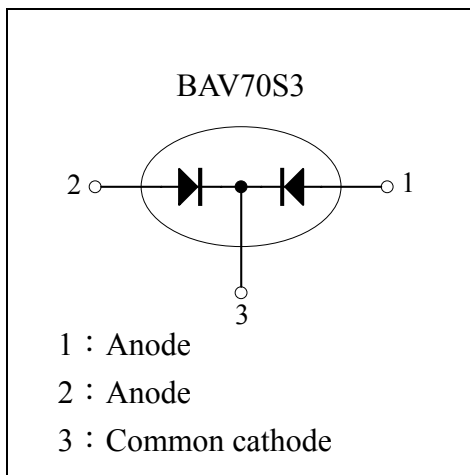
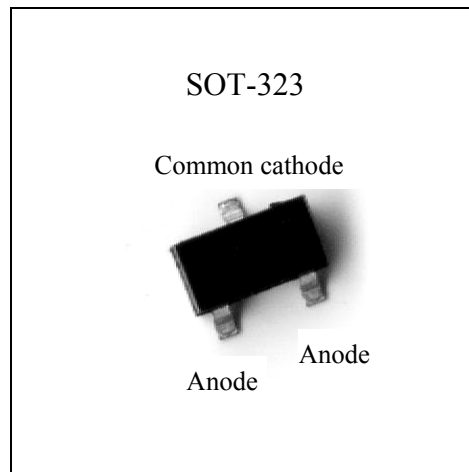


High – speed double diode

BAV70S3

Description

The BAV70S3 consists of two high-speed switching diodes with common cathodes, fabricated in planar technology, and encapsulated in the small SOT-323 plastic SMD package.

Equivalent Circuit**Outline****Features**

- Small plastic SMD package
- High switching speed: max. 4ns
- Continuous reverse voltage: max. 75V
- Repetitive peak reverse voltage: max. 85V
- Repetitive peak forward current: max. 450mA.

Applications

- High-speed switching in thick and thin-film circuits.



Absolute Maximum Ratings @TA=25°C

| Parameters | Symbol | Min | Max | Unit |
|---|-----------|------------------|------|------|
| Repetitive peak reverse voltage | V_{RRM} | - | 85 | V |
| Continuous reverse voltage | V_R | - | 75 | V |
| Continuous forward current(single diode loaded) | I_F | - | 215 | mA |
| Continuous forward current(double diode loaded) | | - | 125 | |
| Repetitive peak forward current | I_{FRM} | | 450 | mA |
| Non-repetitive peak forward current @square wave, $T_j=125^\circ\text{C}$ prior to surge | I_{FSM} | $t=1\mu\text{s}$ | 4 | A |
| | | $t=1\text{ms}$ | 1 | A |
| | | $t=1\text{s}$ | 0.5 | A |
| Total power dissipation(Note 1) | P_{tot} | | 200 | mW |
| Junction Temperature | T_j | - | 150 | °C |
| Storage Temperature | T_{stg} | -65 | +150 | °C |

Note 1: Device mounted on an FR-4 PCB.

Electrical Characteristics @ Tj=25°C unless otherwise specified

| Parameters | Symbol | Conditions | Min | Typ. | Max | Unit |
|--------------------------|----------|---|-----|------|------|---------------|
| Forward voltage | V_F | $I_F=1\text{mA}$ | - | - | 715 | mV |
| | | $I_F=10\text{mA}$ | - | - | 855 | mV |
| | | $I_F=50\text{mA}$ | - | - | 1 | V |
| | | $I_F=150\text{mA}$ | - | - | 1.25 | V |
| Reverse current | I_R | $V_R=25\text{V}$ | - | - | 30 | nA |
| | | $V_R=75\text{V}$ | - | - | 2.5 | μA |
| | | $V_R=25\text{V}, T_j=150^\circ\text{C}$ | - | - | 60 | μA |
| | | $V_R=75\text{V}, T_j=150^\circ\text{C}$ | - | - | 100 | μA |
| Diode capacitance | C_d | $V_R=0\text{V}, f=1\text{MHz}$ | - | - | 1.5 | pF |
| Reverse recovery time | t_{rr} | when switched from $I_F=10\text{mA}$ to $I_R=10\text{mA}, R_L=100\Omega$, measured at $I_R=1\text{mA}$ | - | - | 4 | ns |
| Forward recovery voltage | V_{fr} | when switched from $I_F=10\text{mA}$ $t_r=20\text{ns}$ | - | - | 1.75 | V |

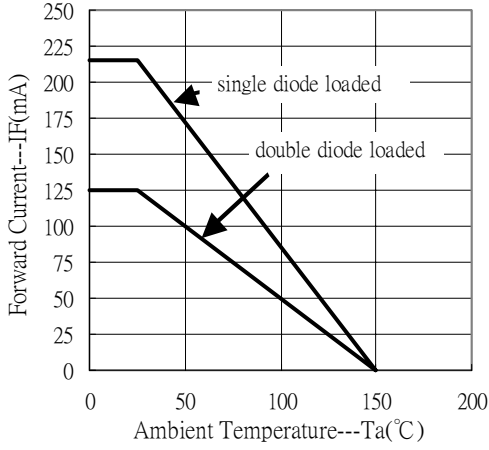
Thermal Characteristics

| Symbol | Parameter | Conditions | Value | Unit |
|---------------|---|------------|-------|------|
| $R_{th, j-a}$ | thermal resistance from junction to ambient | Note 1 | 625 | °C/W |

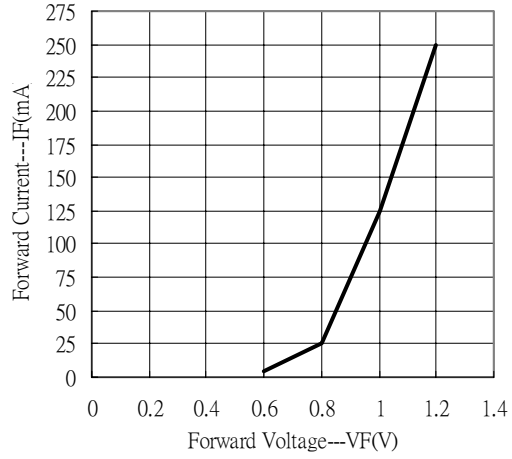
Note 1: Device mounted on an FR-4 PCB.

Characteristic Curves

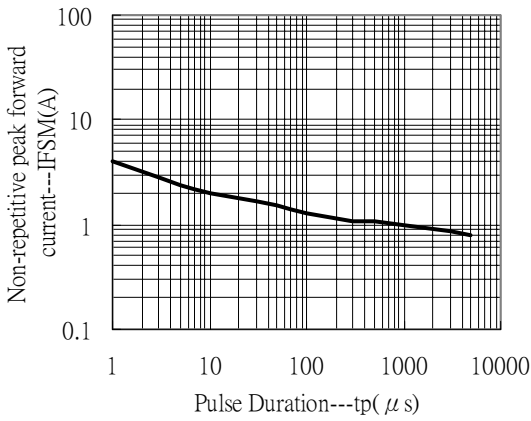
Forward Current vs Ambient Temperature



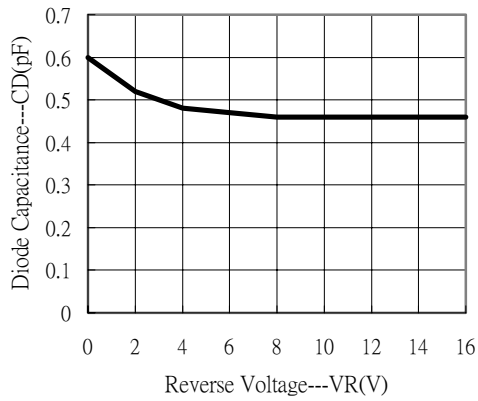
Forward Current vs Forward Voltage



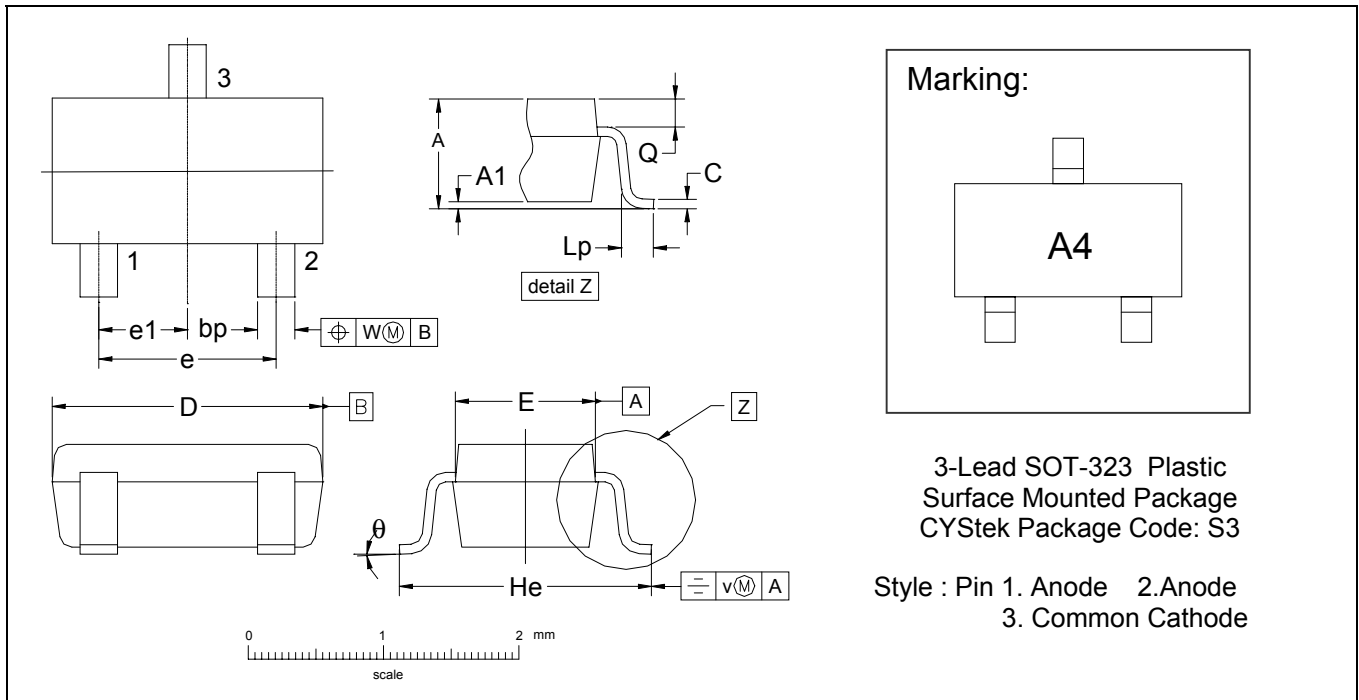
Non-repetitive peak forward current vs pulse duration



Diode Capacitance vs Reverse Voltage



SOT-323 Dimension



*: Typical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|--------|--------|-------------|------|-----|--------|--------|-------------|------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.0315 | 0.0433 | 0.80 | 1.10 | e1 | 0.0256 | - | 0.65 | - |
| A1 | 0.0000 | 0.0039 | 0.00 | 0.10 | He | 0.0787 | 0.0886 | 2.00 | 2.25 |
| bp | 0.0118 | 0.0157 | 0.30 | 0.40 | Lp | 0.0059 | 0.0177 | 0.15 | 0.45 |
| C | 0.0039 | 0.0098 | 0.10 | 0.25 | Q | 0.0051 | 0.0091 | 0.13 | 0.23 |
| D | 0.0709 | 0.0866 | 1.80 | 2.20 | v | 0.0079 | - | 0.2 | - |
| E | 0.0453 | 0.0531 | 1.15 | 1.35 | w | 0.0079 | - | 0.2 | - |
| e | 0.0512 | - | 1.3 | - | θ | - | - | 10° | 0° |

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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