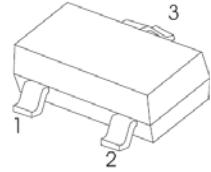


## Fast Switching Speed Diode

### FEATURES

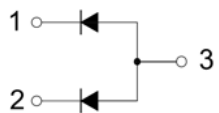
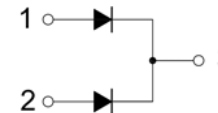
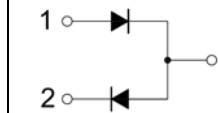
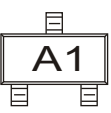
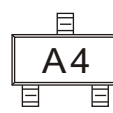
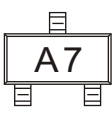
- Fast Switching Speed
- For General Purpose Switching Applications
- High Conductance
- AEC-Q101 qualified (Automotive grade with suffix "Q")
- Expsemi electronics

### SOT-23



### Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL : 94V-0
- Mounting Position: Any

| BAW56                                                                              | BAV70                                                                                | BAV99                                                                                |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |    |   |
| MARKING:A1                                                                         | MARKING:A4                                                                           | MARKING:A7                                                                           |
|  |  |  |

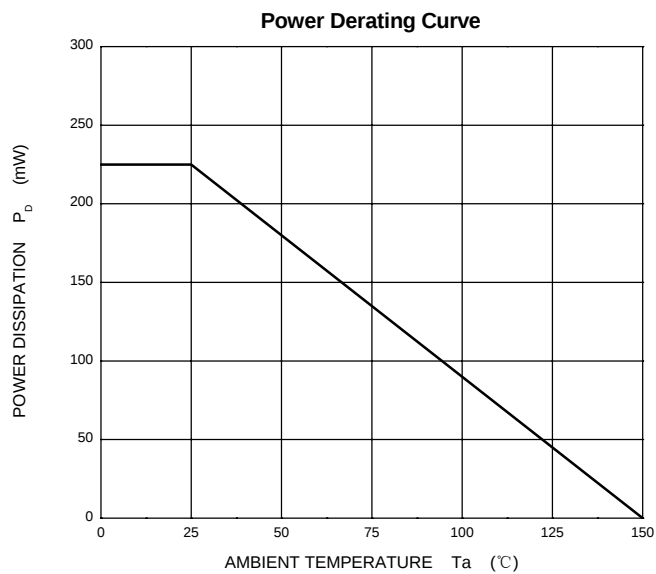
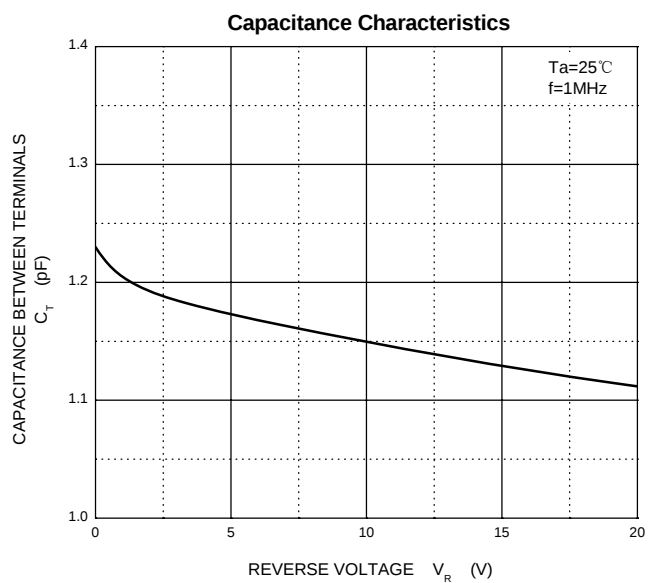
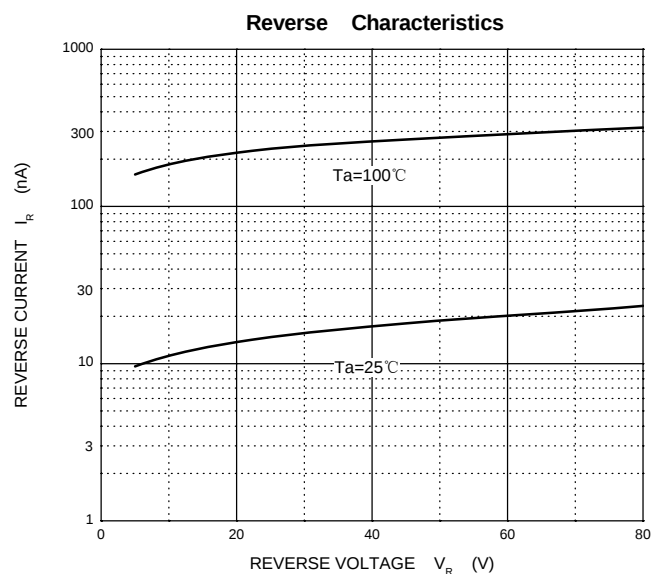
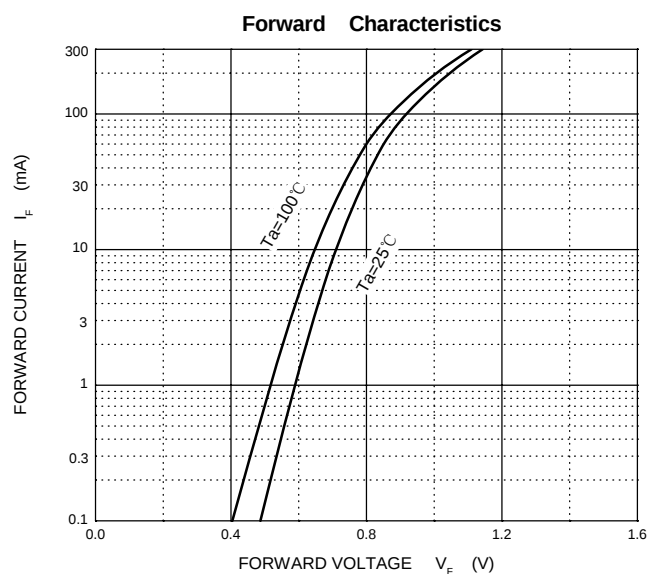
### Maximum Ratings @Ta=25°C

| Parameter                                          | Symbol          | Limit    | Unit |
|----------------------------------------------------|-----------------|----------|------|
| Reverse Voltage                                    | $V_R$           | 70       | V    |
| Forward Current                                    | $I_F$           | 200      | mA   |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms | $I_{FSM}$       | 2.0      | A    |
| Power Dissipation                                  | $P_D$           | 225      | mW   |
| Thermal Resistance Junction to Ambient             | $R_{\theta JA}$ | 556      | °C/W |
| Junction Temperature                               | $T_J$           | 150      | °C   |
| Storage Temperature range                          | $T_{STG}$       | -55~+150 | °C   |

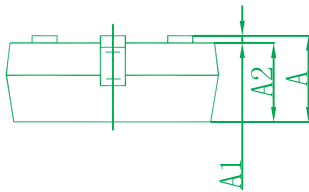
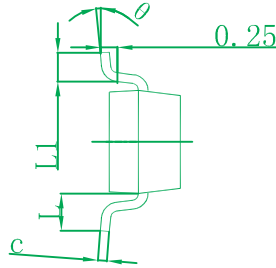
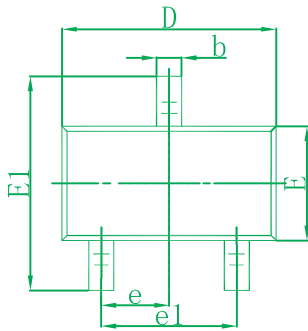
### Electrical Characteristics @Ta=25°C

| Parameter                     | Symbol   | Min | Typ | Max   | Unit    | Conditions                                                            |
|-------------------------------|----------|-----|-----|-------|---------|-----------------------------------------------------------------------|
| Reverse breakdown voltage     | $V_R$    | 70  |     |       | V       | $I_R=100\mu A$                                                        |
| Forward voltage               | $V_{F1}$ |     |     | 0.715 | V       | $I_F=1mA$                                                             |
|                               | $V_{F2}$ |     |     | 0.855 | V       | $I_F=10mA$                                                            |
|                               | $V_{F3}$ |     |     | 1     | V       | $I_F=50mA$                                                            |
|                               | $V_{F4}$ |     |     | 1.25  | V       | $I_F=150mA$                                                           |
| Reverse current               | $I_R$    |     |     | 2.5   | $\mu A$ | $V_R=70V$                                                             |
| Capacitance between terminals | $C_T$    |     |     | 1.5   | pF      | $V_R=0, f=1MHz$                                                       |
| Reverse recovery time         | $t_{rr}$ |     |     | 6     | ns      | $I_F = I_R = 10mA$ ,<br>$I_{rr} = 0.1 \times I_R$ , $R_L = 100\Omega$ |

## Typical Characteristics

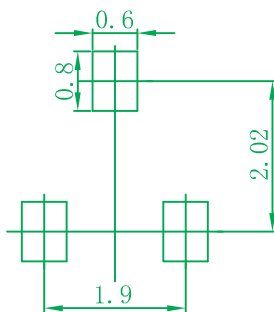


## SOT-23 Package Information



| 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                     | 1.150 | 0.035                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.050 | 0.110                | 0.120 |
| 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:  $\pm 0.05\text{mm}$ .  
 3. The pad layout is for reference purposes only.

## Ordering information

| Device            | Package | Shipping                |
|-------------------|---------|-------------------------|
| BAW56 BAV70 BAV99 | SOT-23  | 3000/Tape&Reel(7inches) |