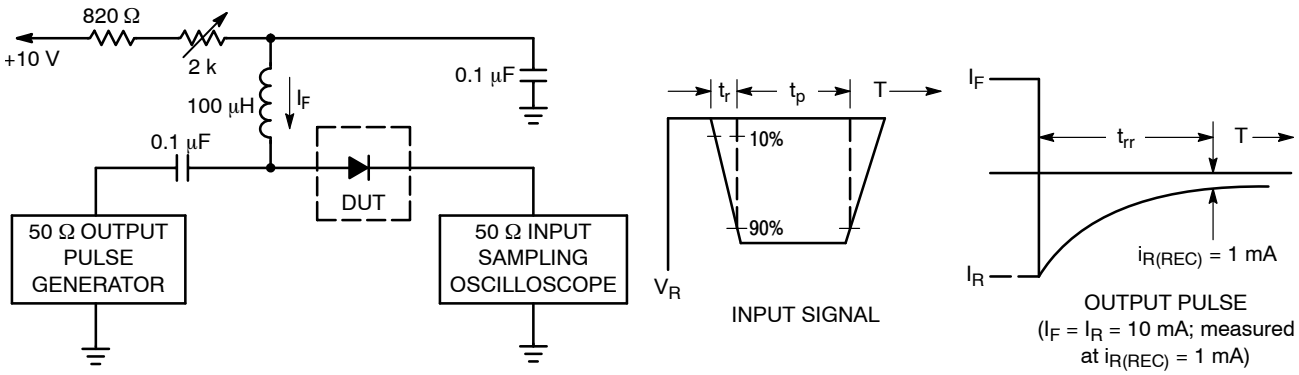
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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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 | $V_F$ | | | | V |
| ($I_F$ = 0.1 mA) | | – | 0.22 | 0.24 | |
| ($I_F$ = 1.0 mA) | | – | 0.29 | 0.32 | |
| ($I_F$ = 10 mA) | | – | 0.35 | 0.40 | |
| ($I_F$ = 30 mA) | | – | 0.41 | 0.50 | |
| ($I_F$ = 100 mA) | | – | 0.52 | 0.80 | |
| Reverse Recovery Time ($I_F$ = $I_R$ = 10 mAdc, $I_{R(REC)}$ = 1.0 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 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**

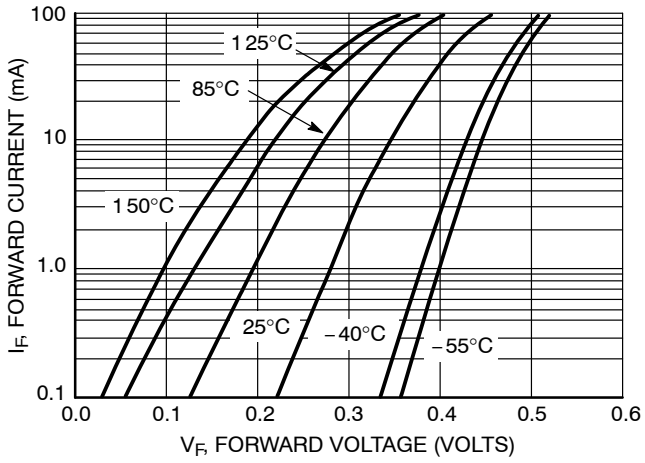



**Figure 2. Forward Voltage**

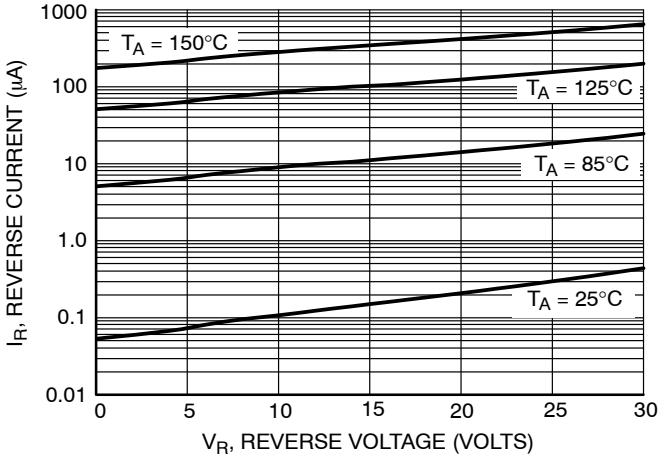



**Figure 3. Leakage Current**

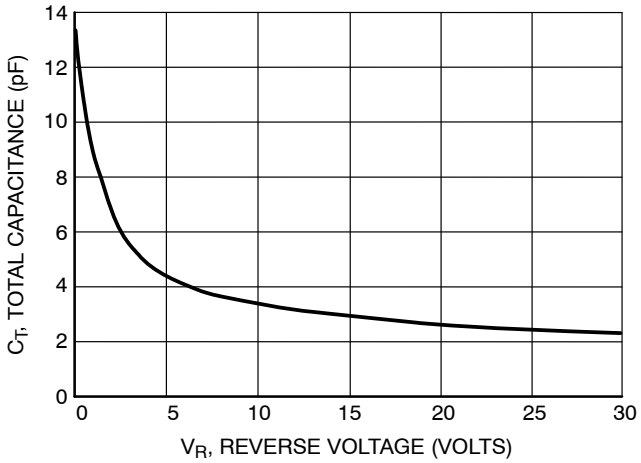
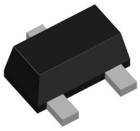
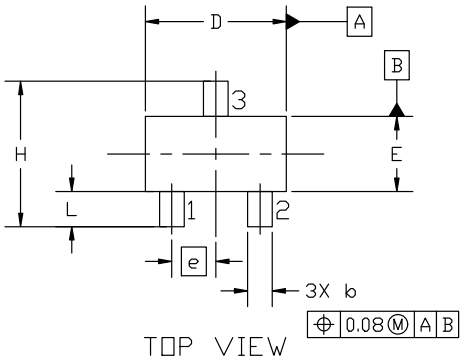



**Figure 4. Total Capacitance**

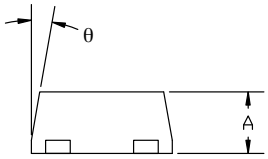


**SC−89 3−LEAD, 1.60x0.85x0.70, 0.50P**
CASE 463C
ISSUE D

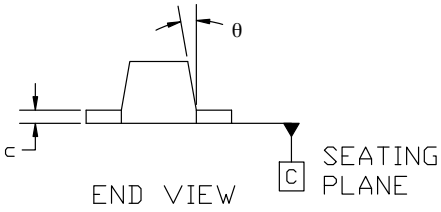
DATE 20 FEB 2024




TOP VIEW



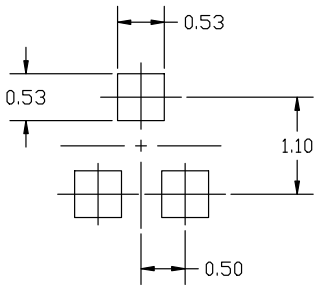

SIDE VIEW




END VIEW

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.

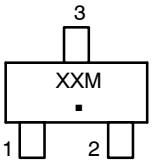
| DIM | MILLIMETERS | | |
|---|---|---|---|
| | MIN. | NOM. | MAX. |
| A | 0.60 | 0.70 | 0.80 |
| b | 0.23 | 0.28 | 0.33 |
| c | 0.10 | 0.15 | 0.20 |
| D | 1.50 | 1.60 | 1.70 |
| E | 0.75 | 0.85 | 0.95 |
| e | 0.50 BSC | | |
| H | 1.50 | 1.60 | 1.70 |
| L | 0.30 | 0.40 | 0.50 |
| θ | --- | --- | 10°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




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.

**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.

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 3−LEAD, 1.60x0.85x0.70, 0.50P** | | **PAGE 1 OF 1** |

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