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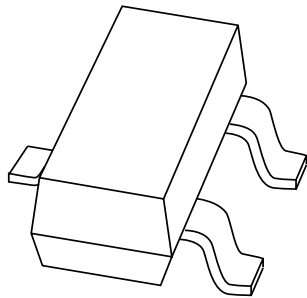
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Kind regards,

Team Nexperia

DATA SHEET



BAV74

High-speed double diode

Product data sheet
Supersedes data of 1999 May 11

2004 Jan 14

High-speed double diode

BAV74

FEATURES

- Small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 50 V
- Repetitive peak reverse voltage: max. 60 V
- Repetitive peak forward current: max. 450 mA.

APPLICATIONS

- High-speed switching in thick and thin-film circuits.

DESCRIPTION

The BAV74 consists of two high-speed switching diodes with common cathodes, fabricated in planar technology, and encapsulated in a small SOT23 plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BAV74	JA*

Note

1. * = 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).

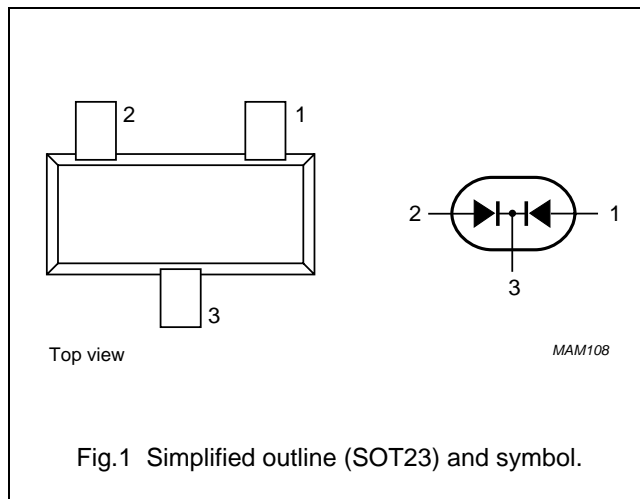
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V _{RRM}	repetitive peak reverse voltage		–	60	V
V _R	continuous reverse voltage		–	50	V
I _F	continuous forward current	single diode loaded; note 1; see Fig.2	–	215	mA
		double diode loaded; note 1; see Fig.2	–	125	mA
I _{FRM}	repetitive peak forward current		–	450	mA
I _{FSM}	non-repetitive peak forward current	square wave; T _j = 25 °C prior to surge; see Fig.4			
		t = 1 μs	–	4	A
		t = 1 ms	–	1	A
		t = 1 s	–	0.5	A
P _{tot}	total power dissipation	T _{amb} = 25 °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 (a1)
2	anode (a2)
3	cathode



High-speed double diode

BAV74

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BAV74	–	plastic surface mounted package; 3 leads	SOT23

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	forward voltage	see Fig.3 $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 100\text{ mA}$	715 855 1.0	mV mV V
I_R	reverse current	see Fig.5 $V_R = 25\text{ V}$ $V_R = 50\text{ V}$ $V_R = 25\text{ V}; T_j = 150\text{ °C}$ $V_R = 50\text{ V}; T_j = 150\text{ °C}$	30 0.1 30 100	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 $I_R = 10\text{ mA}$; $R_L = 100\ \Omega$; 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		360	K/W
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	500	K/W

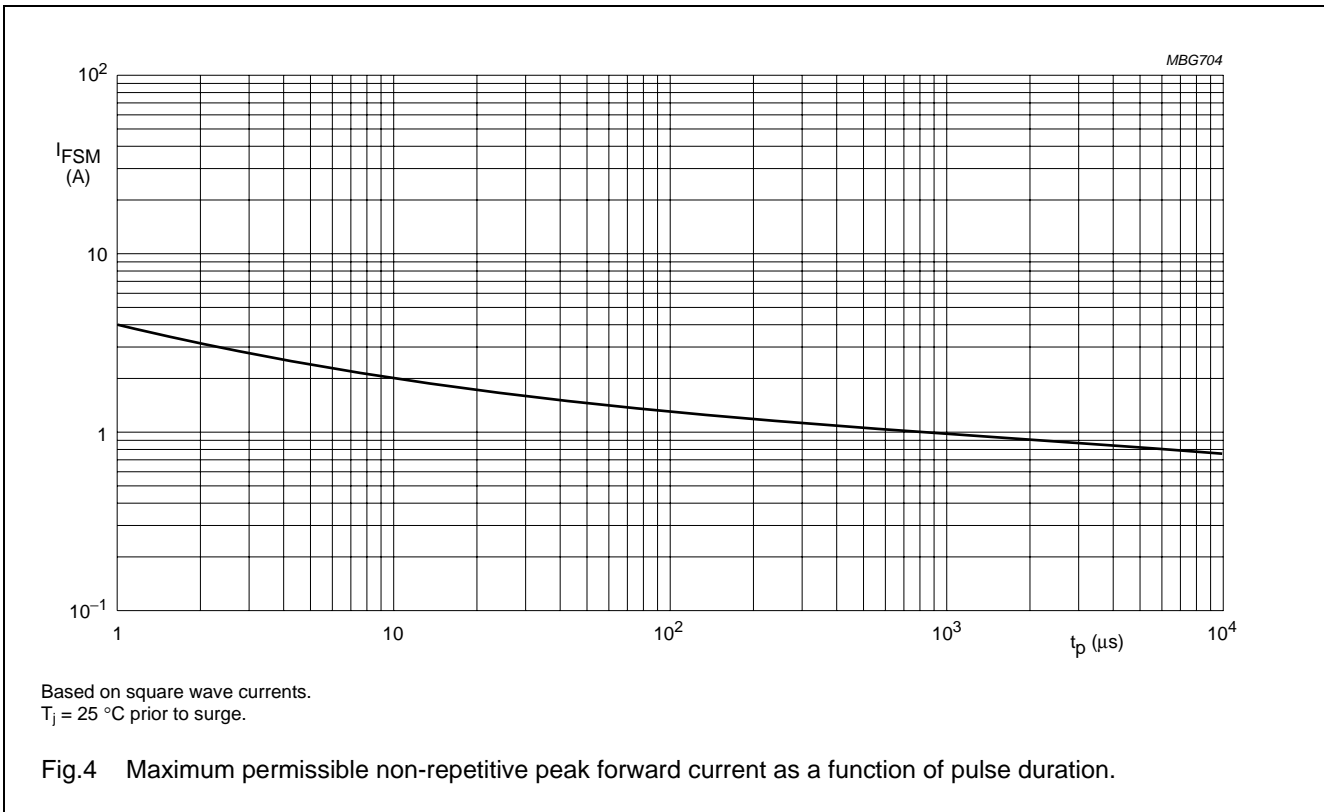
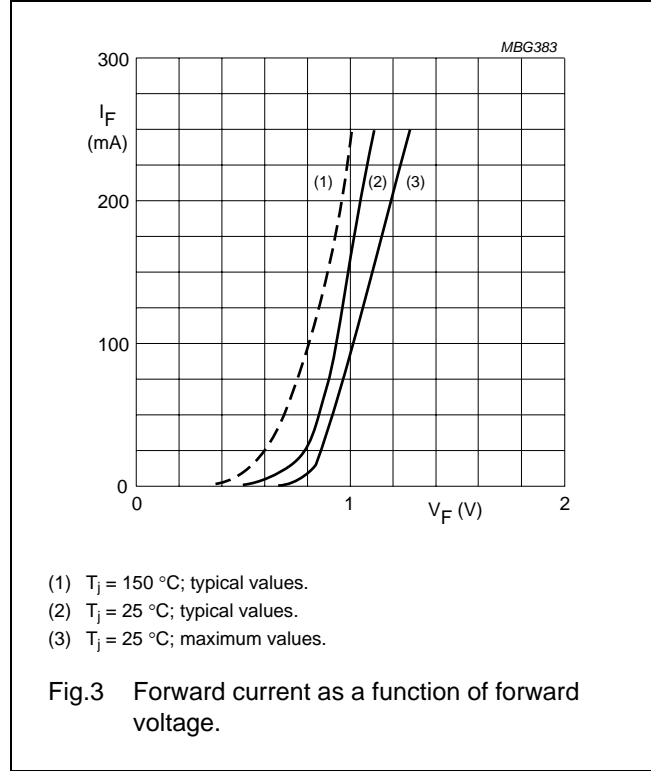
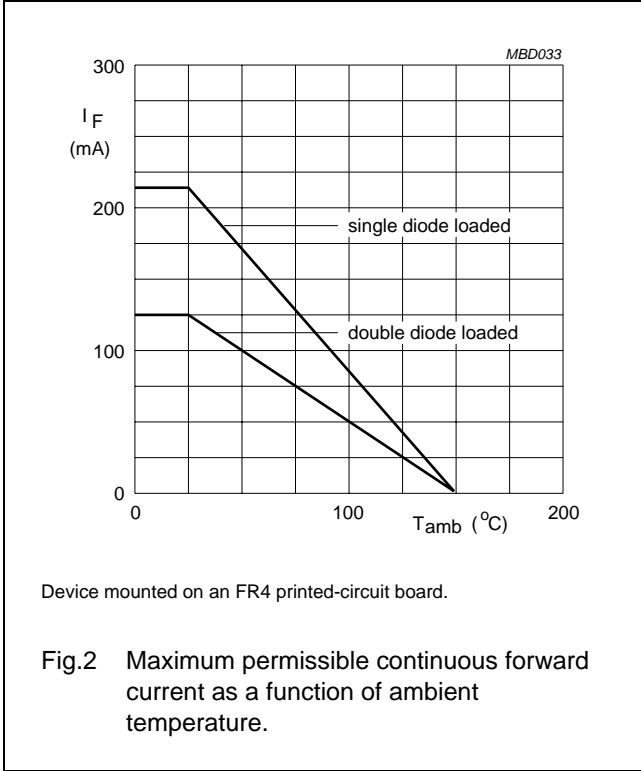
Note

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

High-speed double diode

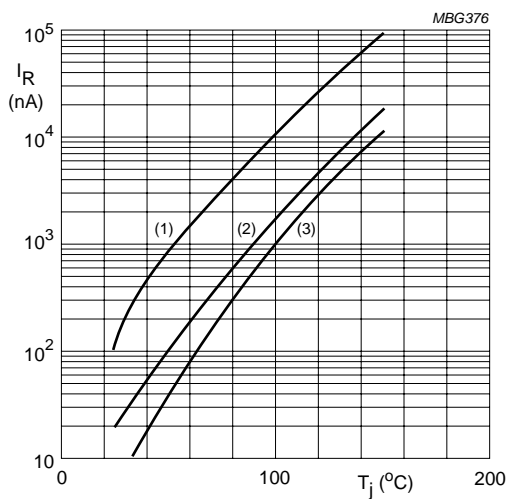
BAV74

GRAPHICAL DATA



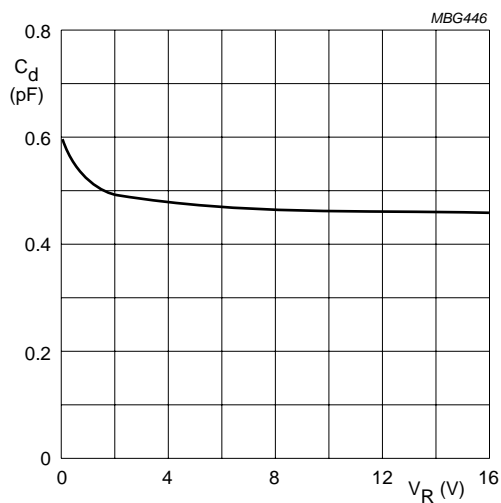
High-speed double diode

BAV74



- (1) $V_R = 50\text{ V}$; maximum values.
- (2) $V_R = 50\text{ V}$; typical values.
- (3) $V_R = 25\text{ V}$; typical values.

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

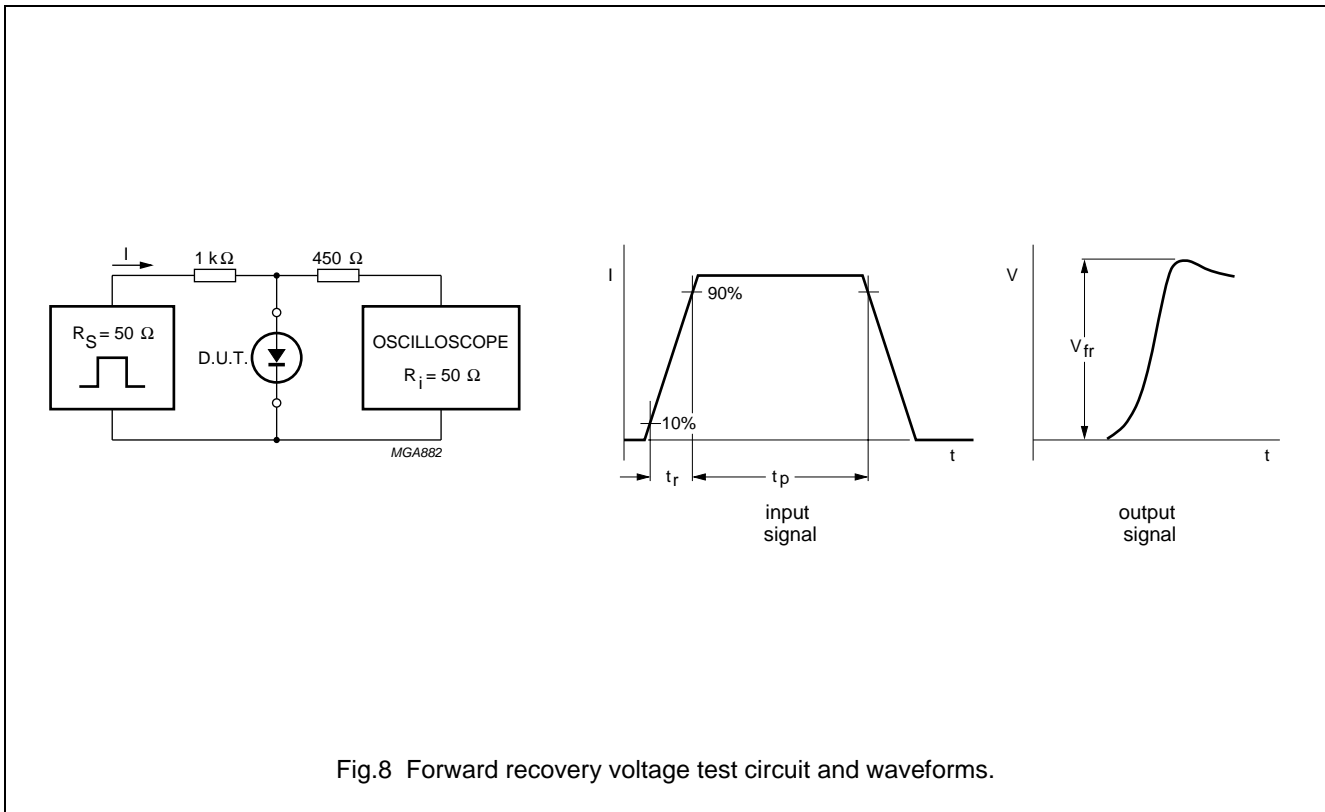
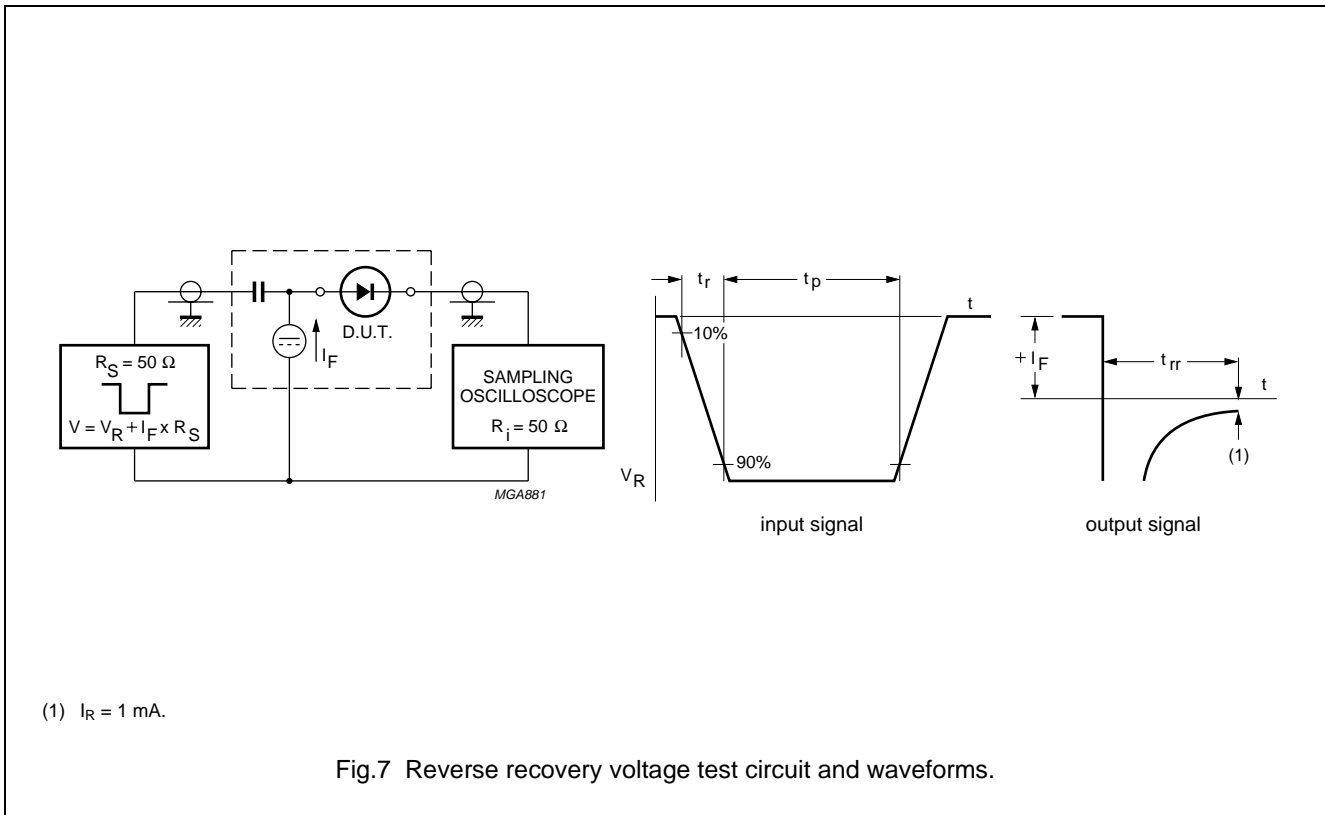


$f = 1\text{ MHz}$; $T_j = 25\text{ °C}$.

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

High-speed double diode

BAV74



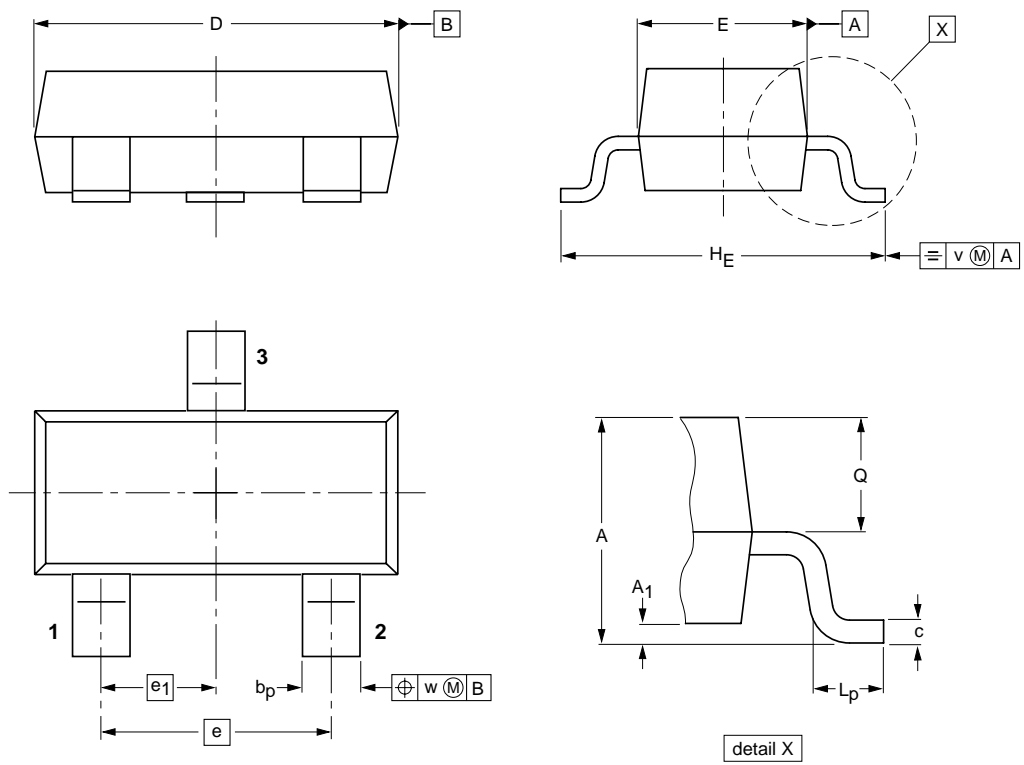
High-speed double diode

BAV74

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	JEITA			
SOT23		TO-236AB				04-11-04 06-03-16

High-speed double diode

BAV74

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.

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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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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

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