

Schottky Barrier Diode

30 V, 2 A, Low IR, Single PCP

SB20-03P

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)

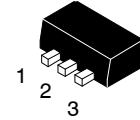
SPECIFICATIONS

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

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	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +125	$^\circ\text{C}$

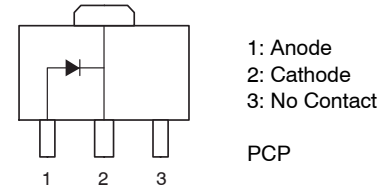
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Conditions: 50 Hz sine wave, 1 cycle

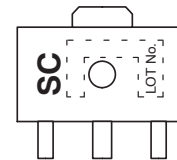


SOT-89 / PCP-1
CASE 419AU

ELECTRICAL CONNECTION



MARKING DIAGRAM



ORDERING INFORMATION

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

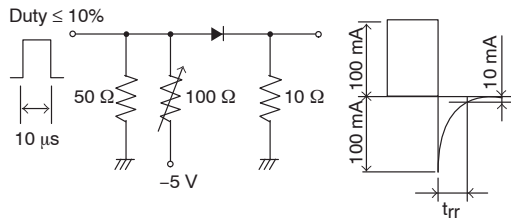
[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](http://www.onsemi.com/BRD8011/D).

ELECTRICAL CHARACTERISTICS at $T_A = 25^\circ\text{C}$

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

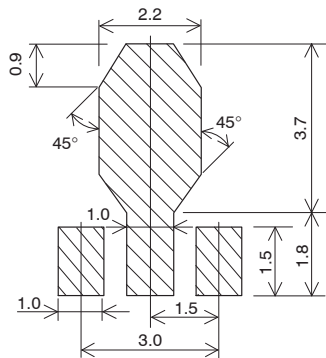
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

t_{rr} Test Circuit



Land Pattern Example

Unit: mm



TYPICAL CHARACTERISTICS

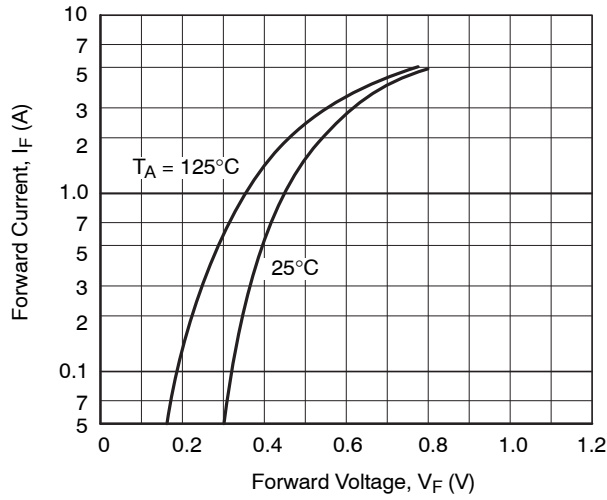


Figure 1. $I_F - V_F$

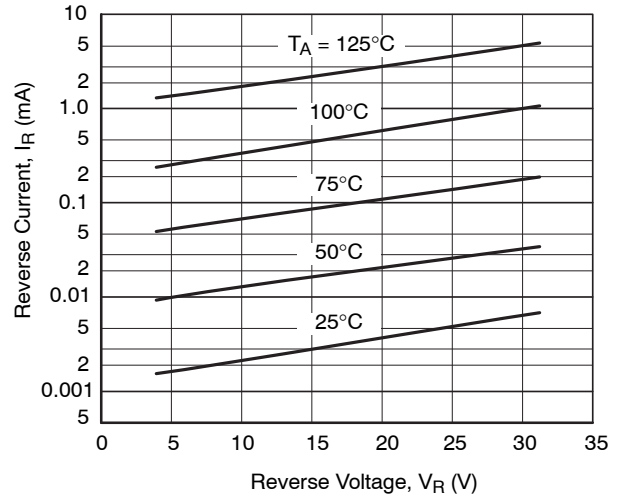


Figure 2. $I_R - V_R$

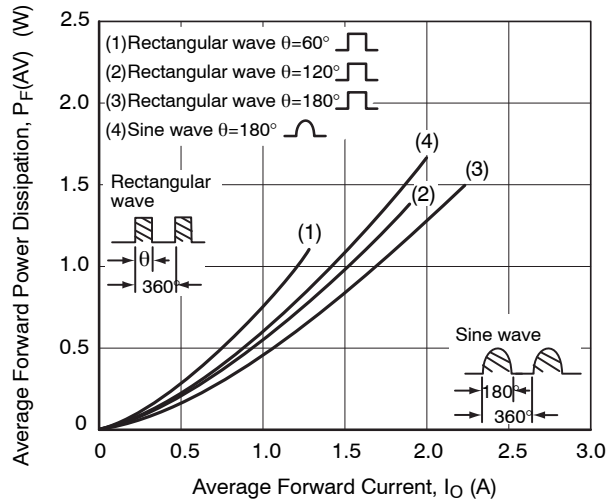


Figure 3. $P_{F(AV)} - I_O$

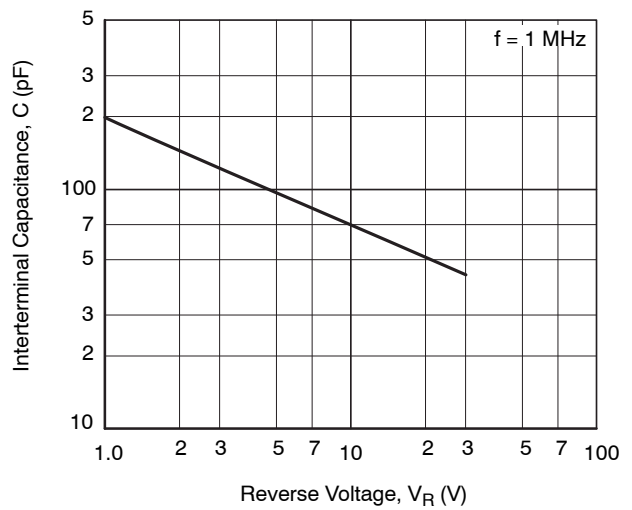


Figure 4. $C - V_R$

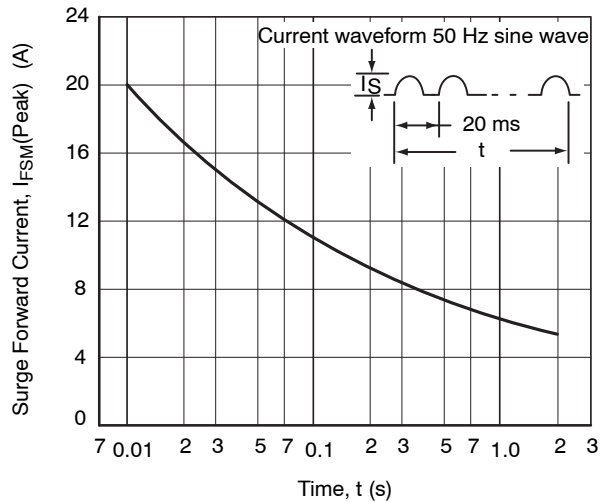
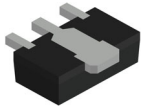
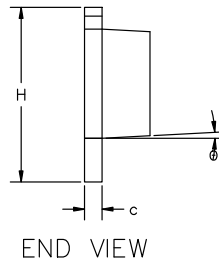
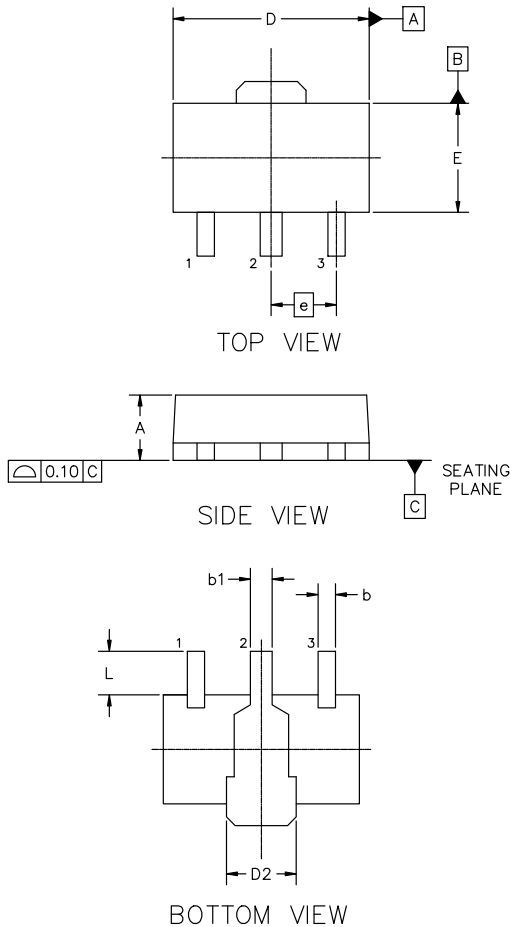


Figure 5. $I_{FSM} - t$



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

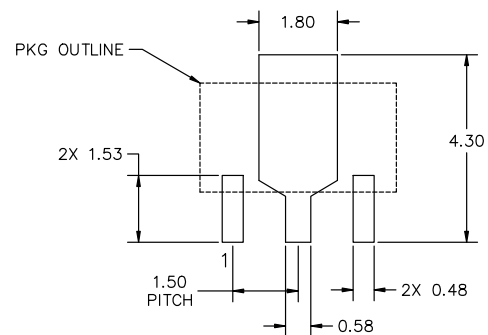
DATE 21 MAY 2025



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°



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

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