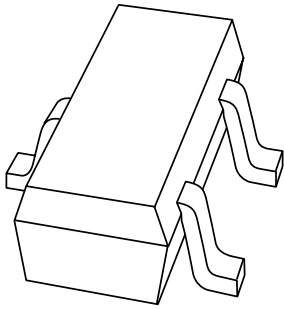


# DATA SHEET



## **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

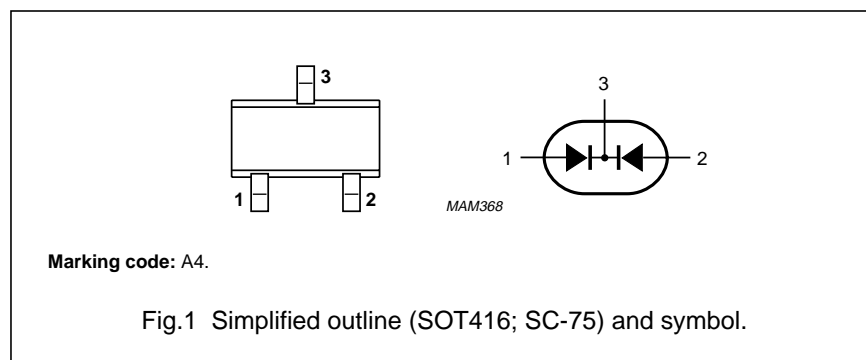
- High-speed switching in e.g. surface mounted circuits.

## 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
<b>Per diode</b> (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 $t = 1\ \mu\text{s}$	–	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**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
<b>Per diode</b>				
$V_F$	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 $V_R = 25\text{ V}$ $V_R = 75\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ °C}$ $V_R = 75\text{ V}; T_j = 150\text{ °C}$	30 2 60 100	nA $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$
$C_d$	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

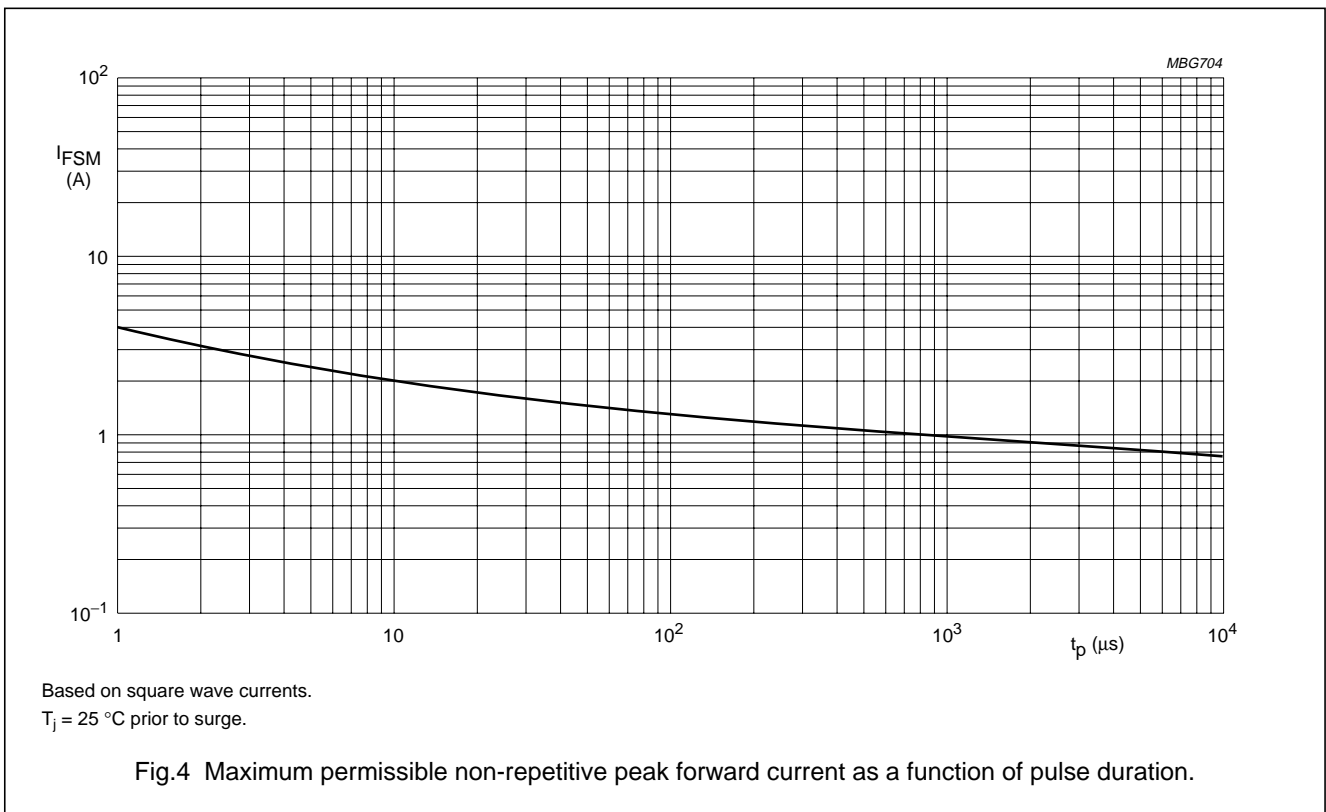
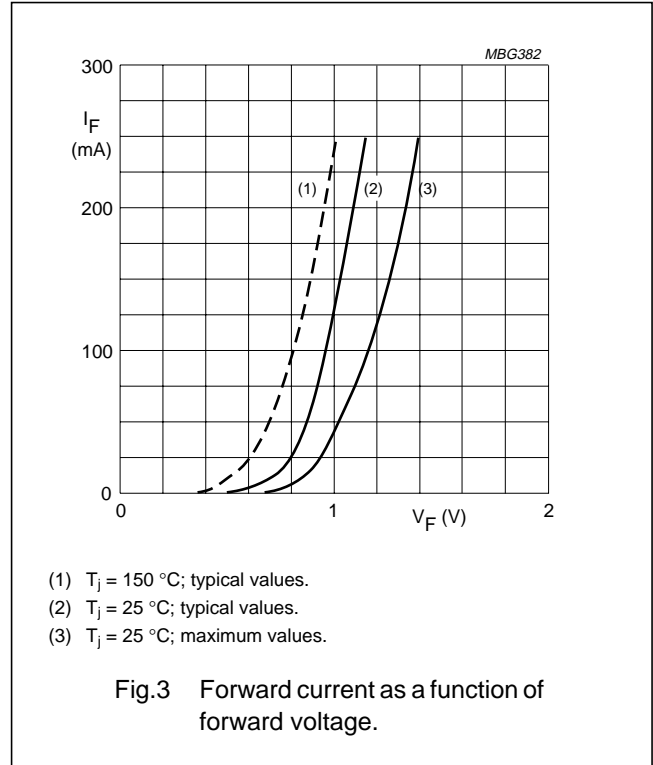
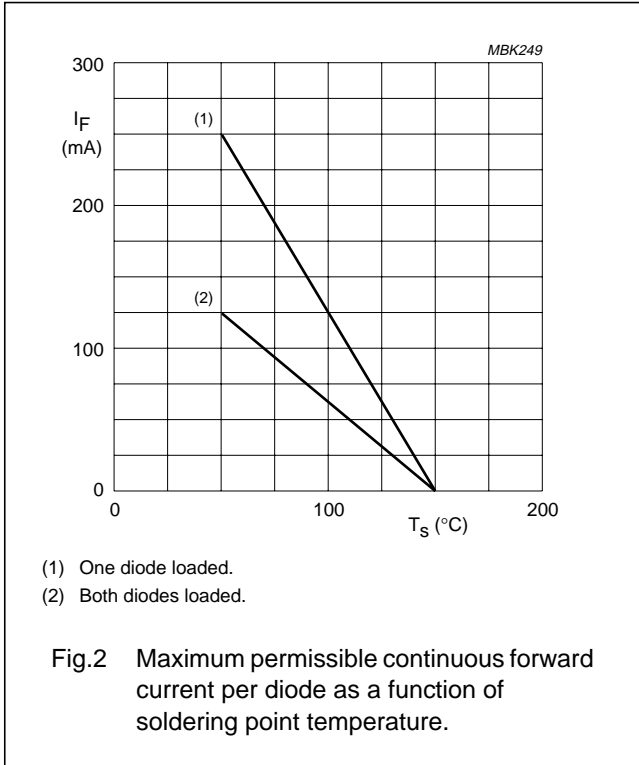
**THERMAL CHARACTERISTICS**

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

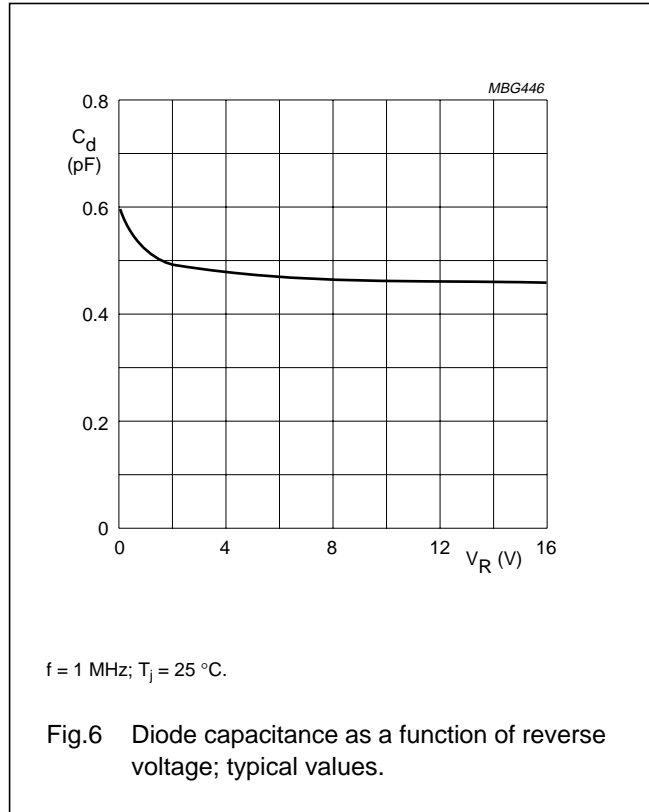
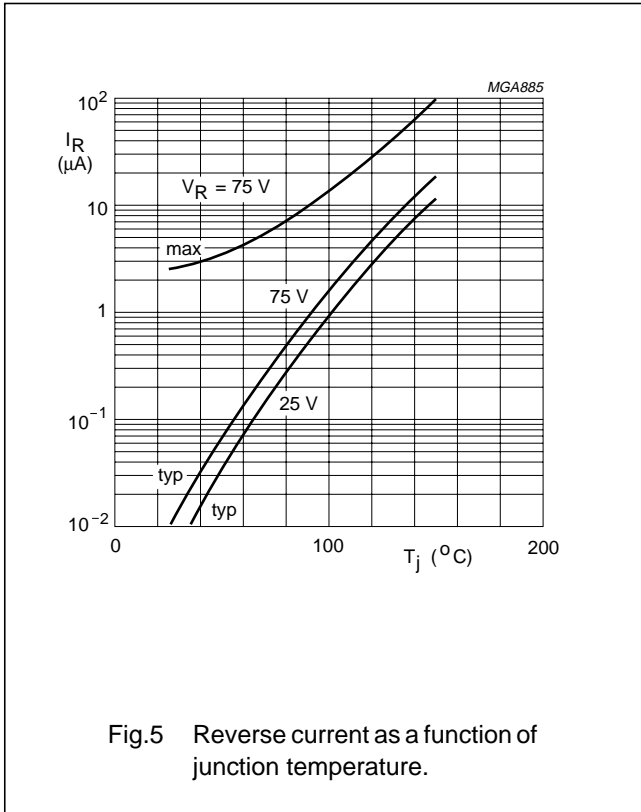
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GRAPHICAL DATA



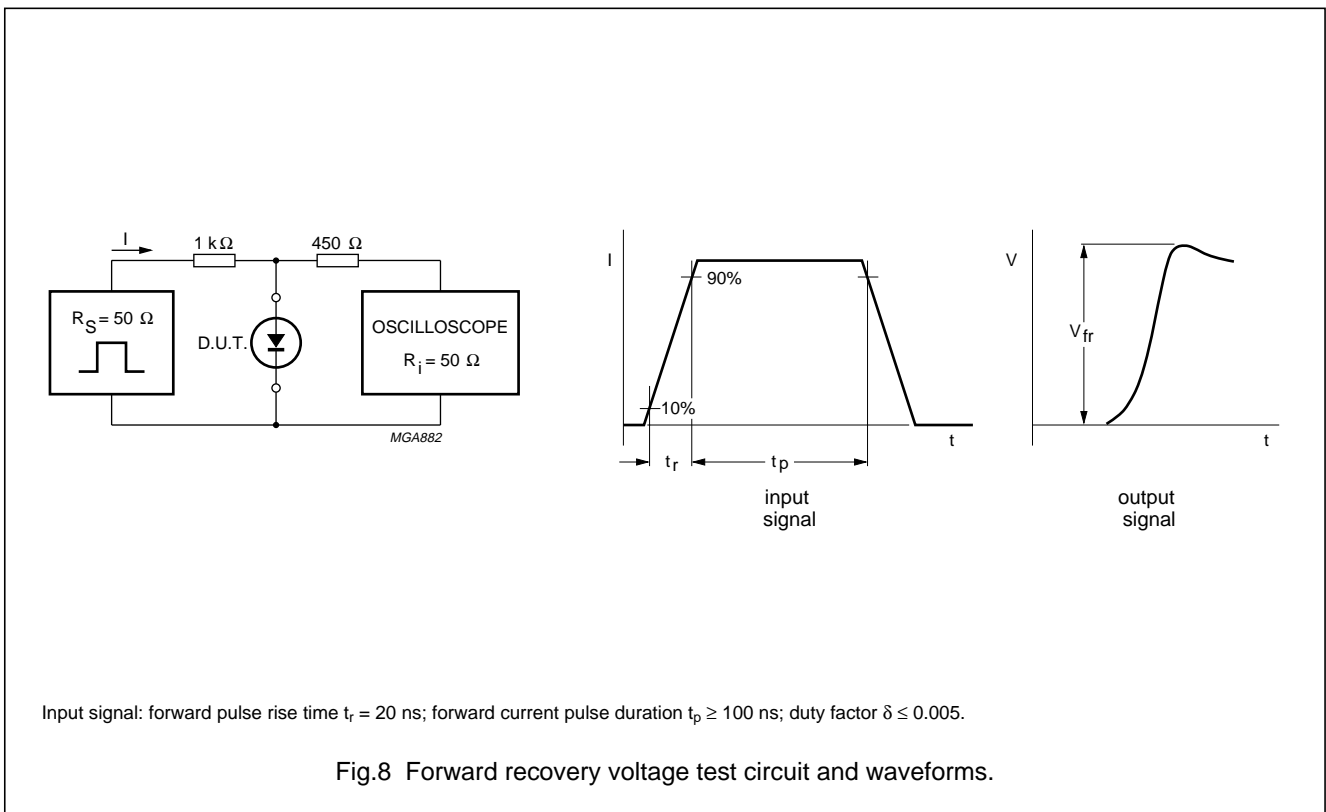
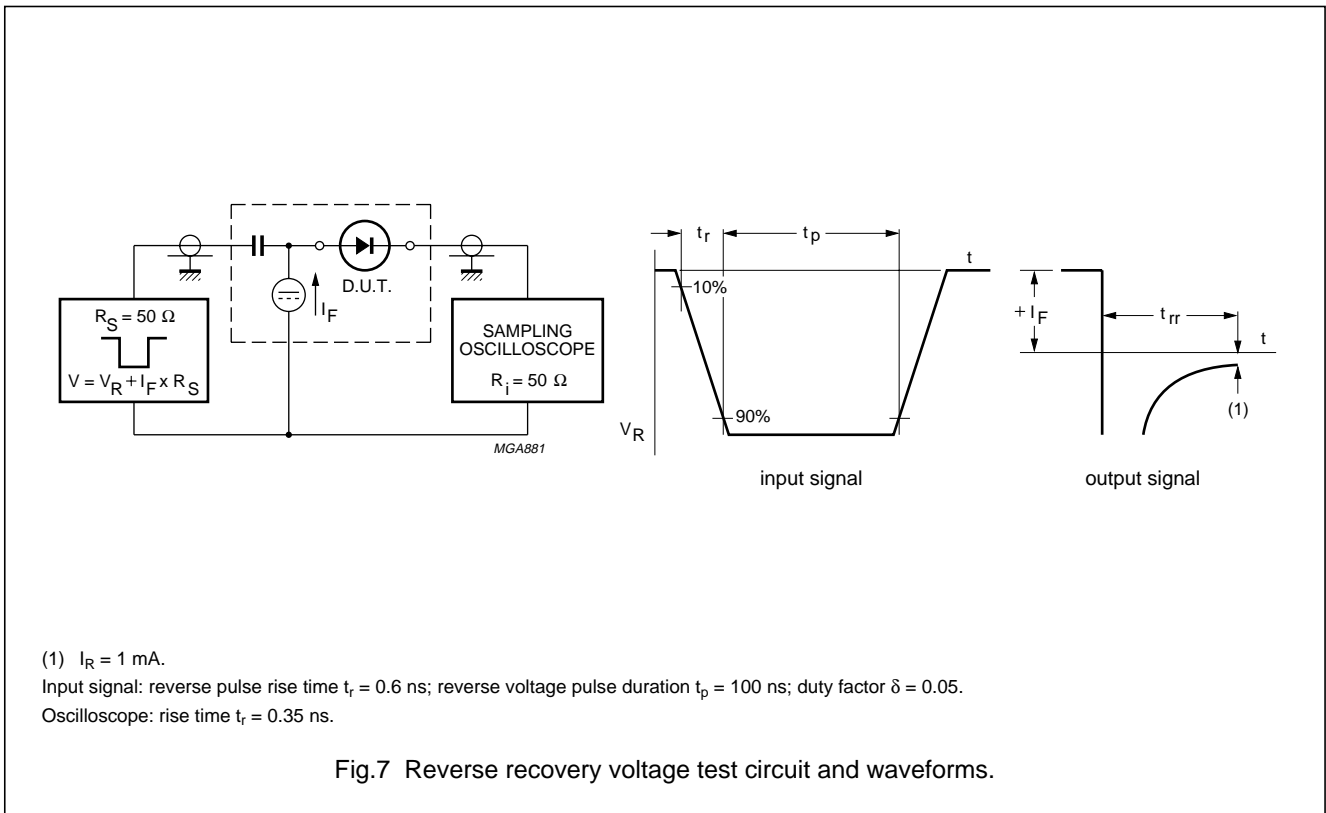
High-speed double diode

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High-speed double diode

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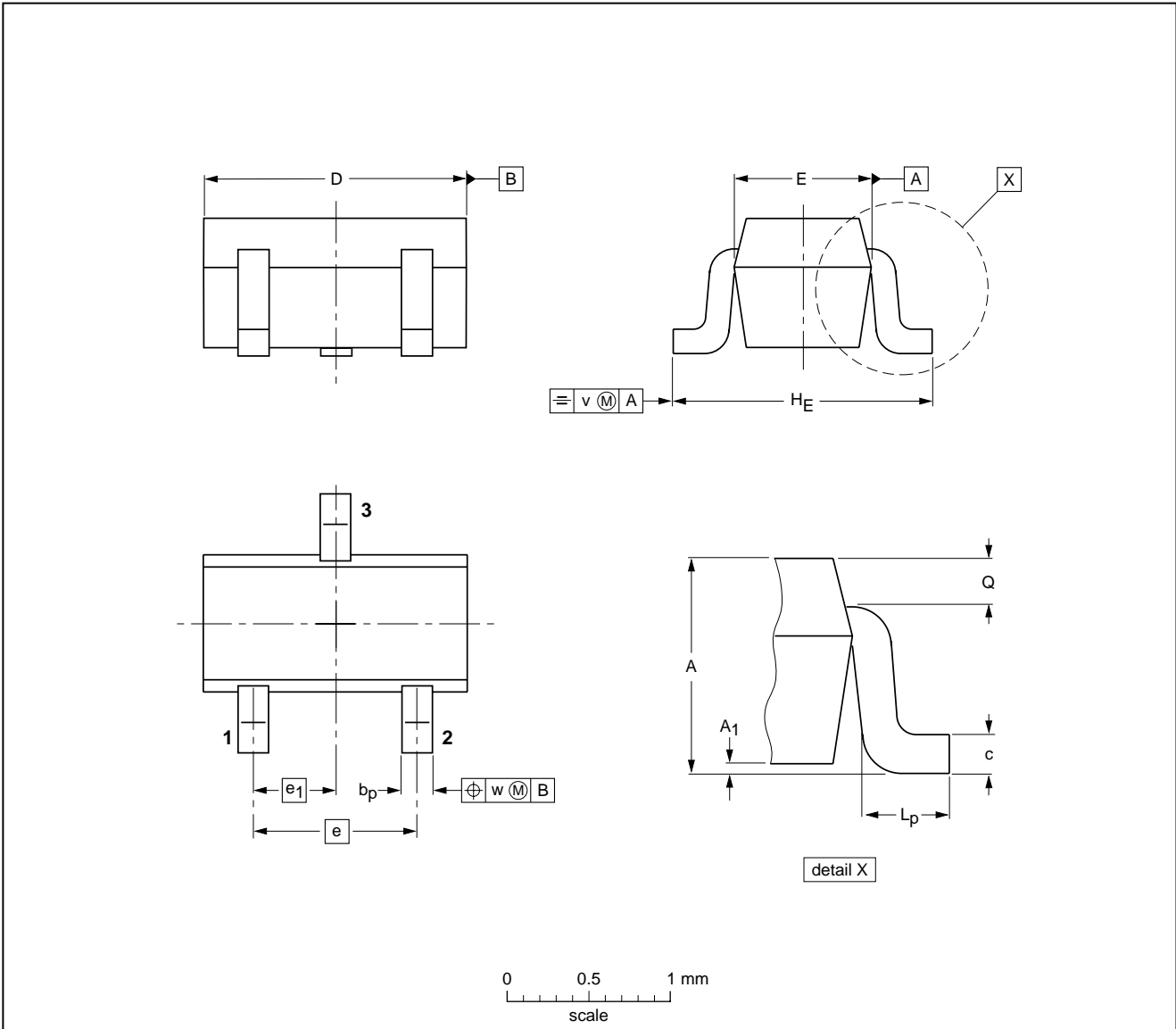
# High-speed double diode

BAV70T

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT416



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	0.95 0.60	0.1	0.30 0.15	0.25 0.10	1.8 1.4	0.9 0.7	1	0.5	1.75 1.45	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT416			SC-75			97-02-28

## High-speed double diode

BAV70T

**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.



High-speed double diode

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**NOTES**

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**NOTES**

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**NOTES**

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