

# Schottky Barrier Diode

30 V, 0.7 A, Low IR, Single CP

## SB07-03C

### Features

- Low Forward Voltage ( $V_F$  max = 0.55 V)
- Low Switching Noise
- Low Leakage Current and High Reliability Due to Highly Reliable Planar Structure
- Fast Reverse Recovery Time ( $t_{rr}$  max = 10 ns)

### Applications

- High Frequency Rectification (Switching Regulators, Converters, Choppers)

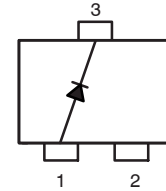
### SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS at  $T_a = 25^\circ\text{C}$

| Parameter                                | Symbol    | Conditions               | Ratings      | Unit             |
|------------------------------------------|-----------|--------------------------|--------------|------------------|
| Repetitive Peak Reverse Voltage          | $V_{RRM}$ | –                        | 30           | V                |
| Nonrepetitive Peak Reverse Surge Voltage | $V_{RSM}$ | –                        | 35           | V                |
| Average Output Current                   | $I_O$     | –                        | 700          | mA               |
| Surge Forward Current                    | $I_{FSM}$ | 50 Hz sine wave, 1 cycle | 5            | A                |
| Junction Temperature                     | $T_j$     | –                        | – 55 to +125 | $^\circ\text{C}$ |
| Storage Temperature                      | $T_{stg}$ | –                        | – 55 to +125 | $^\circ\text{C}$ |

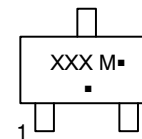
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ELECTRICAL CONNECTION



SC-59 / CP3  
CASE 318BJ  
ISSUE O

### MARKING DIAGRAM



XXX = Specific Device Code  
M = Date Code  
■ = Pb-Free Package

### ORDERING INFORMATION

| Device        | Package                  | Shipping†          |
|---------------|--------------------------|--------------------|
| SB07-03C-TB-E | SC-59 / CP3<br>(Pb free) | 3000 / Tape & Reel |

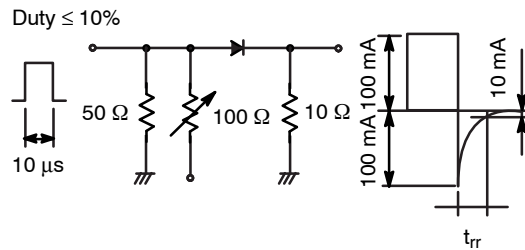
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](#).

**ELECTRICAL CHARACTERISTICS** (at  $T_a = 25^\circ\text{C}$ )

| Parameter                 | Symbol         | Conditions                                                                        | Ratings |     |      | Unit               |
|---------------------------|----------------|-----------------------------------------------------------------------------------|---------|-----|------|--------------------|
|                           |                |                                                                                   | Min     | Typ | Max  |                    |
| Reverse Voltage           | $V_R$          | $I_R = 300\ \mu\text{A}$                                                          | 30      | –   | –    | V                  |
| Forward Voltage           | $V_F$          | $I_F = 700\ \text{mA}$                                                            | –       | –   | 0.55 | V                  |
| Reverse Current           | $I_R$          | $V_R = 15\ \text{V}$                                                              | –       | –   | 80   | $\mu\text{A}$      |
| Interterminal Capacitance | $C$            | $V_R = 10\ \text{V}$ , $f = 1\ \text{MHz}$                                        | –       | 25  | –    | pF                 |
| Reverse Recovery Time     | $t_{rr}$       | $I_F = I_R = 100\ \text{mA}$ ,<br>See specified Test Circuit.                     | –       | –   | 10   | ns                 |
| Thermal Resistance        | $R_{th(j-a)1}$ |                                                                                   | –       | 420 | –    | $^\circ\text{C/W}$ |
|                           | $R_{th(j-a)2}$ | Mounted in Cu-foiled area of<br>16mm <sup>2</sup> x 0.2mm<br>on glass epoxy board | –       | 330 | –    | $^\circ\text{C/W}$ |

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.

**$t_{rr}$  Test Circuit**



**Figure 1.  $t_{rr}$  Test Circuit**

TYPICAL CHARACTERISTICS

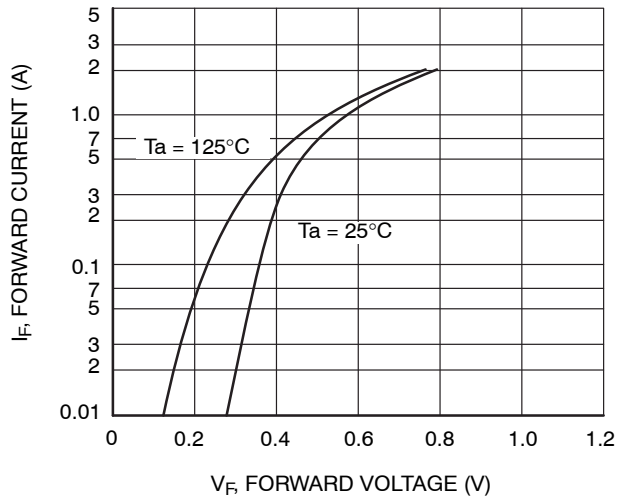


Figure 2.  $I_F - V_F$

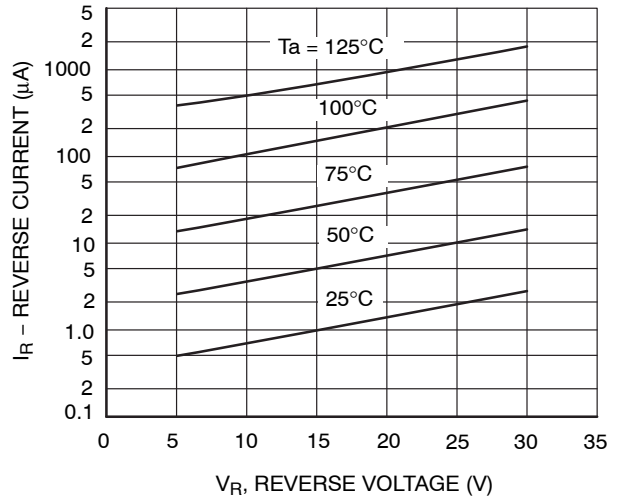


Figure 3.  $I_R - V_R$

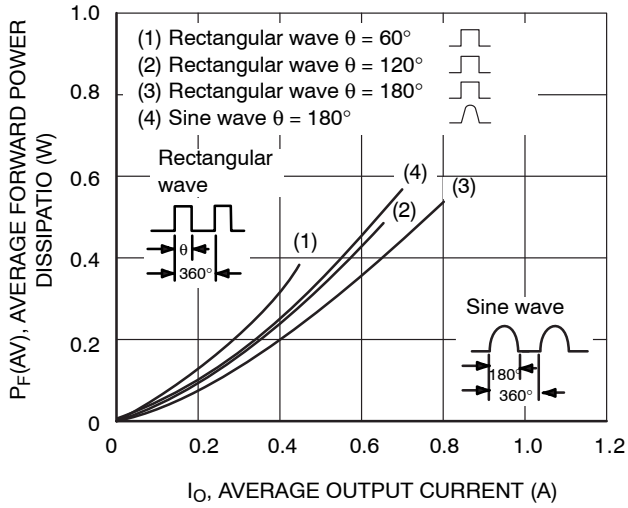


Figure 4.  $P_F(AV) - I_O$

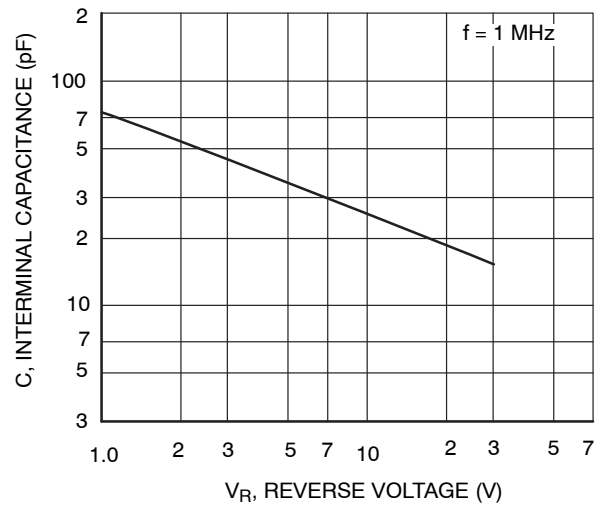


Figure 5.  $C - V_R$

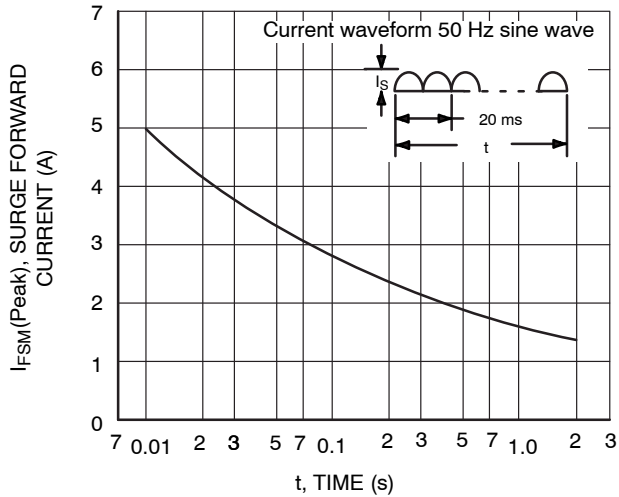


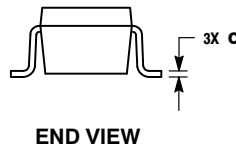
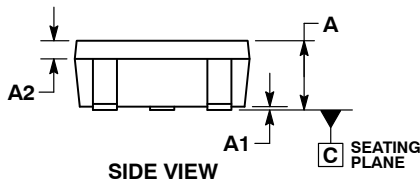
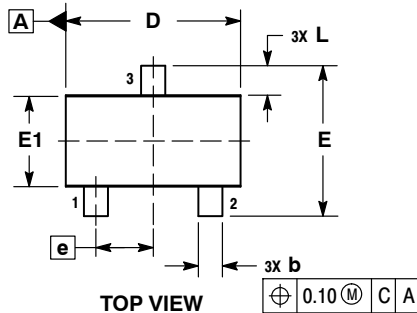
Figure 6.  $I_{FSM} - t$



SCALE 2:1

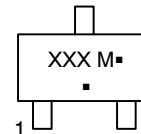
**SC-59 / CP3**  
**CASE 318BJ**  
**ISSUE O**

DATE 09 JAN 2015


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER SIDE.
4. DIMENSIONS D AND E1 ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.20 FROM THE TIP.

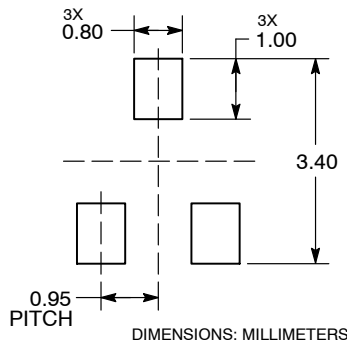
| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 0.95        | 1.35 |
| A1  | 0.00        | 0.10 |
| A2  | 0.20        | 0.40 |
| b   | 0.35        | 0.50 |
| c   | 0.10        | 0.20 |
| D   | 2.75        | 3.05 |
| E   | 2.30        | 2.70 |
| E1  | 1.35        | 1.65 |
| e   | 0.95 BSC    |      |
| L   | 0.35        | 0.75 |

**GENERIC MARKING DIAGRAM**


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

(Note: Microdot may be in either location)

\*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.

**RECOMMENDED SOLDERING FOOTPRINT\***


\*For additional information on our Pb-Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, [SOLDERRM/D](#).

|                         |                    |                                                                                                                                                                                     |
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