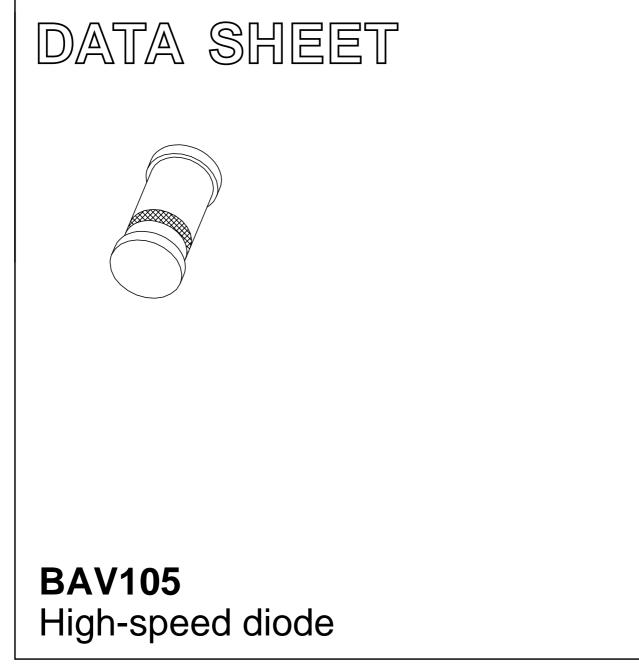
DISCRETE SEMICONDUCTORS



Product specification Supersedes data of April 1996 1996 Sep 17



Product specification

BAV105

FEATURES

- Small hermetically sealed glass
 SMD package
- High switching speed: max. 6 ns
- General application
- Continuous reverse voltage: max. 60 V
- Repetitive peak reverse voltage: max. 60 V
- Repetitive peak forward current: max. 600 mA.

APPLICATIONS

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

LIMITING VALUES

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

DESCRIPTION

package.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage		_	60	V
V _R	continuous reverse voltage		_	60	V
I _F	continuous forward current	see Fig.2; note 1	_	300	mA
I _{FRM}	repetitive peak forward current		-	600	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	_	9	A
		t = 100 μs	_	3	А
		t = 1 s	-	1	А
P _{tot}	total power dissipation	T _{amb} = 25 °C; note 1	-	500	mW
T _{stg}	storage temperature		-65	+200	°C
T _i	junction temperature		_	200	°C

Note

1. Device mounted on an FR4 printed-circuit board.

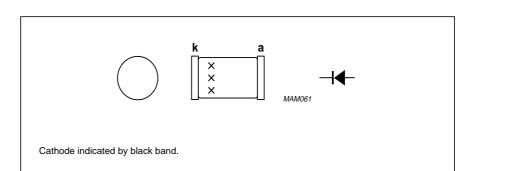


Fig.1 Simplified outline (SOD80C) and symbol.

The BAV105 is a high-speed switching diode fabricated in planar technology,

and encapsulated in the small hermetically sealed glass SOD80C SMD

BAV105

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _F	forward voltage	see Fig.3			
		I _F = 10 mA	-	750	mV
		I _F = 200 mA	-	1000	mV
		I _F = 500 mA	_	1.25	V
		I _F = 200 mA; T _j = 100 °C	_	950	mV
I _R	reverse current	see Fig.5			
		V _R = 60 V	_	100	nA
		V _R = 60 V; T _j = 150 °C	-	100	μA
C _d	diode capacitance	$f = 1 \text{ MHz}; V_R = 0; \text{ see Fig.6}$	_	2.5	pF
t _{rr}	reverse recovery time	when switched from $I_F = 400$ mA to $I_R = 400$ mA; $R_L = 100 \Omega$; measured at	_	6	ns
		$I_R = 40 \text{ mA}$; $N_L = 100 \Omega_2$; measured at $I_R = 40 \text{ mA}$; see Fig.7			
V _{fr}	forward recovery voltage	when switched from $I_F = 400 \text{ mA}$; $t_{r1} = 30 \text{ ns}$; see Fig.8	_	2	V
		when switched from $I_F = 400$ mA; $t_{r2} = 100$ ns; see Fig.8	_	1.5	V

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-tp}	thermal resistance from junction to tie-point		300	K/W
R _{th j-a}	thermal resistance from junction to ambient	note 1	350	K/W

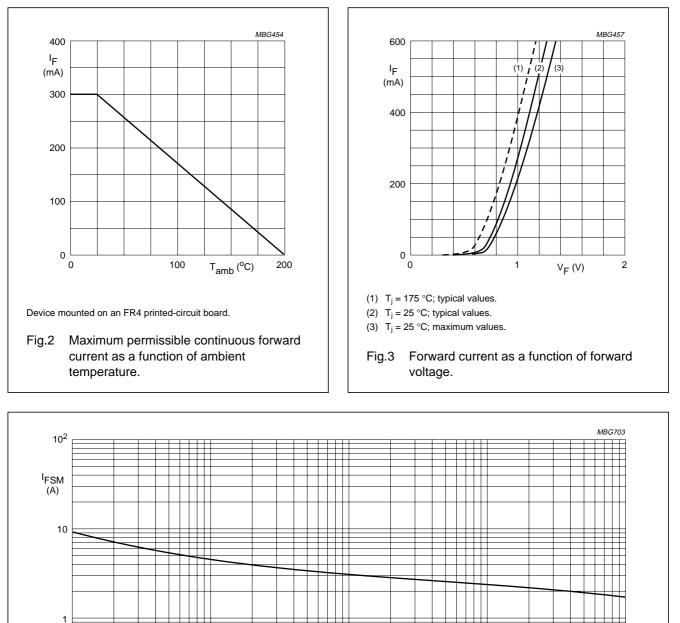
Note

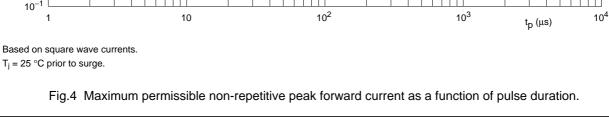
1. Device mounted on an FR4 printed-circuit board.

Product specification

BAV105

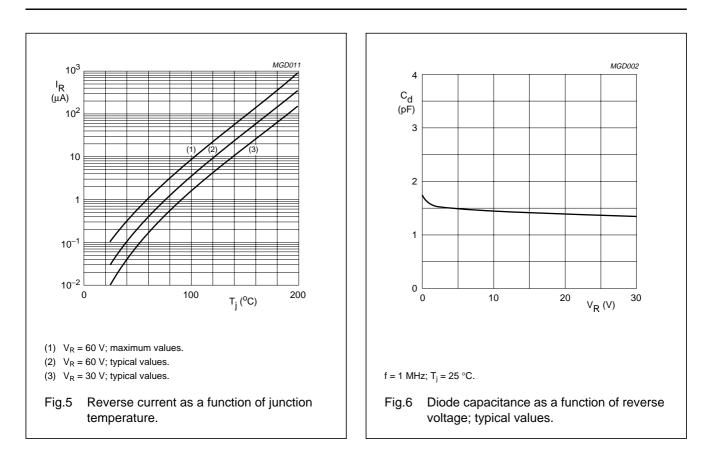




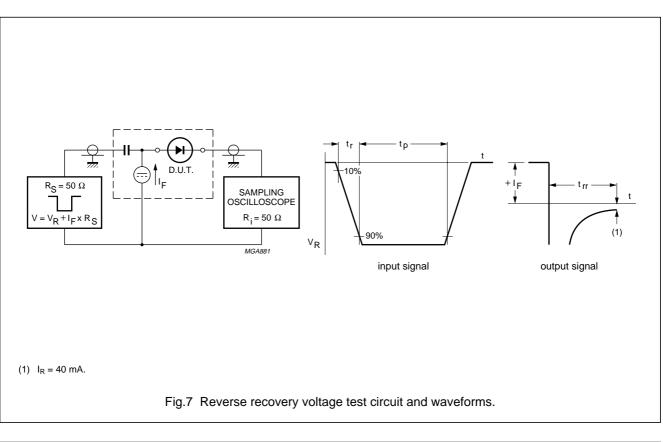


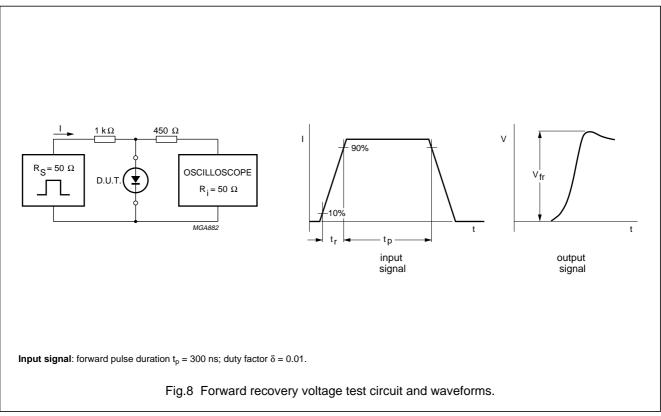
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BAV105



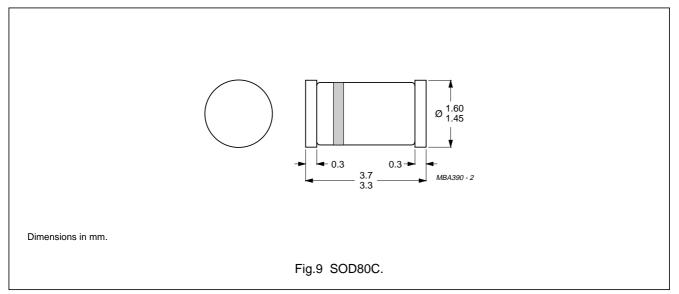
BAV105





BAV105

PACKAGE OUTLINE



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	
more of the limiting values of the device at these or at	accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or may cause permanent damage to the device. These are stress ratings only and operation any other conditions above those given in the Characteristics sections of the specification limiting values for extended periods may affect device reliability.
Application information	

LIFE SUPPORT APPLICATIONS

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.