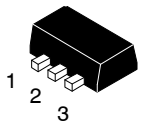
# Schottky Barrier Diode

## 30 V, 2 A, Low IR, Single PCP

# SB20-03P




**SOT−89 / PCP−1**
**CASE 419AU**

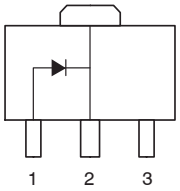
### Features

- Low Forward Voltage ($V_F$ max = 0.55 V)
- Fast Reverse Recovery Time ($t_{rr}$ max = 20 ns)
- Low Switching Noise
- Low Leakage Current and High Reliability due to Highly Reliable Planar Structure
- These Devices are Pb−Free and are RoHS Compliant

### Applications

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

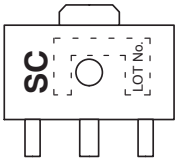
### ELECTRICAL CONNECTION




1: Anode
2: Cathode
3: No Contact

PCP

### MARKING DIAGRAM




### SPECIFICATIONS

**ABSOLUTE MAXIMUM RATINGS** at $T_A$ = 25°C

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | 30 | V |
| Nonrepetitive Peak Reverse Voltage | $V_{RSM}$ | 35 | V |
| Average Output Current | $I_O$ | 2 | A |
| Surge Forward Current (Note 1) | $I_{FSM}$ | 20 | A |
| Junction Temperature | $T_J$ | −55 to +125 | °C |
| Storage Temperature | $T_{STG}$ | −55 to +125 | °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.

1. Conditions: 50 Hz sine wave, 1 cycle

### ORDERING INFORMATION

| Device | Package | Shipping† |
|---|---|---|
| SB20−03P−TD−E | PCP (Pb−Free) | 1000 / Tape & Reel |

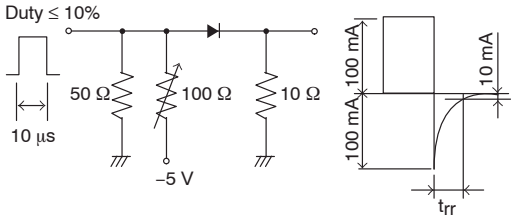
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

**ELECTRICAL CHARACTERISTICS** at $T_A$ = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| Reverse Voltage | $V_R$ | $I_R$ = 500 μA | 30 | | | V |
| Forward Voltage | $V_F$ | $I_F$ = 2 A | | | 0.55 | V |
| Reverse Current | $I_R$ | $V_R$ = 15 V | | | 100 | μA |
| Interterminal Capacitance | C | $V_R$ = 10 V, f = 1 MHz | | 70 | | pF |
| Reverse Recovery Time | $t_{rr}$ | $I_F$ = $I_R$ = 100 mA, See specified Test Circuit | | | 20 | ns |
| Thermal Resistance | Rth(j−a)1 | | | 300 | | °C/W |
| | Rth(j−a)2 | When mounted on ceramic substrate (250 $mm^2$ x 0.8 mm) | | 110 | | °C/W |

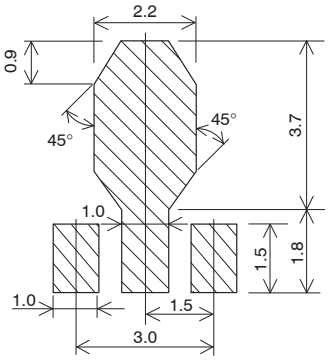
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## $t_{rr}$ Test Circuit




## Land Pattern Example

Unit: mm



## TYPICAL CHARACTERISTICS

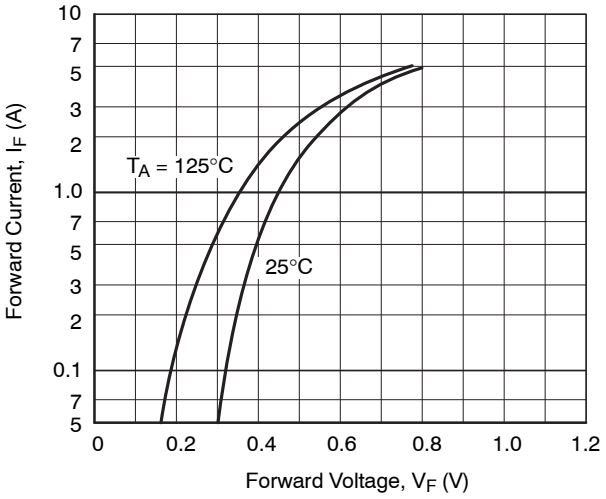



**Figure 1. $I_F$ – $V_F$**

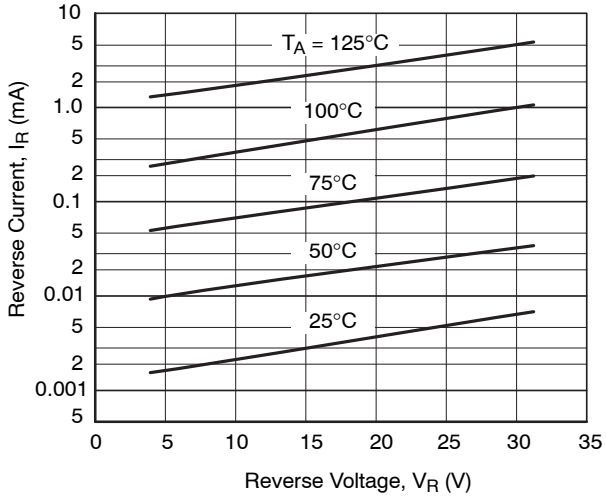



**Figure 2. $I_R$ – $V_R$**

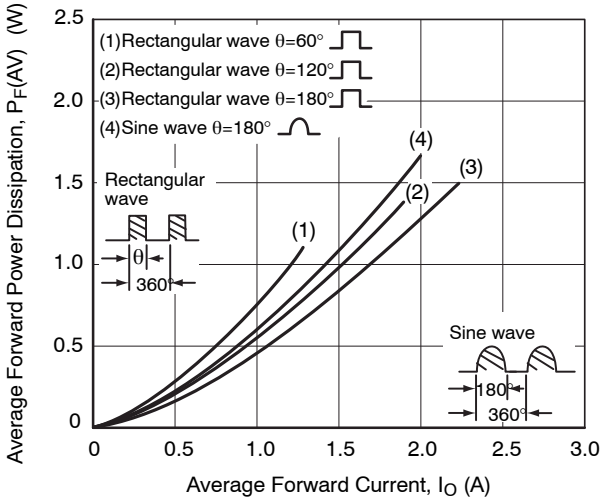



**Figure 3. $P_{F(AV)}$ – $I_O$**

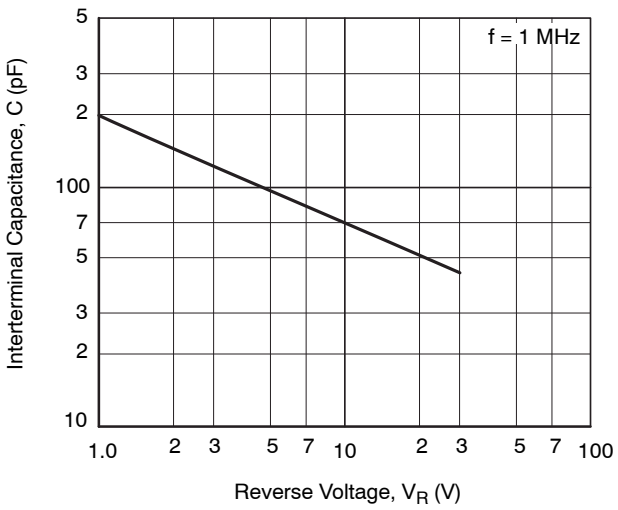



**Figure 4. C – $V_R$**

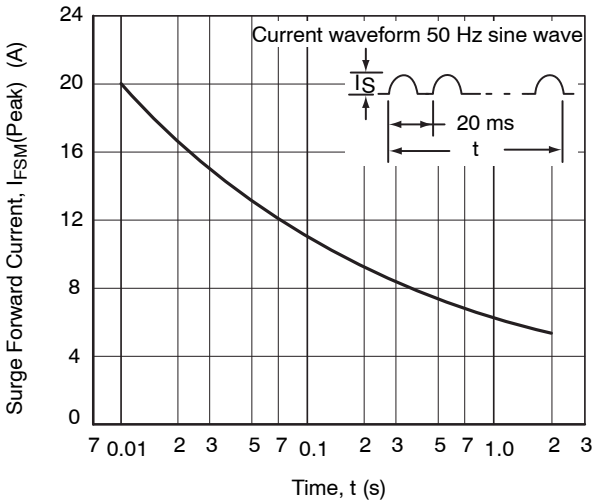
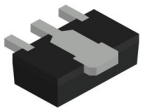
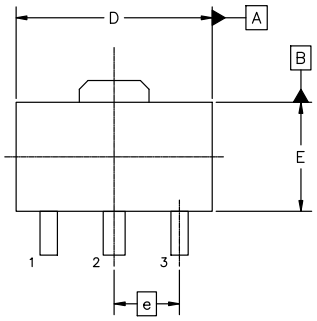



**Figure 5. $I_{FSM}$ – t**

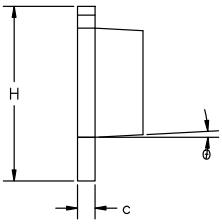


**SOT−89 4.50x2.50x1.50 1.50P**
CASE 419AU
ISSUE A

DATE 21 MAY 2025



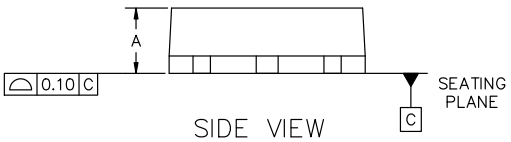

TOP VIEW



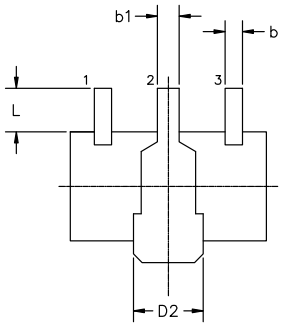

END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS INCLUDES LEAD FINISH.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

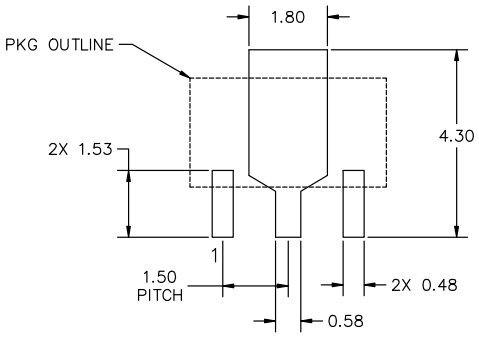
| MILLIMETERS | | | |
|---|---|---|---|
| DIM | MIN | NOM | MAX |
| A | 1.40 | 1.50 | 1.60 |
| b | 0.35 | 0.40 | 0.48 |
| b1 | 0.40 | 0.50 | 0.55 |
| c | 0.37 | 0.40 | 0.43 |
| D | 4.40 | 4.50 | 4.60 |
| D2 | 1.40 | 1.60 | 1.80 |
| E | 2.40 | 2.50 | 2.60 |
| e | 1.50 BSC | | |
| H | 3.80 | 4.00 | 4.20 |
| L | 0.80 | 1.00 | 1.20 |
| θ | 0° | −−− | 3° |




SIDE VIEW




BOTTOM VIEW




RECOMMENDED MOUNTING 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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| **DESCRIPTION:** | **SOT−89 4.50x2.50x1.50 1.50P** | | **PAGE 1 OF 1** |

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