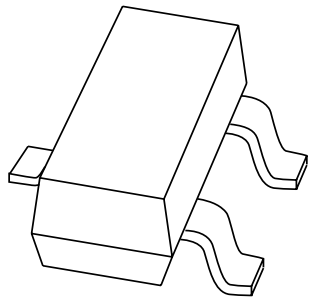


DATA SHEET



BAS16 High-speed diode

Product specification
Supersedes data of 1999 May 26

2001 Oct 10

High-speed diode

BAS16

FEATURES

- 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 hybrid thick and thin-film circuits.

DESCRIPTION

The BAS16 is a high-speed switching diode fabricated in planar technology, and encapsulated in a small SOT23 plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BAS16	A6*

Note

- * = p : Made in Hong Kong.
* = t : Made in Malaysia.
* = W : Made in China.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

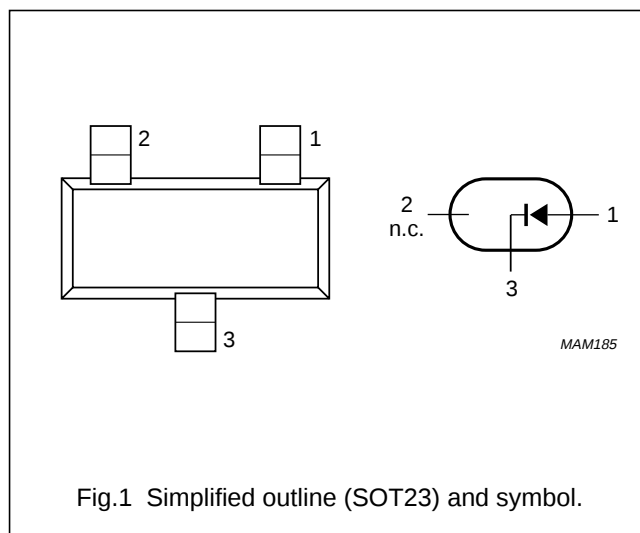
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage		–	85	V
V_R	continuous reverse voltage		–	75	V
I_F	continuous forward current	see Fig.2; note 1	–	215	mA
I_{FRM}	repetitive peak forward current		–	500	mA
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\text{ }\mu\text{s}$ $t = 1\text{ ms}$ $t = 1\text{ s}$	– – –	4 1 0.5	A A A
P_{tot}	total power dissipation	$T_{amb} = 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

Note

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

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode



High-speed diode

BAS16

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 50\text{ mA}$ $I_F = 150\text{ mA}$	715 855 1 1.25	mV mV 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 1 30 50	nA μA μA μA
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.6	1.5	pF
t_{rr}	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; measured at $I_R = 1\text{ mA}$; see Fig.7	4	ns
V_{fr}	forward recovery voltage	when switched from $I_F = 10\text{ mA}$; $t_r = 20\text{ ns}$; see Fig.8	1.75	V

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		330	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

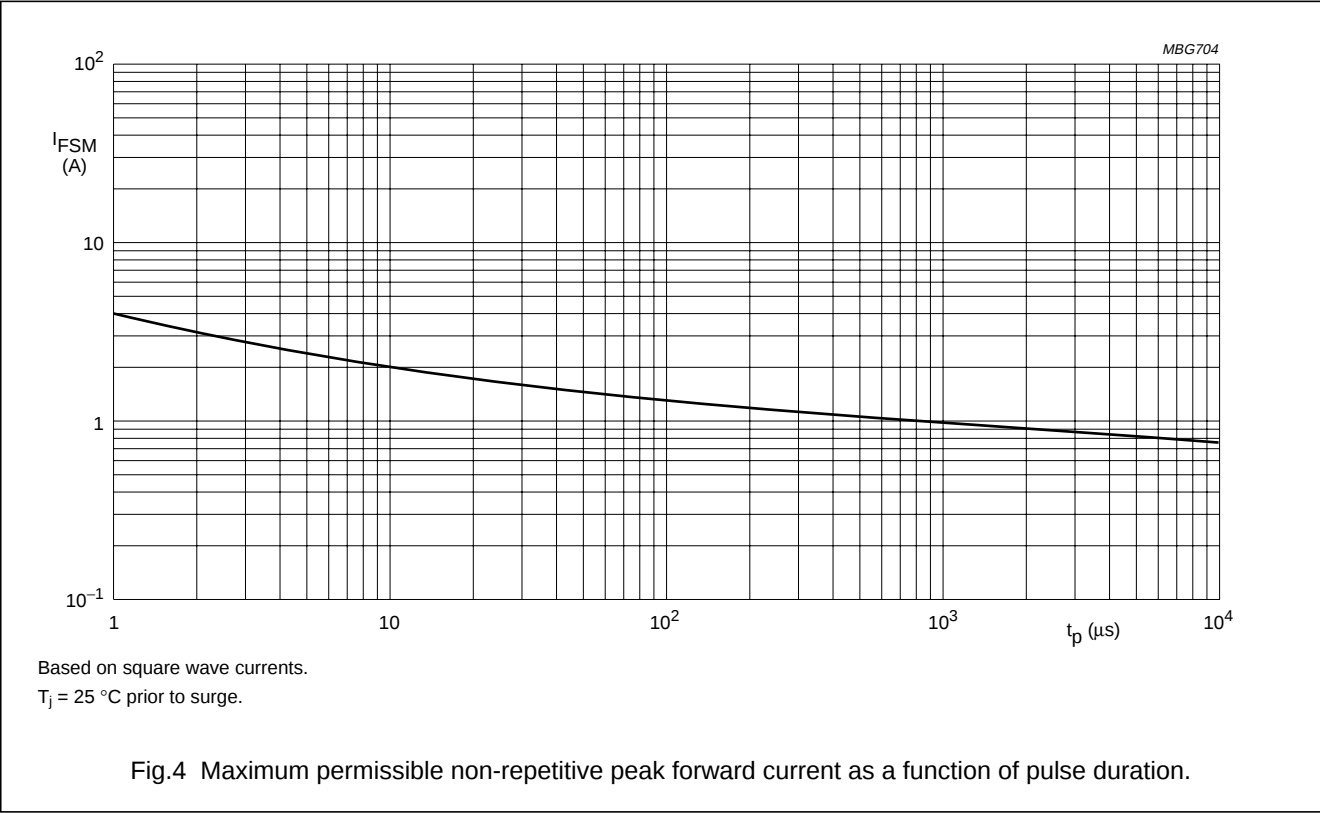
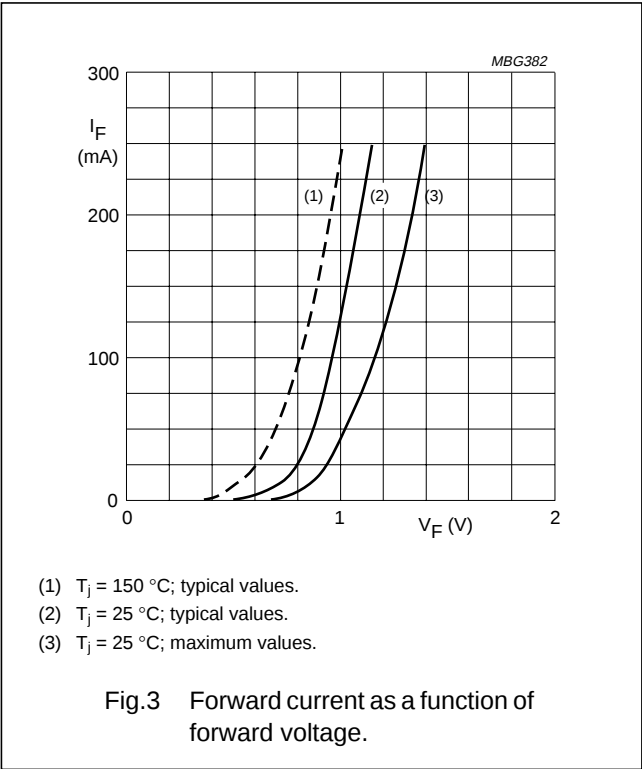
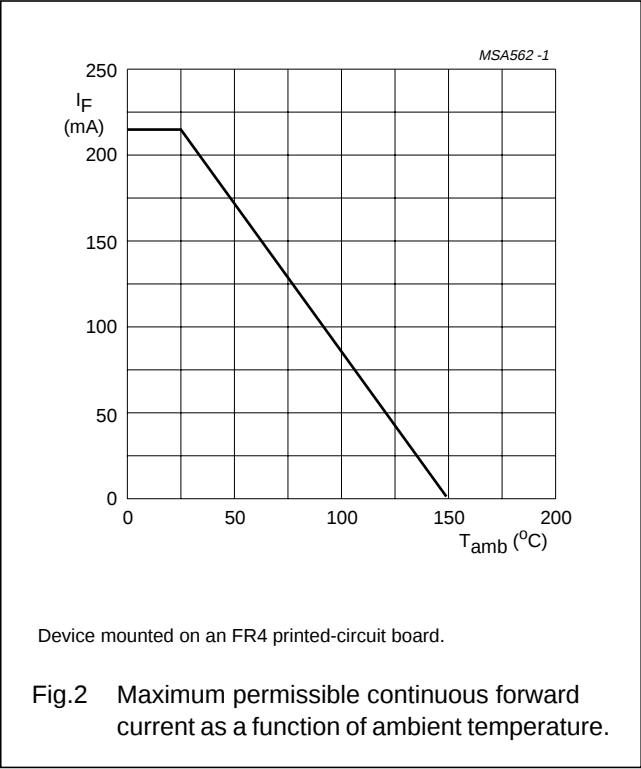
Note

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

High-speed diode

BAS16

GRAPHICAL DATA



High-speed diode

BAS16

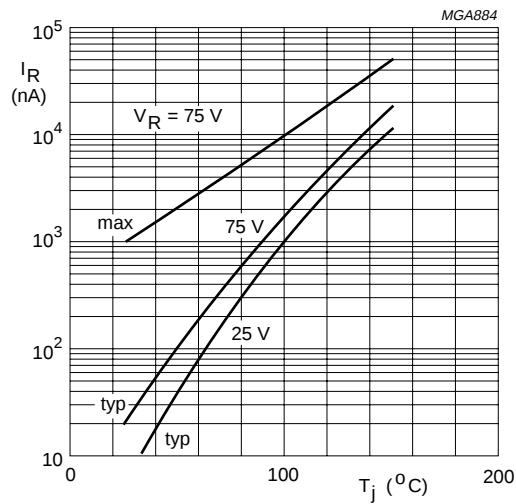
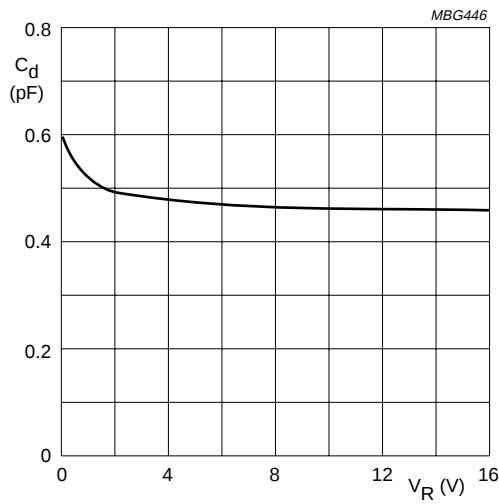


Fig.5 Reverse current as a function of junction temperature.

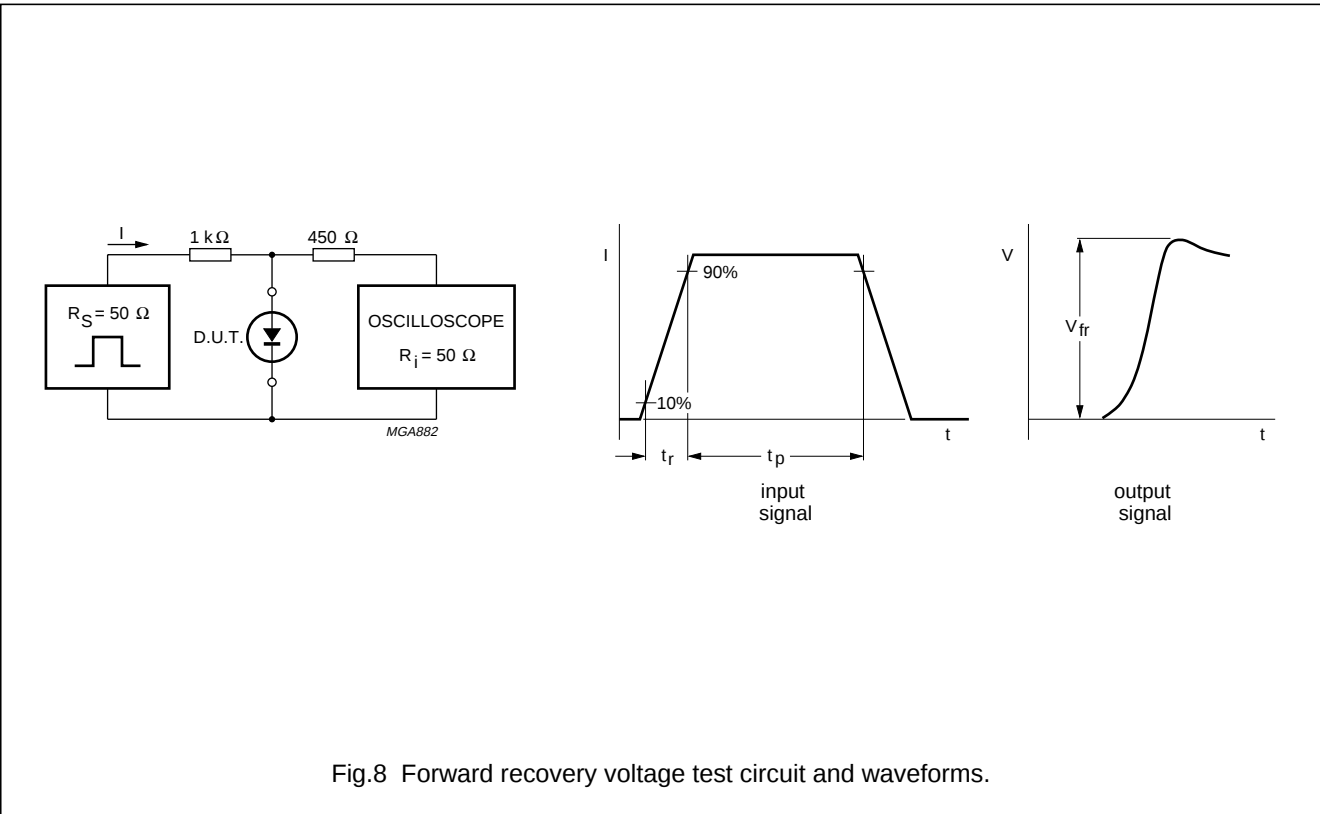
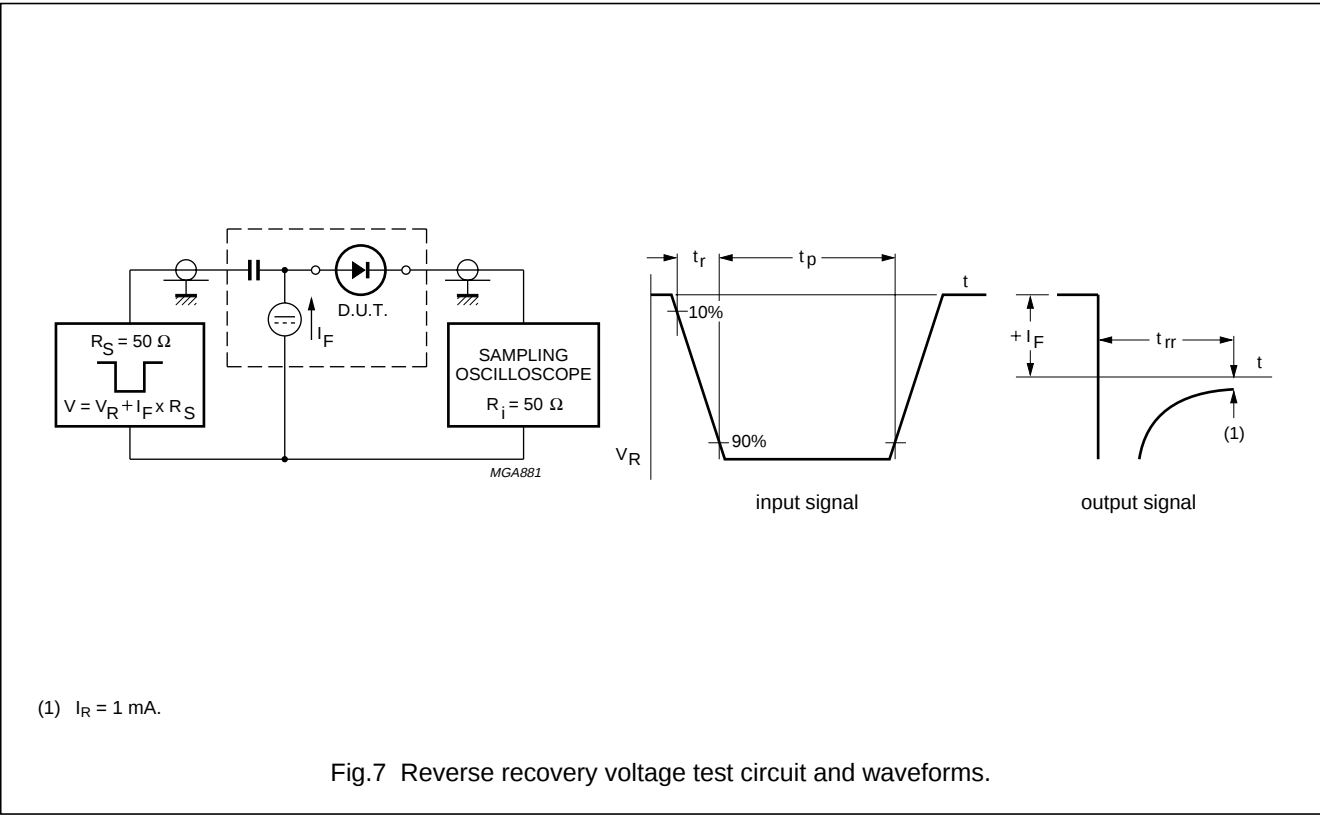


$f = 1\text{ MHz}$; $T_j = 25\text{ }^{\circ}\text{C}$.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

High-speed diode

BAS16



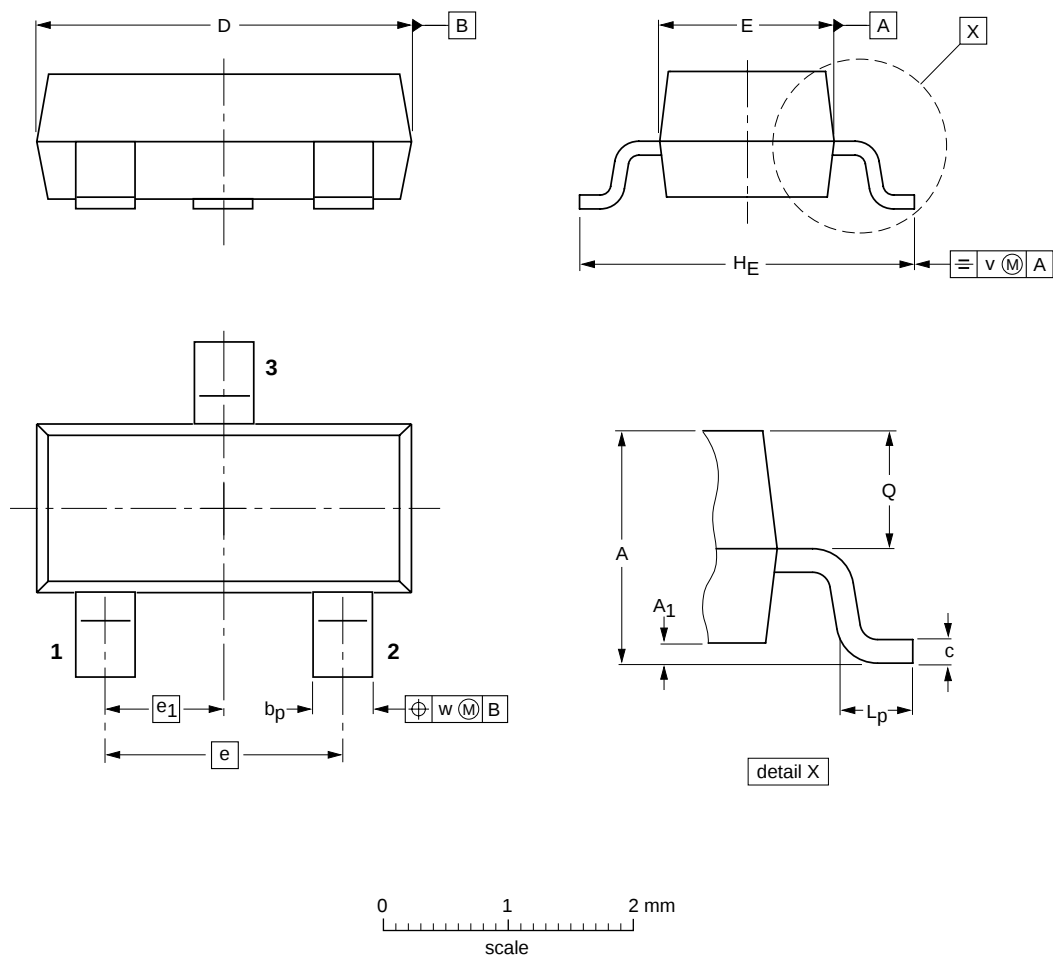
High-speed diode

BAS16

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23		TO-236AB				97-02-28 99-09-13

High-speed diode

BAS16

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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High-speed diode

BAS16

NOTES

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NOTES

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