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Kind regards,

Team Nexperia

DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of 1999 May 26 2003 Dec 17



Product data sheet

High-speed diode

BAL74

FEATURES

- Small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 50 V
- Repetitive peak reverse voltage: max. 50 V
- Repetitive peak forward current: max. 500 mA.

APPLICATIONS

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

DESCRIPTION

The BAL74 is a high-speed switching diode fabricated in planar technology, and encapsulated in the small SOT23 plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BAL74	JC*

Note

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

ORDERING INFORMATION

TYPE NUMBER		PACKAGE		
ITPE NUMBER	NAME	DESCRIPTION	VERSION	
BAL74	-	plastic surface mounted package; 3 leads	SOT23	

PINNING

PIN	DESCRIPTION
1	not connected
2	anode
3	cathode

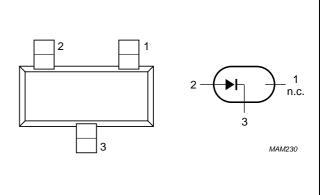


Fig.1 Simplified outline (SOT23) and symbol.

BAL74

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage		-	50	V
V _R	continuous reverse voltage		-	50	V
l _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 °C prior to surge; see Fig.4			
		$t_p = 1 \ \mu s$	-	4	А
		t _p = 1 ms	-	1	А
		$t_p = 1 s$	-	0.5	А
P _{tot}	total power dissipation	T _{amb} = 25 °C; note 1	-	250	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		-	150	°C

Note

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

ELECTRICAL CHARACTERISTICS

 T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V _F	forward voltage	see Fig.3		
		I _F = 1 mA	715	mV
		I _F = 10 mA	855	mV
		I _F = 50 mA	1	V
		I _F = 150 mA	1.25	V
I _R	reverse current	see Fig.5		
		V _R = 50 V	0.1	μA
		V _R = 50 V; T _j = 150 °C	100	μA
C _d	diode capacitance	$f = 1 \text{ MHz}; V_R = 0; \text{ see Fig.6}$	2	pF
t _{rr}	reverse recovery time	when switched from $I_F = 10 \text{ mA}$ to $I_R = 10 \text{ mA}$;	4	ns
		R_L = 100 Ω ; measured at I_R = 1 mA; see Fig.7		
V _{fr}	forward recovery voltage	when switched from $I_F = 10$ mA; $t_r = 20$ ns; see Fig.8	1.75	V

THERMAL CHARACTERISTICS

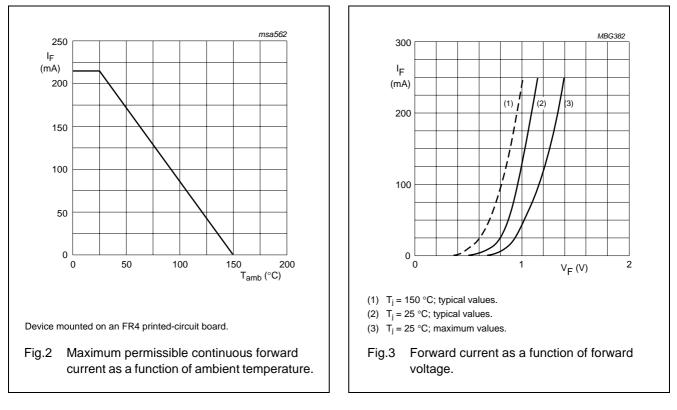
SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th(j-tp)}	thermal resistance from junction to tie-point		330	K/W
R _{th(j-a)}	thermal resistance from junction to ambient	note 1	500	K/W

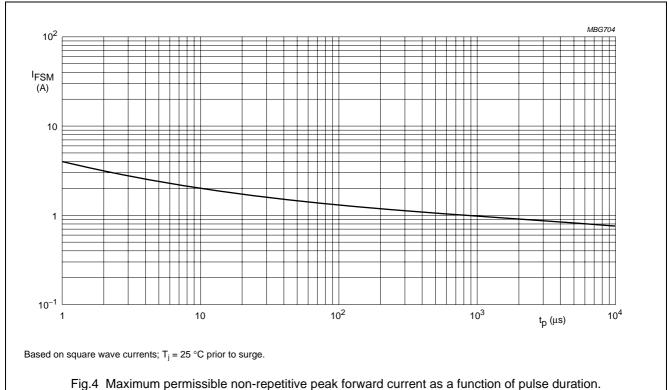
Note

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

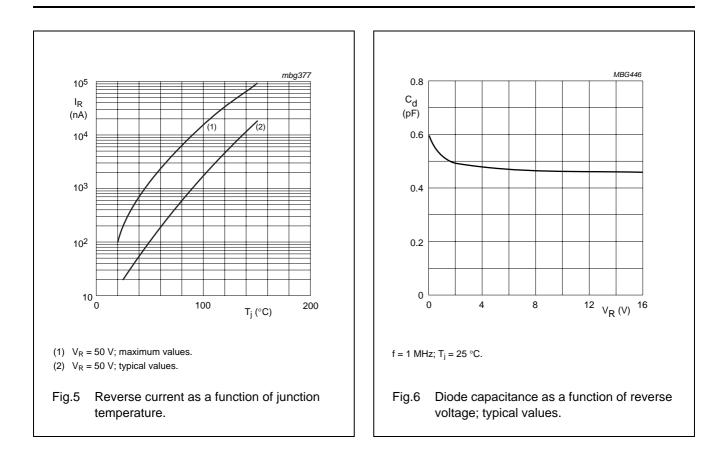
BAL74



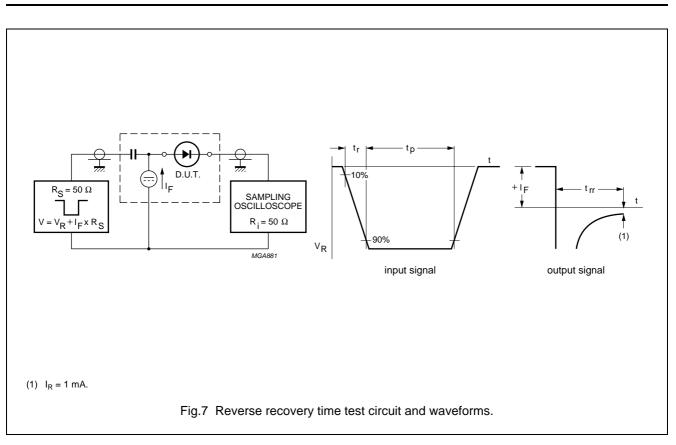


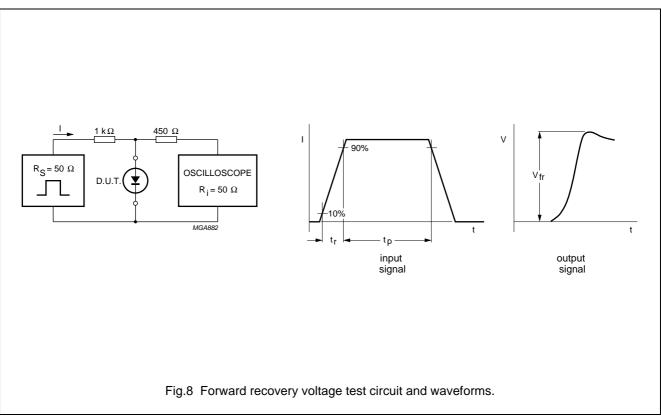


BAL74



BAL74



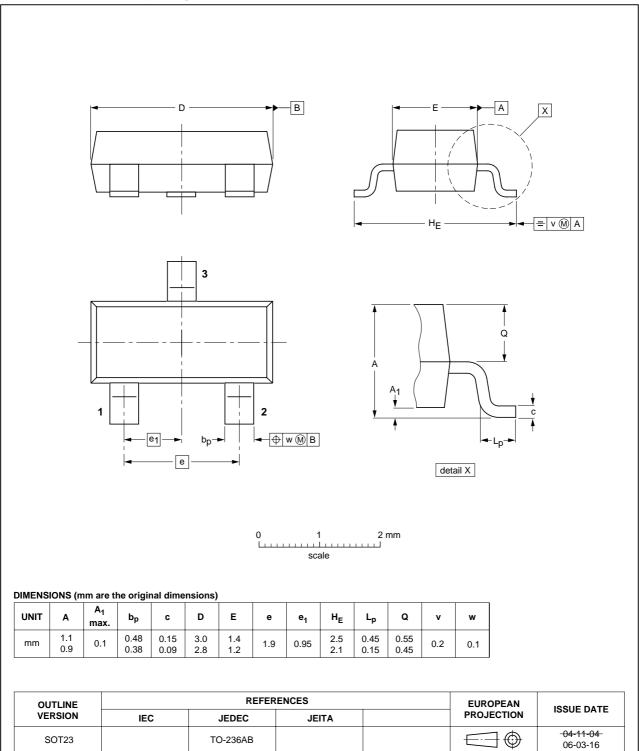


BAL74

SOT23

PACKAGE OUTLINE





BAL74

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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.

Notes

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NXP Semiconductors

Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

For additional information please visit: http://www.nxp.com For sales offices addresses send e-mail to: salesaddresses@nxp.com

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Printed in The Netherlands

R76/04/pp9

Date of release: 2003 Dec 17

Document order number: 9397 750 12388

