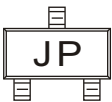
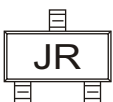
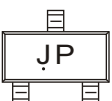
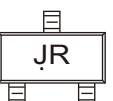


## BAS19/BAS20 SWITCHING DIODE

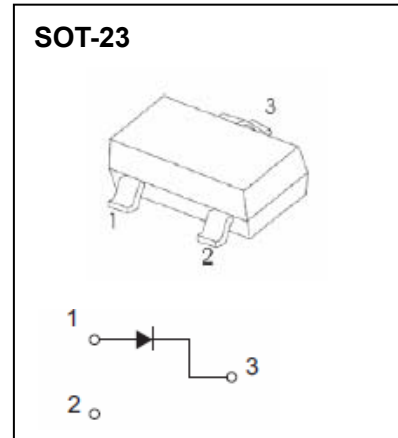
### FEATURE

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

### MARKING:

| BAS19:JP                                                                           | BAS20:JR                                                                           |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|   |   |
|  |  |

Solid dot = Green molding compound device,  
if none, the normal device.



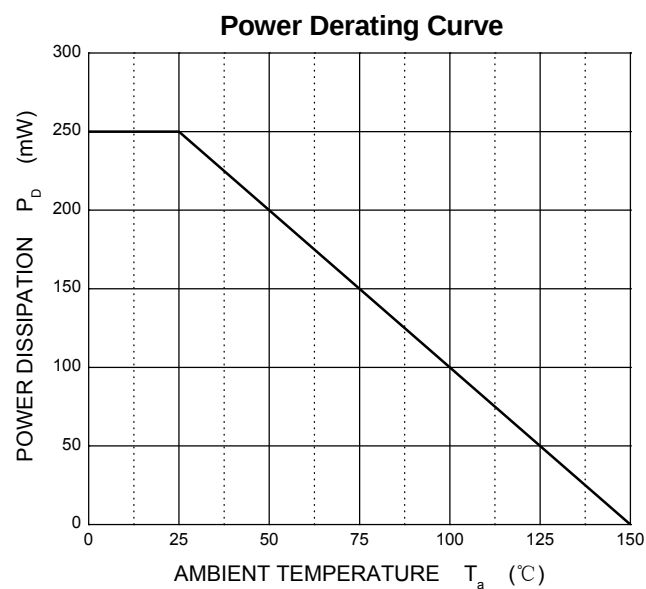
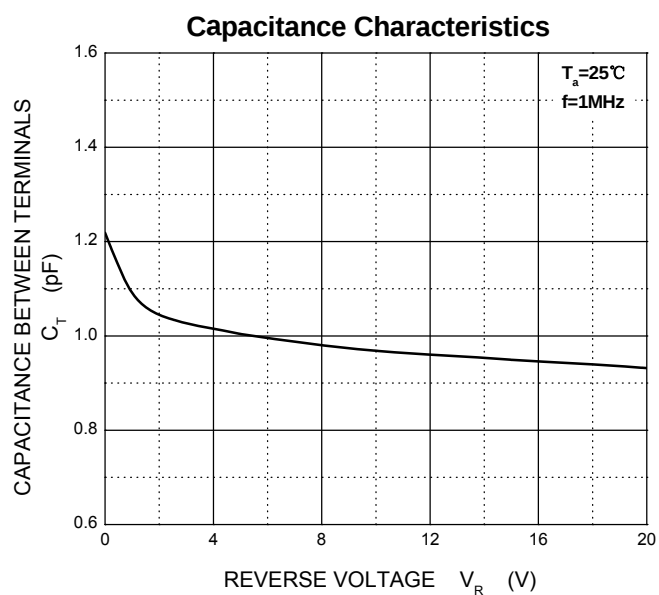
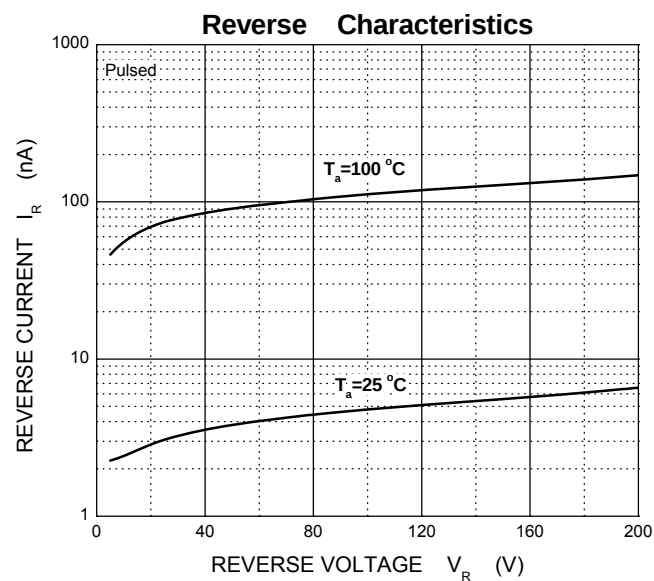
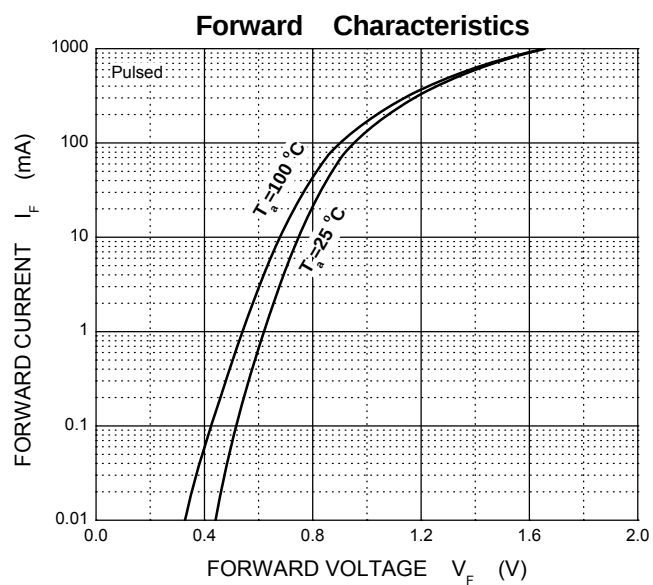
### MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                                    | BAS19           | BAS20 | Unit                        |
|-----------------|--------------------------------------------------------------|-----------------|-------|-----------------------------|
| $V_{RRM}$       | Repetitive Peak Reverse Voltage                              | 120             | 200   | V                           |
| $V_{RWM}$       | Working Peak Reverse Voltage                                 | 100             | 150   | V                           |
| $I_O$           | Average Rectified Output Current                             | 200             |       | mA                          |
| $I_{FSM}$       | Non-Repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$ | 2.5             |       | A                           |
| $P_d$           | Power Dissipation                                            | 250             |       | mW                          |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient                  | 500             |       | $^{\circ}\text{C}/\text{W}$ |
| $T_J$           | Junction temperature                                         | 150             |       | $^{\circ}\text{C}$          |
| $T_{stg}$       | Storage Temperature                                          | $-55 \sim +150$ |       | $^{\circ}\text{C}$          |

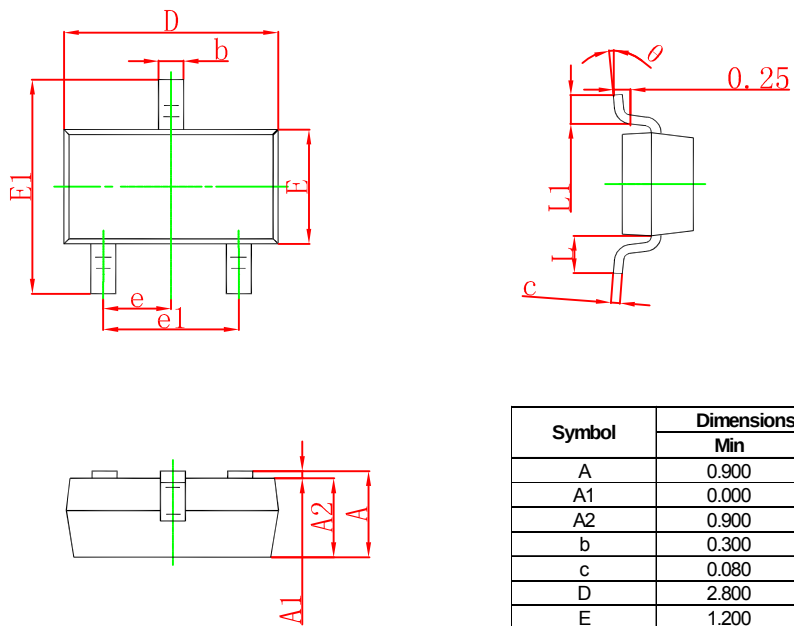
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                 | Symbol     | Test Condition                                 | Min        | Typ | Max  | Unit          |
|---------------------------|------------|------------------------------------------------|------------|-----|------|---------------|
| Reverse breakdown voltage | $V_{(BR)}$ | $I_R=100\mu\text{A}$                           | 120<br>200 |     |      | V             |
| Reverse current           | $I_R$      | $V_R=100\text{V}$<br>$V_R=150\text{V}$         |            |     | 0.1  | $\mu\text{A}$ |
| Forward voltage           | $V_F$      | $I_F=100\text{mA}$                             |            |     | 1    | V             |
|                           |            | $I_F=200\text{mA}$                             |            |     | 1.25 | V             |
| Diodes capacitance        | $C_D$      | $V_R=0\text{V}$ , $f=1\text{MHz}$              |            |     | 5    | pF            |
| Reveres recovery time     | $t_{rr}$   | $I_F=I_R=30\text{mA}$ , $I_{rr}=0.1 \cdot I_R$ |            |     | 50   | ns            |

## Typical Characteristics

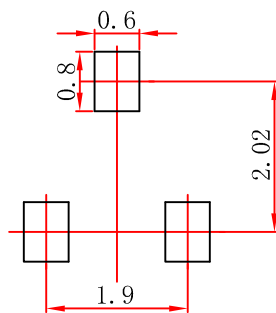


## SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

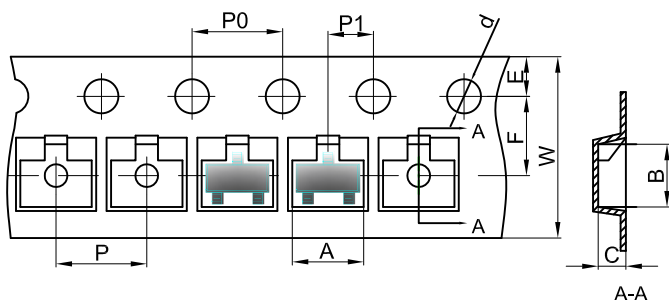
## SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05$  mm.
  3. The pad layout is for reference purposes only.

## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape

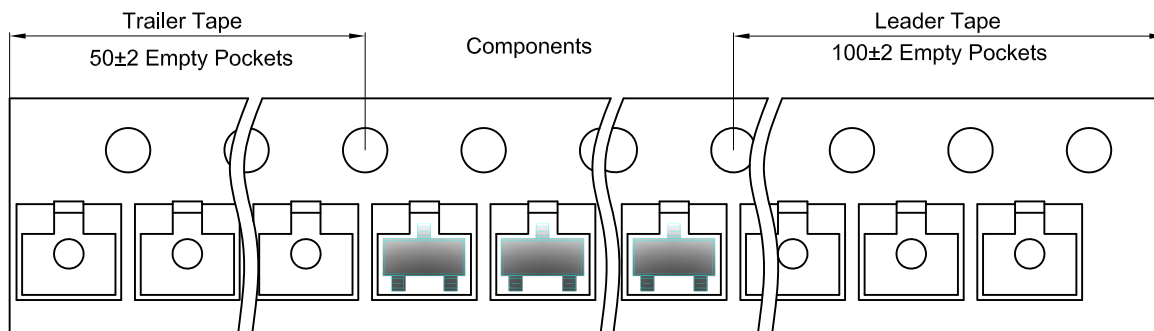


#### Packaging Description:

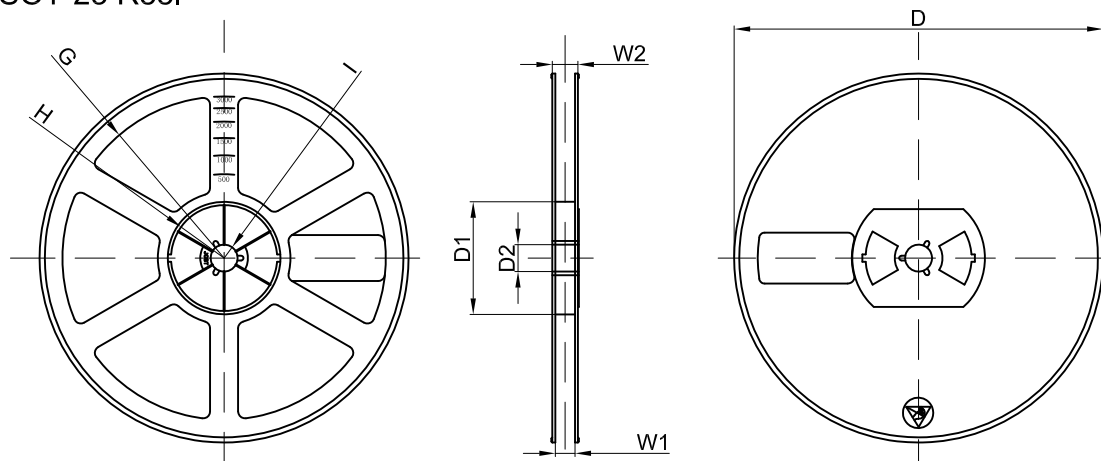
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOT-23                       | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-23 Tape Leader and Trailer



### SOT-23 Reel



| Dimensions are in millimeter |         |       |       |        |        |       |      |       |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option                  | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
| 7" Dia                       | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL     | Reel Size | Box        | Box Size(mm) | Carton      | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch    | 45,000 pcs | 203×203×195  | 180,000 pcs | 438×438×220     |          |