

## Important notice

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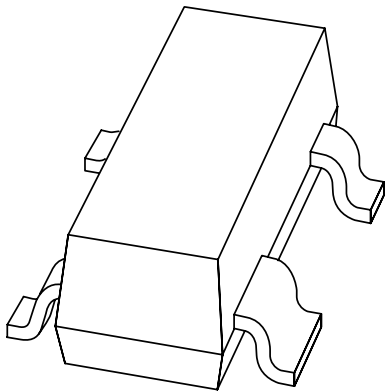
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **[salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



**BAW101**

High voltage double diode

Product data sheet

2003 May 13

High voltage double diode

BAW101

FEATURES

- Small plastic SMD package
- High switching speed: max. 50 ns
- High continuous reverse voltage: 300 V
- Electrically insulated diodes.

APPLICATIONS

- High voltage switching
- Automotive
- Communication.

DESCRIPTION

The BAW101 is a high-speed switching diode array with two separate dice, fabricated in planar technology and encapsulated in a small SOT143B plastic SMD package.

MARKING

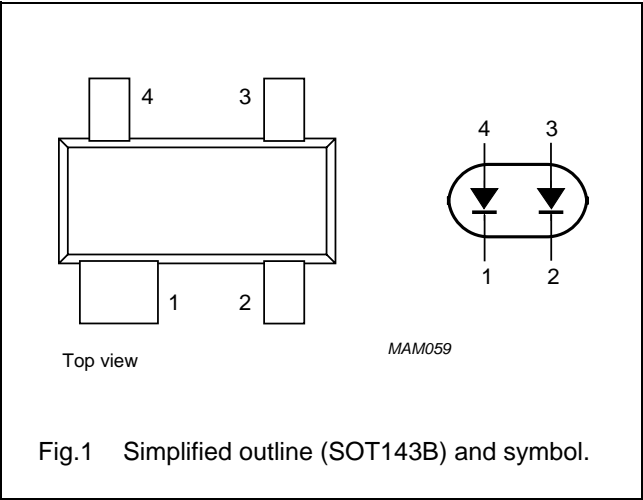
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BAW101	*AB

Note

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

PINNING

PIN	DESCRIPTION
1	cathode 1
2	cathode 2
3	anode 2
4	anode 1



## High voltage double diode

BAW101

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_R$	continuous reverse voltage		–	300	V
		series connection	–	600	V
$V_{RRM}$	repetitive peak reverse voltage		–	300	V
		series connection	–	600	V
$I_F$	continuous forward current	single diode loaded; note 1; see Fig.2	–	250	mA
		double diode loaded; note 1; see Fig.2	–	140	mA
$I_{FRM}$	repetitive peak forward current		–	625	mA
$I_{FSM}$	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; $t = 1\text{ }\mu\text{s}$	–	4.5	A
$P_{tot}$	total power dissipation	$T_{amb} = 25\text{ °C}$ ; note 1	–	350	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**Note**

1. Device mounted on an FR4 printed-circuit board, cathode-lead mounting pad = 1 cm<sup>2</sup>.

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per diode</b>					
$V_{BR(R)}$	reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	300	–	V
$V_F$	forward voltage	$I_F = 100\text{ mA}$ ; note 1	–	1.1	V
$I_R$	reverse current	$V_R = 250\text{ V}$	–	150	nA
		$V_R = 250\text{ V}$ ; $T_{amb} = 150\text{ °C}$	–	50	$\mu\text{A}$
$t_{rr}$	reverse recovery time	when switched from $I_F = 30\text{ mA}$ to $I_R = 30\text{ mA}$ ; $R_L = 100\text{ }\Omega$ ; measured at $I_R = 3\text{ mA}$	–	50	ns
$C_d$	diode capacitance	$V_R = 0\text{ V}$ ; $f = 1\text{ MHz}$	–	2	pF

**Note**

1. Pulse test: pulse width = 300  $\mu\text{s}$ ;  $\delta = 0.02$ .

High voltage double diode

BAW101

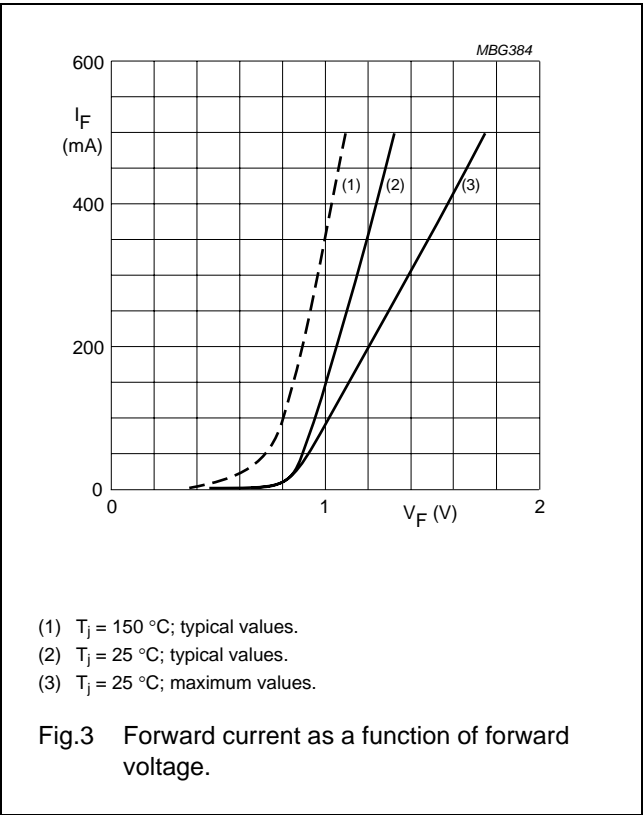
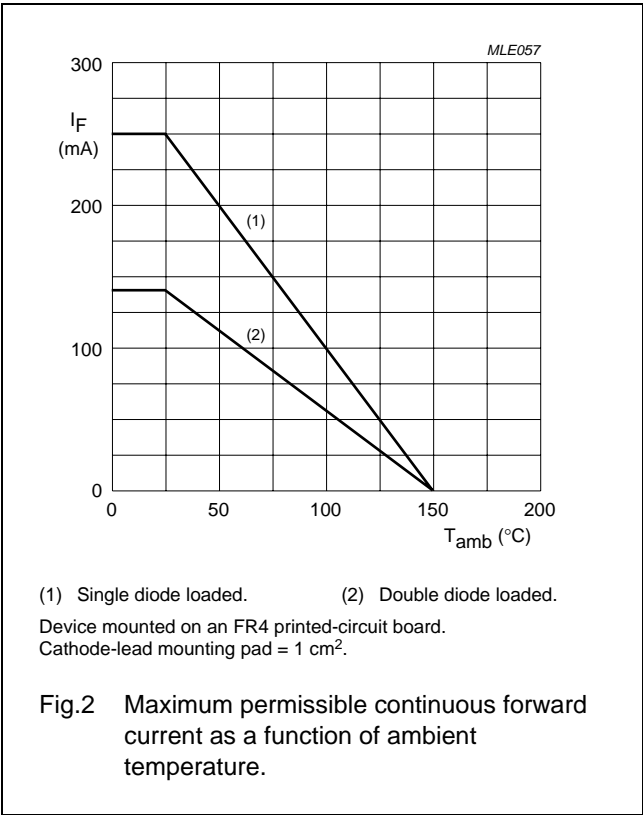
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	note 1	255	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 2	357	K/W

Notes

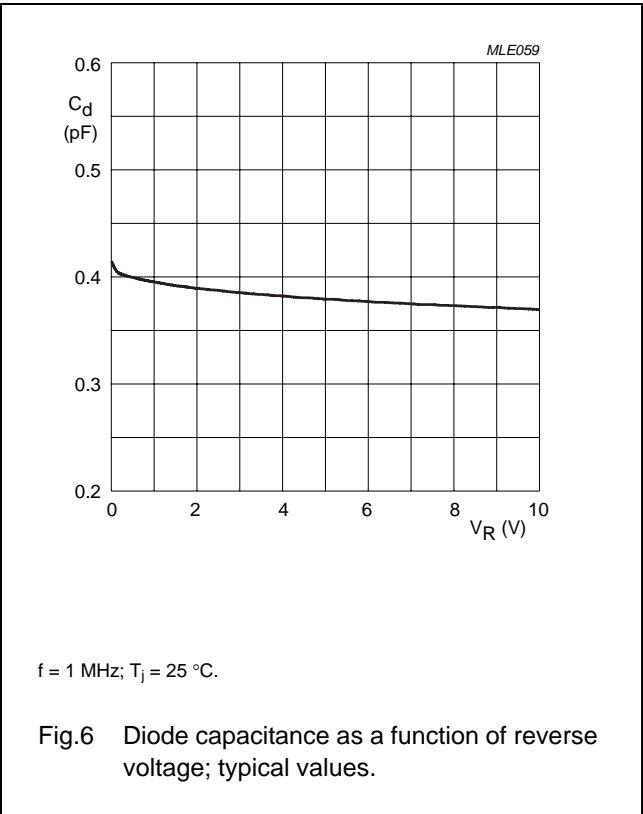
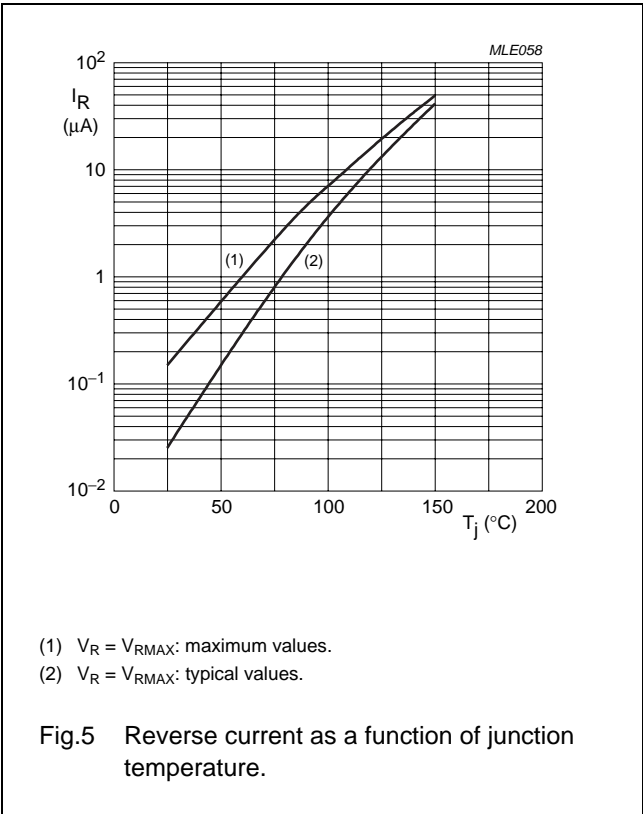
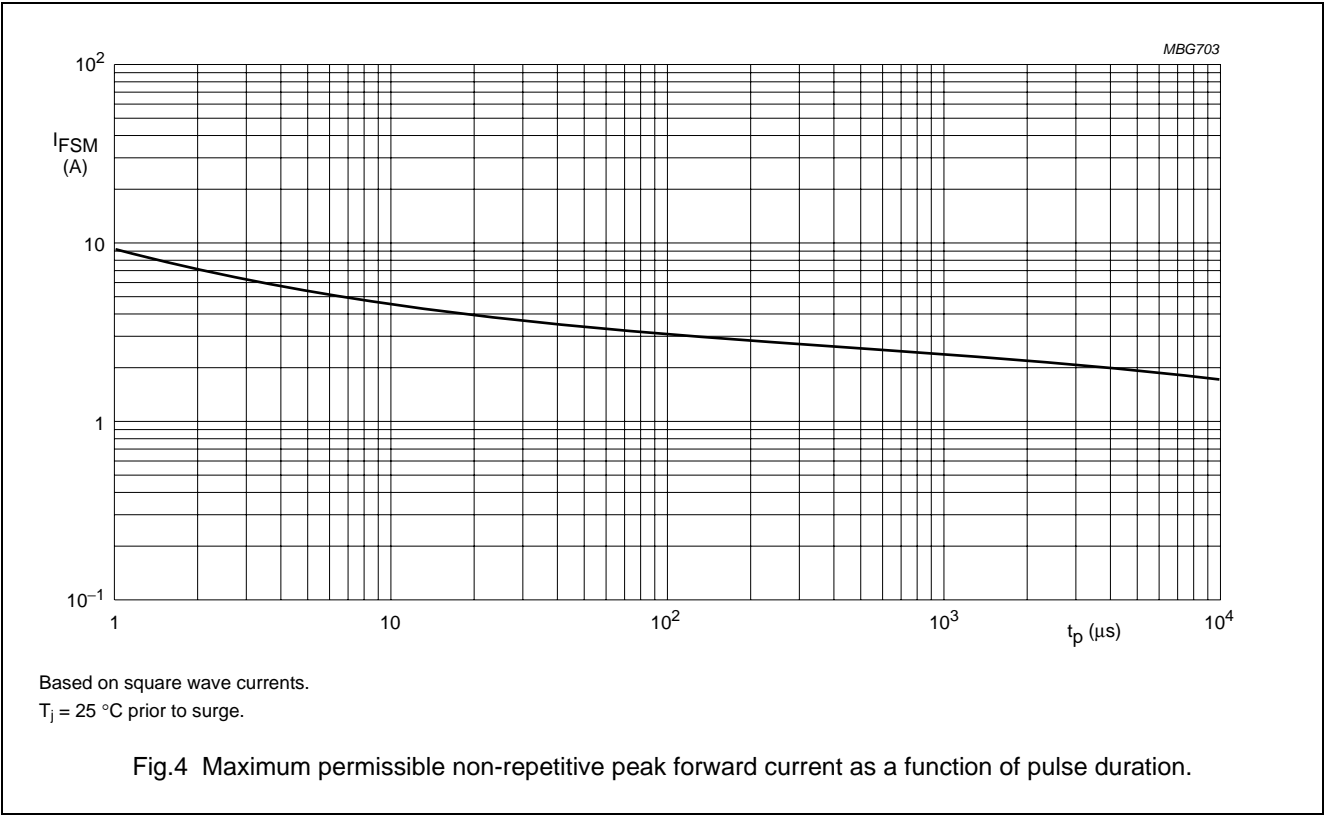
1. One or more diodes loaded.
2. Device mounted on an FR4 printed-circuit board, cathode-lead mounting pad = 1 cm<sup>2</sup>.

GRAPHICAL DATA



High voltage double diode

BAW101



## High voltage double diode

BAW101

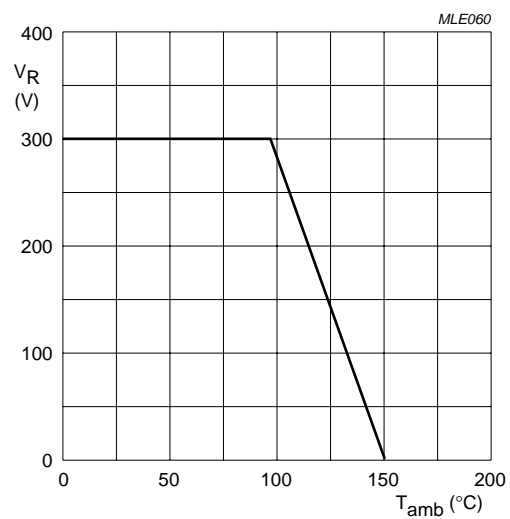


Fig.7 Maximum permissible continuous reverse voltage as a function of ambient temperature.

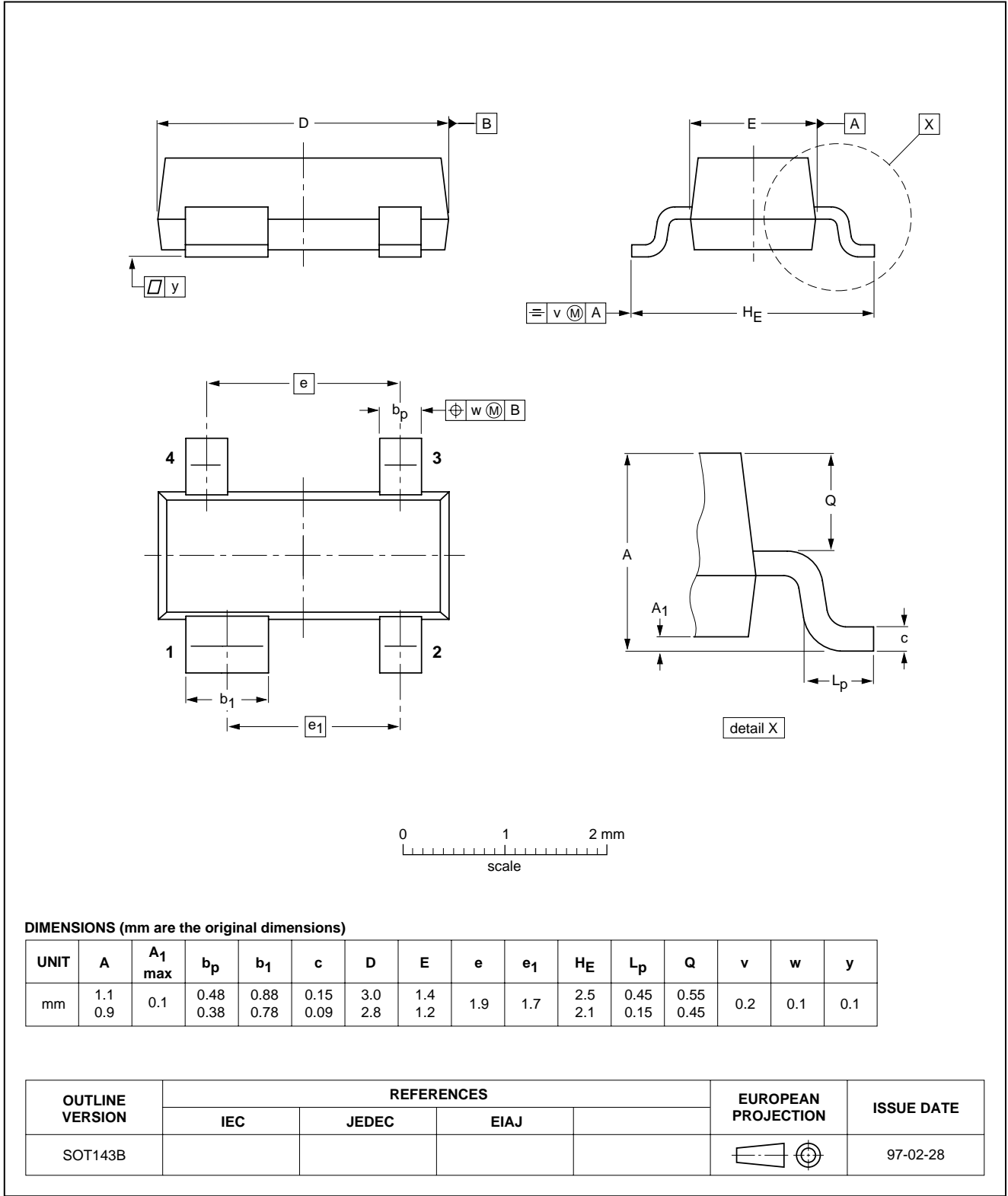
High voltage double diode

BAW101

PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

SOT143B





## High voltage double diode

BAW101

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

For additional information please visit: **<http://www.nxp.com>**

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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