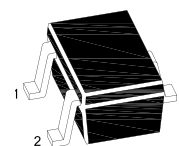


# BAS19W, BAS20W, BAS21W/AW/CW/SW

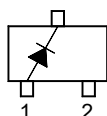
## Silicon Epitaxial Planar Diodes

High Voltage Switching Diodes

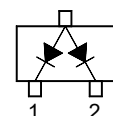


SOT-323 Plastic Package

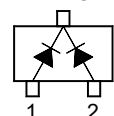
BAS19W  
BAS20W  
BAS21W



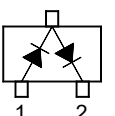
BAS21AW



BAS21CW



BAS21SW



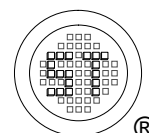
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter                                 | Symbol         | Value                                | Unit             |
|-------------------------------------------|----------------|--------------------------------------|------------------|
| Reverse Voltage                           | $V_R$          | BAS19W<br>120                        | V                |
|                                           |                | BAS20W<br>200                        |                  |
|                                           |                | BAS21W/AW/CW/SW<br>250               |                  |
| Continuous Forward Current                | $I_{F(AV)}$    | 200                                  | mA               |
| Repetitive Peak Forward Current           | $I_{FRM}$      | 625                                  | mA               |
| Non-repetitive Peak Forward Surge Current | $I_{FSM}$      | at $t = 1\text{ s}$<br>0.5           | A                |
|                                           |                | at $t = 1\text{ }\mu\text{s}$<br>2.5 |                  |
| Total Device Dissipation                  | $P_{tot}$      | 250                                  | mW               |
| Junction and Storage Temperature Range    | $T_j, T_{stg}$ | - 55 to + 150                        | $^\circ\text{C}$ |

### Thermal Characteristics

| Parameter                                             | Symbol          | Max. | Unit               |
|-------------------------------------------------------|-----------------|------|--------------------|
| Thermal Resistance, Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 500  | $^\circ\text{C/W}$ |

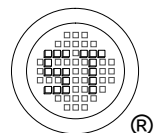
<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



# BAS19W, BAS20W, BAS21W/AW/CW/SW

## Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                                                                                                                                                                                                                                                                                                                               | Symbol           | Min.                       | Max.                                   | Unit          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|----------------------------------------|---------------|
| Reverse Breakdown Voltage<br>at $I_R = 100\ \mu\text{A}$ BAS19W<br>at $I_R = 100\ \mu\text{A}$ BAS20W<br>at $I_R = 100\ \mu\text{A}$ BAS21W/AW/CW/SW                                                                                                                                                                                    | $V_{(BR)R}$      | 120<br>200<br>250          | -<br>-<br>-                            | V             |
| Forward Voltage<br>at $I_F = 100\ \text{mA}$<br>at $I_F = 200\ \text{mA}$                                                                                                                                                                                                                                                               | $V_F$            | -<br>-                     | 1<br>1.25                              | V             |
| Reverse Current<br>at $V_R = 100\ \text{V}$ BAS19W<br>at $V_R = 150\ \text{V}$ BAS20W<br>at $V_R = 200\ \text{V}$ BAS21W/AW/CW/SW<br>at $V_R = 100\ \text{V}$ , $T_j = 150^\circ\text{C}$ BAS19W<br>at $V_R = 150\ \text{V}$ , $T_j = 150^\circ\text{C}$ BAS20W<br>at $V_R = 200\ \text{V}$ , $T_j = 150^\circ\text{C}$ BAS21W/AW/CW/SW | $I_R$            | -<br>-<br>-<br>-<br>-<br>- | 0.1<br>0.1<br>0.1<br>100<br>100<br>100 | $\mu\text{A}$ |
| Total Capacitance<br>at $V_R = 0$ , $f = 1\ \text{MHz}$                                                                                                                                                                                                                                                                                 | $C_{\text{tot}}$ | -                          | 5                                      | pF            |
| Reverse Recovery Time<br>at $I_F = I_R = 30\ \text{mA}$ , $R_L = 100\ \Omega$ , $I_{rr} = 0.1 \times I_R$                                                                                                                                                                                                                               | $t_{rr}$         | -                          | 50                                     | ns            |



Electrical characteristic curve

Fig 1. Power Derating Curve

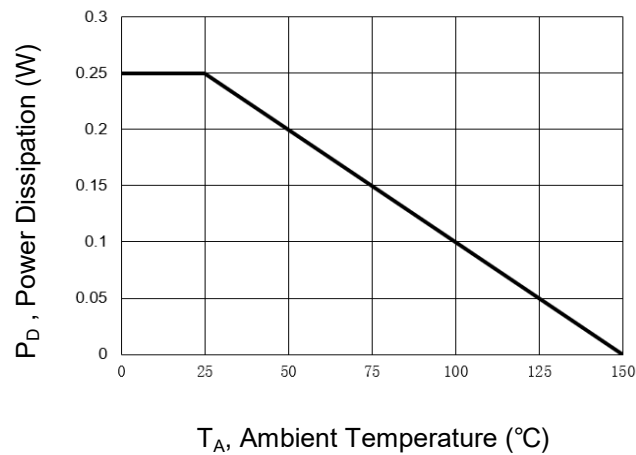


Fig 2. Forward Characteristic Curve

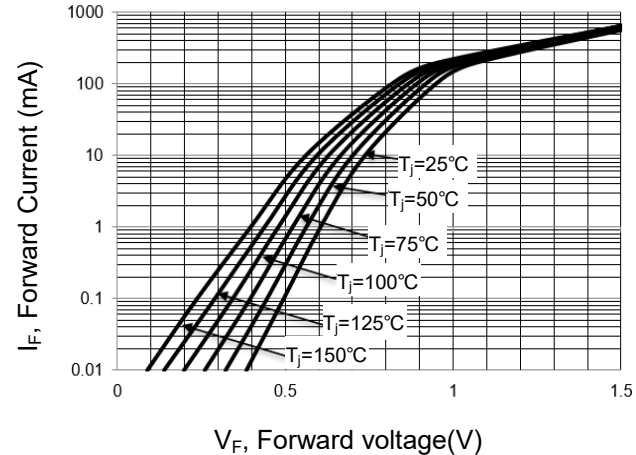


Fig 3. Reverse Characteristic Curve

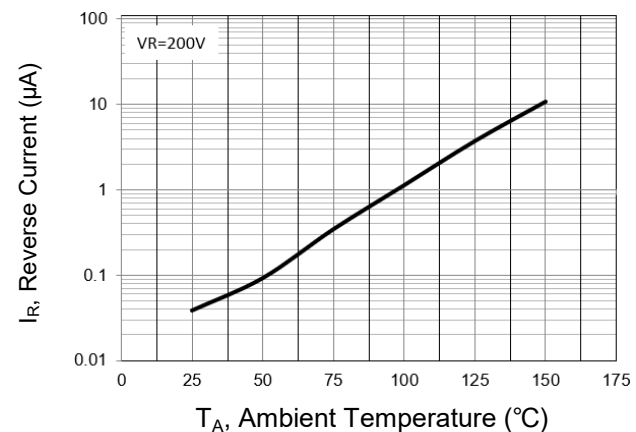
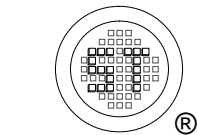
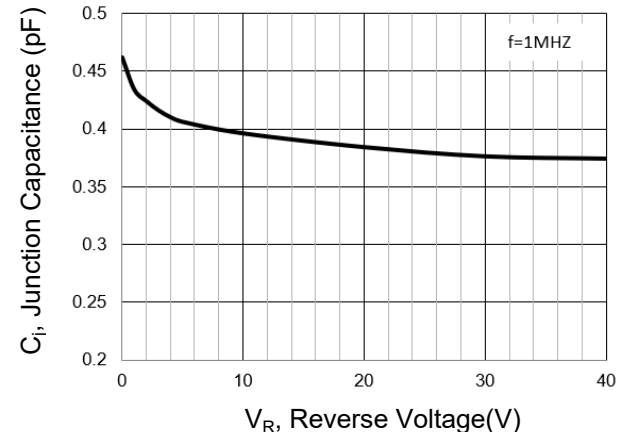


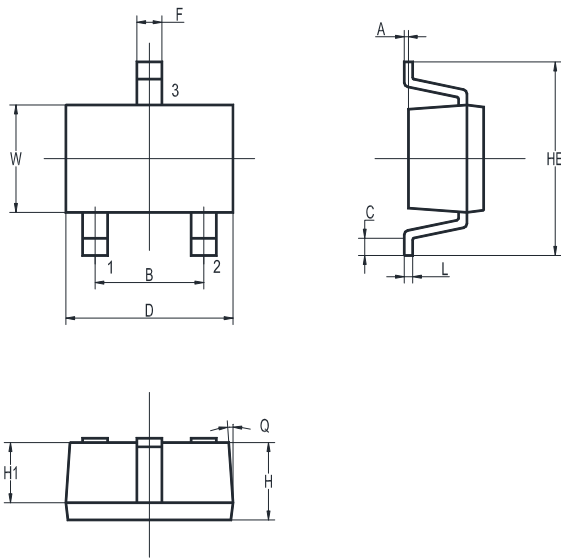
Fig 4. Junction Capacitance



# BAS19W, BAS20W, BAS21W/AW/CW/SW

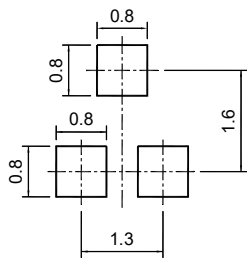
## Package Outline Dimensions (Units: mm)

SOT-323



| UNIT | A           | B          | C           | D          | H          | H1          | HE         | F            | L            | W            | Q          |
|------|-------------|------------|-------------|------------|------------|-------------|------------|--------------|--------------|--------------|------------|
| mm   | 0.1<br>MAX. | 1.4<br>1.2 | 0.2<br>MIN. | 2.1<br>1.9 | 1.0<br>0.8 | 0.7<br>TYP. | 2.4<br>2.0 | 0.35<br>0.25 | 0.15<br>0.05 | 1.35<br>1.15 | 5°<br>MAX. |

## Recommended Soldering Footprint



## Packing information

| Package | Tape Width<br>(mm) | Pitch   |               | Reel Size |      | Per Reel Packing Quantity |
|---------|--------------------|---------|---------------|-----------|------|---------------------------|
|         |                    | mm      | inch          | mm        | inch |                           |
| SOT-323 | 8                  | 4 ± 0.1 | 0.157 ± 0.004 | 178       | 7    | 3,000                     |

## Marking information

" \*\* " = Part No.

| Type          | Marking | Type    | Marking |
|---------------|---------|---------|---------|
| BAS19W~BAS21W | F5      | BAS21CW | F3      |
| BAS21AW       | F2      | BAS21SW | F4      |

" YM " = Date Code Marking

" Y " = Year

" M " = Month

Font type: Arial

