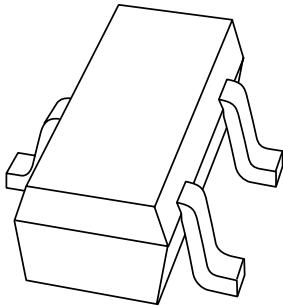


DATA SHEET



BAV70T High-speed double diode

Product specification
File under Discrete Semiconductors, SC01

1997 Dec 19

High-speed double diode

BAV70T

FEATURES

- Very small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

APPLICATIONS

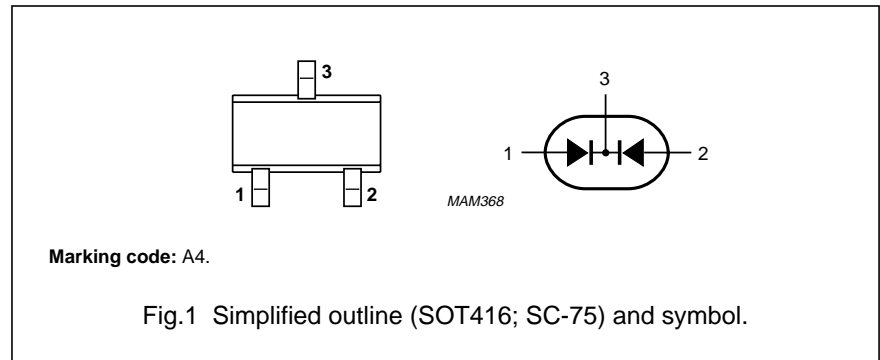
- High-speed switching in e.g. surface mounted circuits.

DESCRIPTION

Two high-speed switching diodes in a common cathode configuration, fabricated in planar technology, in a very small rectangular SMD SOT416 (SC-75) package.

PINNING

| PIN | DESCRIPTION |
|-----|----------------|
| 1 | anode 1 |
| 2 | anode 2 |
| 3 | common cathode |



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|-------------------------------------|---|------|------|------|
| Per diode (unless otherwise specified) | | | | | |
| V_{RRM} | repetitive peak reverse voltage | | – | 85 | V |
| V_R | continuous reverse voltage | | – | 75 | V |
| I_F | continuous forward current | $T_s = 90\text{ °C}$; see Fig.2 single diode loaded | – | 150 | mA |
| | | both diodes loaded | – | 75 | mA |
| I_{FRM} | repetitive peak forward current | | – | 500 | mA |
| I_{FSM} | non-repetitive peak forward current | square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\text{ }\mu\text{s}$ | – | 4 | A |
| | | $t = 1\text{ ms}$ | – | 1 | A |
| | | $t = 1\text{ s}$ | – | 0.5 | A |
| P_{tot} | total power dissipation | $T_s = 90\text{ °C}$; one diode loaded | – | 170 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | +150 | °C |

High-speed double diode

BAV70T

ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MAX. | UNIT |
|------------------|--------------------------|---|-----------------------------|---|
| Per diode | | | | |
| V_F | forward voltage | see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 50\text{ mA}$ $I_F = 150\text{ mA}$ | 0.715 0.855 1 1.25 | V V V V |
| I_R | reverse current | see Fig.5 $V_R = 25\text{ V}$ $V_R = 75\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ }^\circ\text{C}$ $V_R = 75\text{ V}; T_j = 150\text{ }^\circ\text{C}$ | 30 2 60 100 | nA μA μA μA |
| C_d | diode capacitance | $V_R = 0; f = 1\text{ MHz};$ see Fig.6 | 1.5 | pF |
| t_{rr} | reverse recovery time | switching from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA};$ $R_L = 100\ \Omega;$ measured at $I_R = 1\text{ mA};$ see Fig.7 | 4 | ns |
| V_{fr} | forward recovery voltage | switched to $I_F = 10\text{ mA}; t_r = 20\text{ ns};$ see Fig.8 | 1.75 | V |

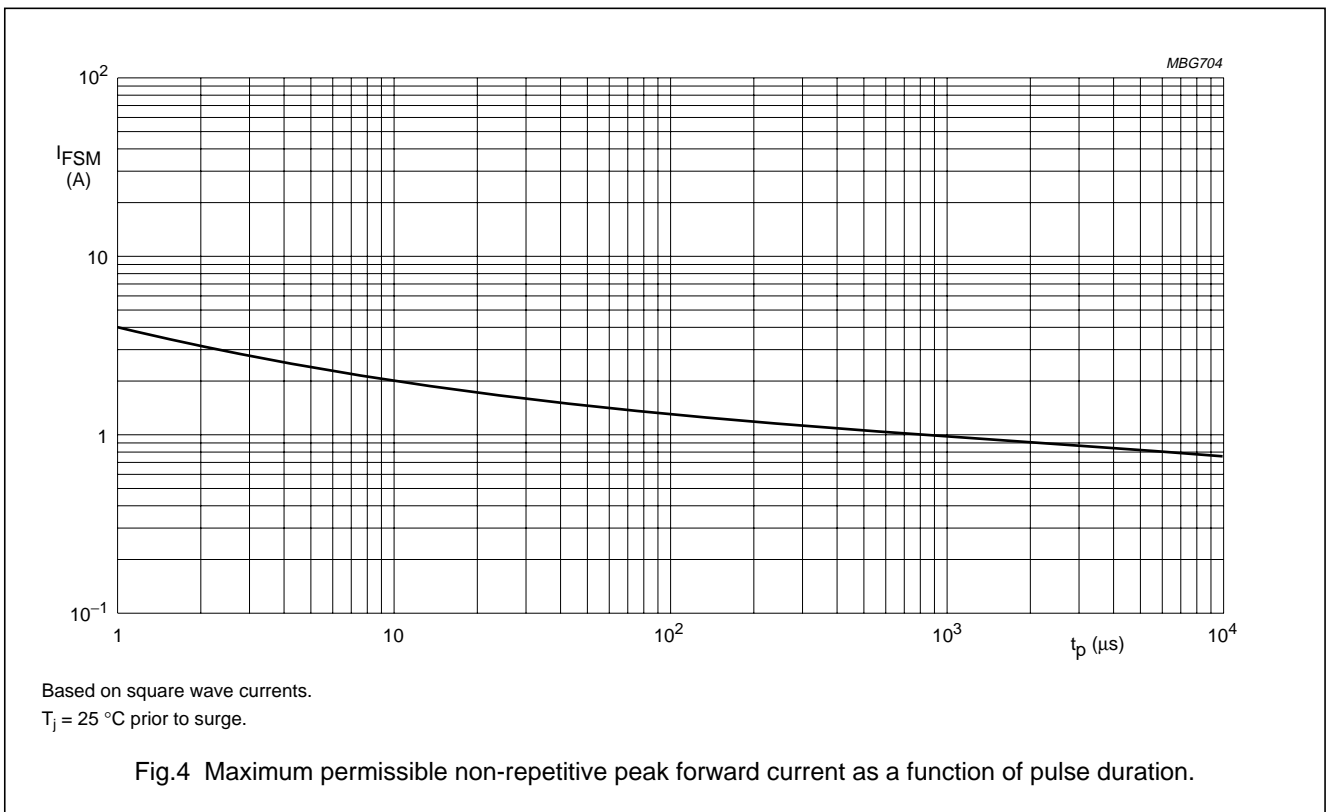
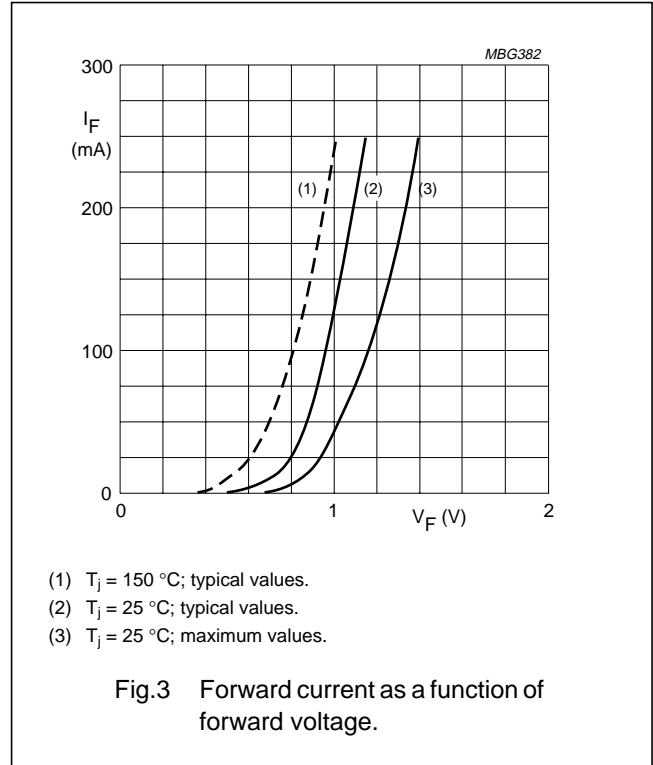
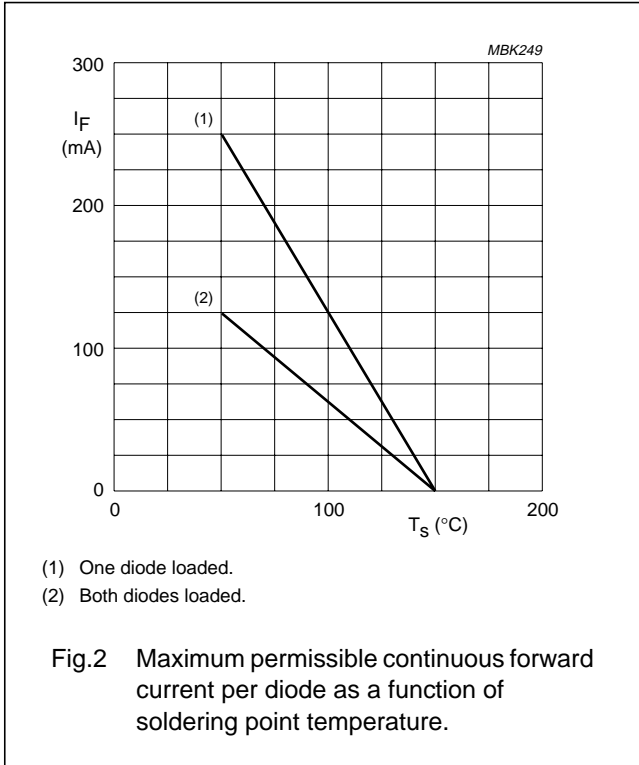
THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------------|-------|------|
| $R_{th\ j-s}$ | thermal resistance from junction to soldering point | one diode loaded | 350 | K/W |

High-speed double diode

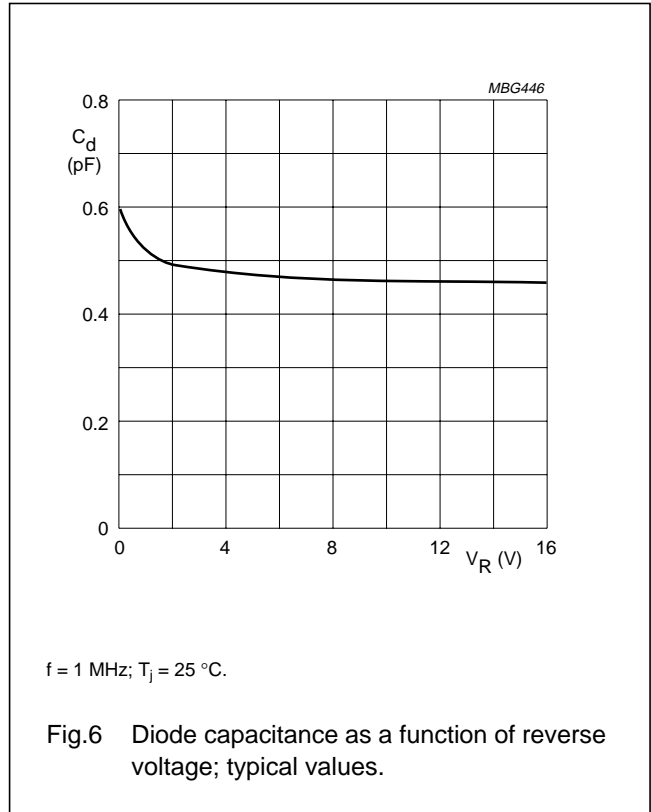
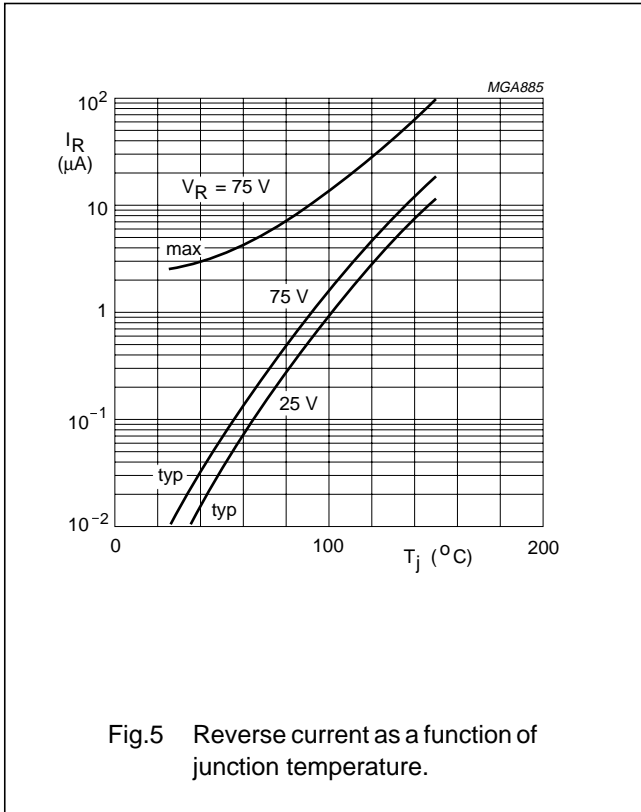
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GRAPHICAL DATA



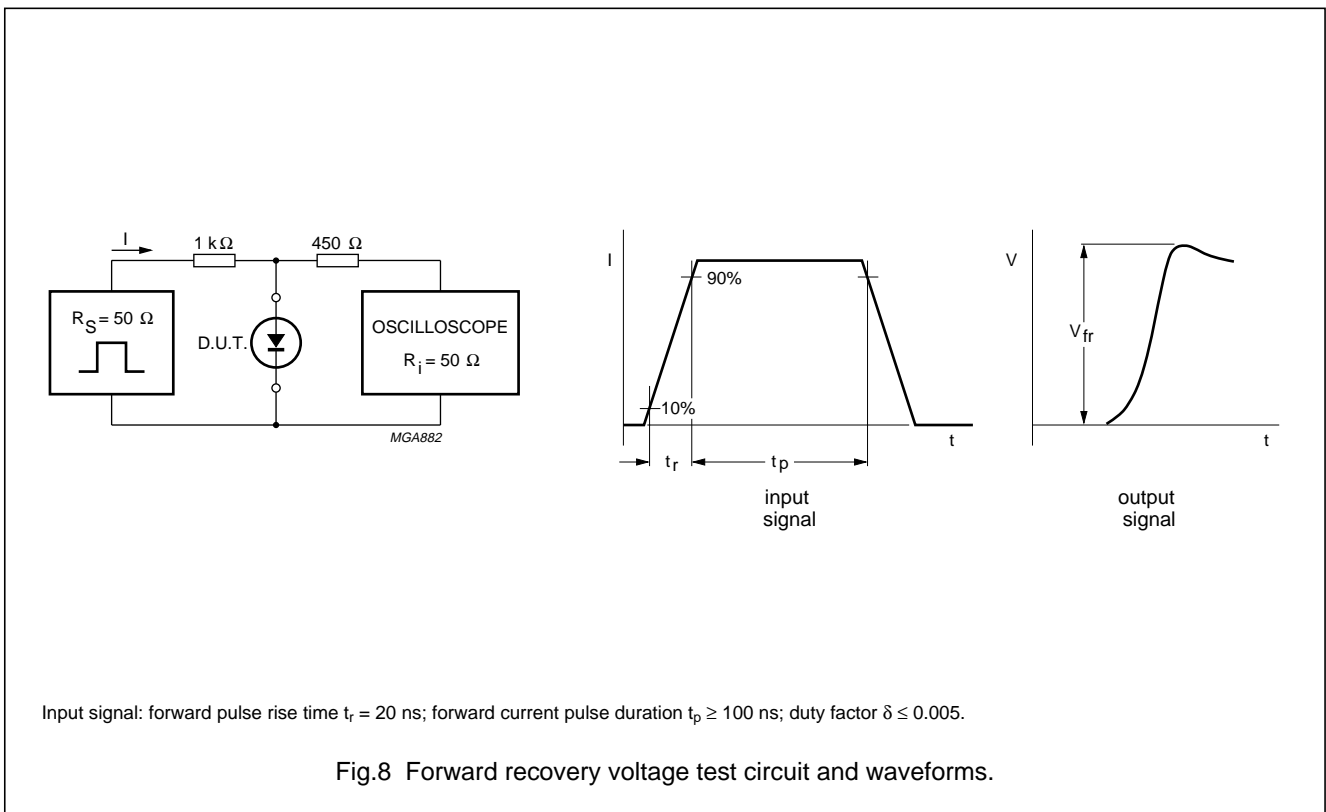
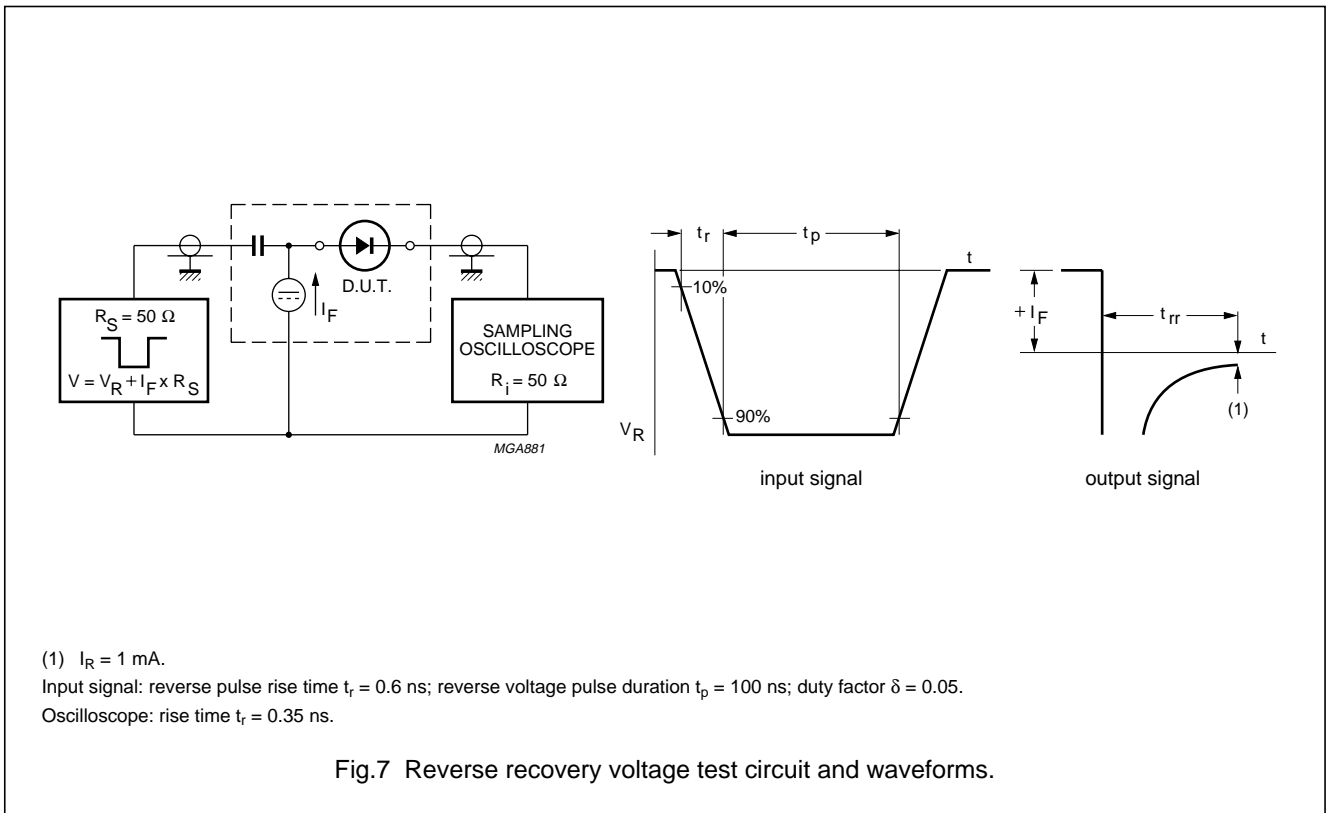
High-speed double diode

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High-speed double diode

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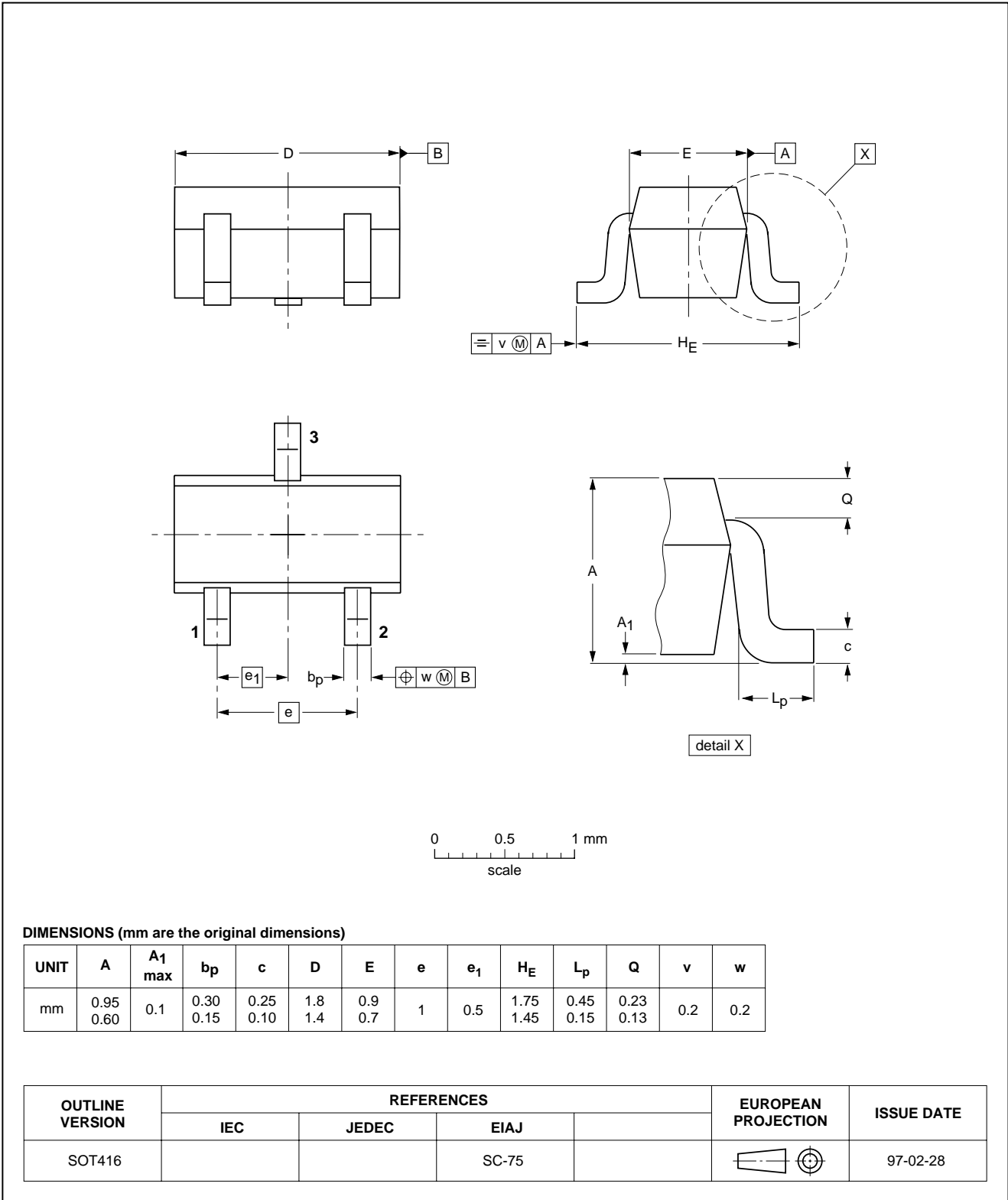
High-speed double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT416



High-speed double diode

BAV70T

DEFINITIONS

| Data Sheet Status | |
|---|---|
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

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High-speed double diode

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NOTES

High-speed double diode

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NOTES

High-speed double diode

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NOTES

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