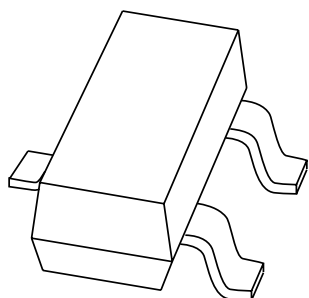


DATA SHEET



PMBZ5226B to PMBZ5257B Voltage regulator diodes

Product specification
Supersedes data of 1996 Apr 26

1999 May 17

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

FEATURES

- Total power dissipation:
max. 250 mW
- Tolerance series: $\pm 5\%$
- Working voltage range:
nom. 3.3 to 75 V
- Non-repetitive peak reverse power
dissipation: max. 40 W.

APPLICATIONS

- General regulation functions.

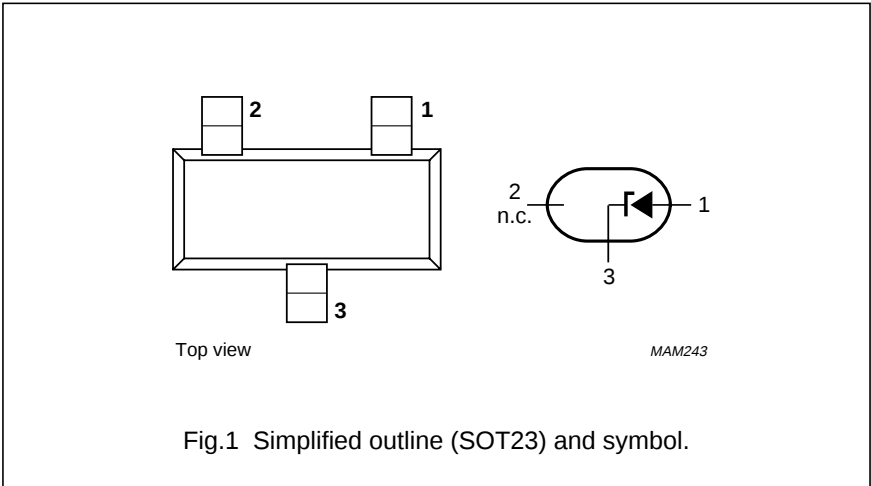
DESCRIPTION

Low-power voltage regulator diodes
in small SOT23 plastic SMD
packages.

The series consists of 32 types with
nominal working voltages from
3.3 to 75 V.

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode



MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾	TYPE NUMBER	MARKING CODE ⁽¹⁾	TYPE NUMBER	MARKING CODE ⁽¹⁾	TYPE NUMBER	MARKING CODE
PMBZ5226B	*8A	PMBZ5234B	*8J	PMBZ5242B	*8S	PMBZ5250B	81A
PMBZ5227B	*8B	PMBZ5235B	*8K	PMBZ5243B	*8T	PMBZ5251B	81B
PMBZ5228B	*8C	PMBZ5236B	*8L	PMBZ5244B	*8U	PMBZ5252B	81C
PMBZ5229B	*8D	PMBZ5237B	*8M	PMBZ5245B	*8V	PMBZ5253B	81D
PMBZ5230B	*8E	PMBZ5238B	*8N	PMBZ5246B	*8W	PMBZ5254B	81E
PMBZ5231B	*8F	PMBZ5239B	*8P	PMBZ5247B	*8X	PMBZ5255B	81F
PMBZ5232B	*8G	PMBZ5240B	*8Q	PMBZ5248B	*8Y	PMBZ5256B	81G
PMBZ5233B	*8H	PMBZ5241B	*8R	PMBZ5249B	*8Z	PMBZ5257B	81H

Note

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

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_F	continuous forward current		—	200	mA
I_{ZSM}	non-repetitive peak reverse current	$t_p = 100 \mu s$; square wave; $T_j = 25^\circ C$ prior to surge	see Table "Per type"		
P_{tot}	total power dissipation	$T_{amb} = 25^\circ C$; note 1	—	300	mW
		$T_{amb} = 25^\circ C$; note 2	—	250	mW
P_{ZSM}	non-repetitive peak reverse power dissipation	$t_p = 100 \mu s$; square wave; $T_j = 25^\circ C$ prior to surge; see Fig.2	—	40	W
T_{stg}	storage temperature		−65	+150	$^\circ C$
T_j	junction temperature		—	150	$^\circ C$

Notes

1. Device mounted on a ceramic substrate of $8 \times 10 \times 0.7$ mm.
2. Device mounted on an FR4 printed circuit-board.

ELECTRICAL CHARACTERISTICS**Total series**

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

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	$I_F = 200$ mA; see Fig.3	1.1	V

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

Per type

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

TYPE No.	WORKING VOLTAGE V_Z (V) ⁽¹⁾ at $I_{Z\text{test}}$	DIFFERENTIAL RESISTANCE r_{dif} (Ω) at $I_Z = 0.25\text{ mA}$	TEMP. COEFF. S_Z (%/K) at I_Z ⁽²⁾	TEST CURRENT $I_{Z\text{test}}$ (mA)	DIODE CAP. C_d (pF) at $f = 1\text{ MHz}$; at $V_R = 0\text{ V}$	REVERSE CURRENT at REVERSE VOLTAGE		NON-REPETITIVE PEAK REVERSE CURRENT I_{ZSM} (A) at $t_p = 100\text{ }\mu\text{s}$; $T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$
	NOM.	MAX.	TYP.			I_R (μA)	V_R (V)	
					MAX.	MAX.		MAX.
PMBZ5226B	3.3	1600	-0.064	20	450	25	1.0	6.0
PMBZ5227B	3.6	1700	-0.065	20	450	15	1.0	6.0
PMBZ5228B	3.9	1900	-0.063	20	450	10	1.0	6.0
PMBZ5229B	4.3	2000	-0.058	20	450	5	1.0	6.0
PMBZ5230B	4.7	2000	-0.047	20	450	5	1.0	6.0
PMBZ5231B	5.1	2000	-0.013	20	300	5	2.0	6.0
PMBZ5232B	5.6	1600	+0.023	20	300	5	3.0	6.0
PMBZ5233B	6.0	1600	+0.023	20	300	5	3.5	6.0
PMBZ5234B	6.2	1000	+0.039	20	200	5	4.0	6.0
PMBZ5235B	6.8	750	+0.040	20	200	3	5.0	6.0
PMBZ5236B	7.5	500	+0.047	20	150	3	6.0	4.0
PMBZ5237B	8.2	500	+0.052	20	150	3	6.5	4.0
PMBZ5238B	8.7	600	+0.053	20	150	3	6.5	3.5
PMBZ5239B	9.1	600	+0.055	20	150	3	7.0	3.0
PMBZ5240B	10	600	+0.055	20	90	3	8.0	3.0
PMBZ5241B	11	600	+0.058	20	85	2	8.4	2.5
PMBZ5242B	12	600	+0.062	20	85	1	9.1	2.5
PMBZ5243B	13	600	+0.065	9.5	80	0.5	9.9	2.5
PMBZ5244B	14	600	+0.067	9.0	80	0.1	10	2.0
PMBZ5245B	15	600	+0.073	8.5	75	0.1	11	2.0
PMBZ5246B	16	600	+0.073	7.8	75	0.1	12	1.5
PMBZ5247B	17	600	+0.073	7.4	75	0.1	13	1.5
PMBZ5248B	18	600	+0.078	7.0	70	0.1	14	1.5
PMBZ5249B	19	600	+0.078	6.6	70	0.1	14	1.5
PMBZ5250B	20	600	+0.080	6.2	60	0.1	15	1.5
PMBZ5251B	22	600	+0.080	5.6	60	0.1	17	1.25

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

TYPE No.	WORKING VOLTAGE V_Z (V) ⁽¹⁾ at I_{Ztest}	DIFFERENTIAL RESISTANCE r_{dif} (Ω) at $I_Z = 0.25$ mA	TEMP. COEFF. S_Z (%/K) at I_Z ⁽²⁾	TEST CURRENT I_{Ztest} (mA)	DIODE CAP. C_d (pF) at $f = 1$ MHz; at $V_R = 0$ V	REVERSE CURRENT at REVERSE VOLTAGE		NON-REPETITIVE PEAK REVERSE CURRENT I_{ZSM} (A) at $t_p = 100$ μ s; $T_{amb} = 25$ °C
	NOM.	MAX.	TYP.			I_R (μ A)	V_R (V)	
PMBZ5252B	24	600	+0.081	5.2	55	0.1	18	1.25
PMBZ5253B	25	600	+0.082	5.0	55	0.1	19	1.25
PMBZ5254B	27	600	+0.085	4.6	50	0.1	21	1.0
PMBZ5255B	28	600	+0.085	4.5	50	0.1	21	1.0
PMBZ5256B	30	600	+0.085	4.2	50	0.1	23	1.0
PMBZ5257B	33	700	+0.085	3.8	45	0.1	25	0.9

Notes

- V_Z is measured with device at thermal equilibrium while mounted on a ceramic substrate of $8 \times 10 \times 0.7$ mm.
- For types PMBZ5226B to PMBZ5242B the I_Z current is 7.5 mA; for PMBZ5243B and higher $I_Z = I_{Ztest}$. S_Z values valid between 25 °C and 125 °C.

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

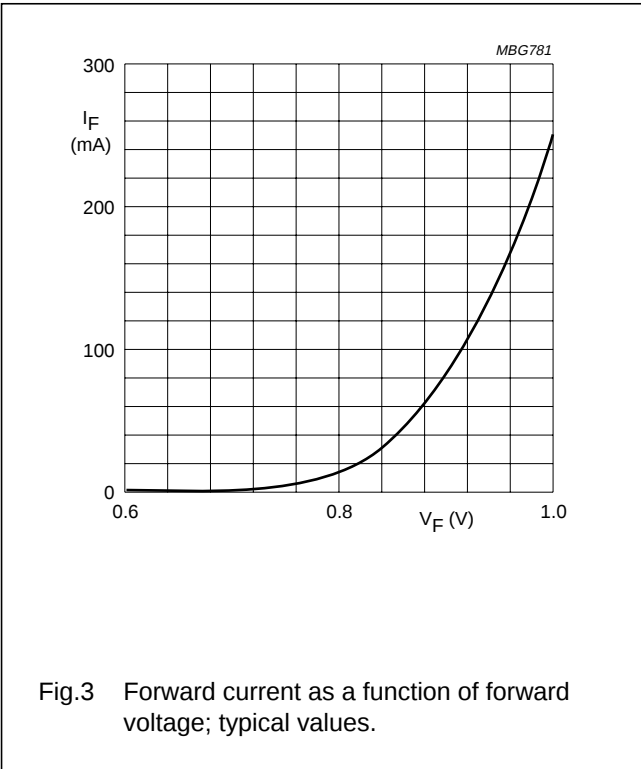
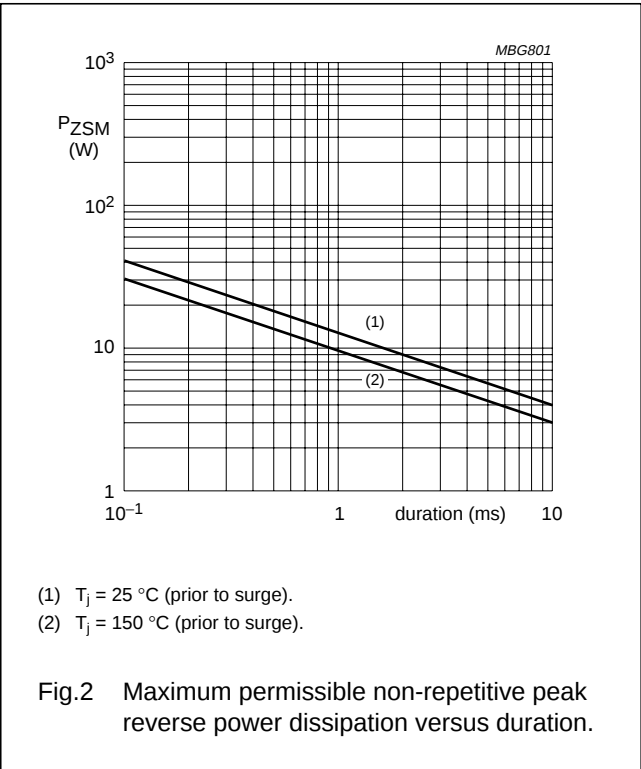
THERMAL CHARACTERISTICS

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 a printed-circuit board.

GRAPHICAL DATA



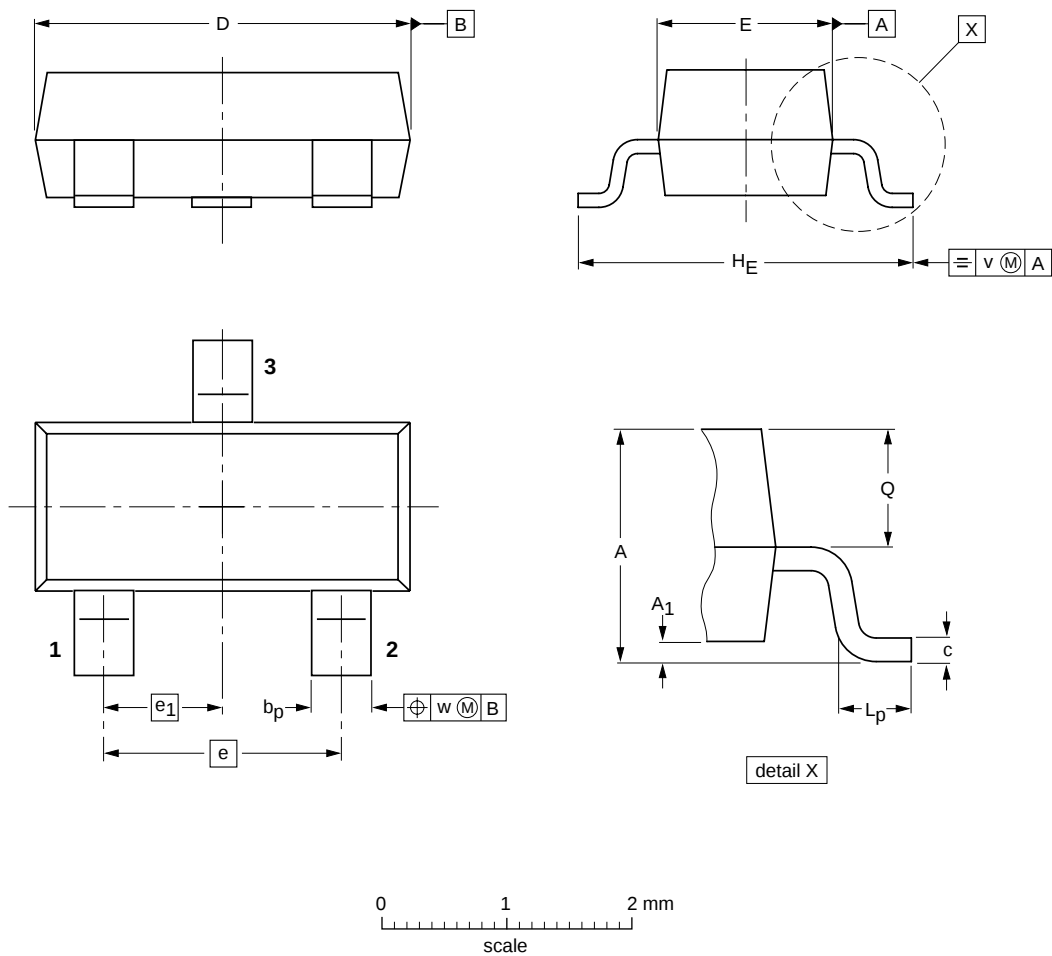
Voltage regulator diodes

PMBZ5226B to PMBZ5257B

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						97-02-28

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

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	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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Voltage regulator diodes

PMBZ5226B to PMBZ5257B

NOTES

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

NOTES

Voltage regulator diodes

PMBZ5226B to PMBZ5257B

NOTES

Philips Semiconductors – a worldwide company

Argentina: see South America

Australia: 34 Waterloo Road, NORTH RYDE, NSW 2113,
Tel. +61 2 9805 4455, Fax. +61 2 9805 4466

Austria: Computerstr. 6, A-1101 WIEN, P.O. Box 213,
Tel. +43 1 60 101 1248, Fax. +43 1 60 101 1210

Belarus: Hotel Minsk Business Center, Bld. 3, r. 1211, Volodarski Str. 6,
220050 MINSK, Tel. +375 172 20 0733, Fax. +375 172 20 0773

Belgium: see The Netherlands

Brazil: see South America

Bulgaria: Philips Bulgaria Ltd., Energoproject, 15th floor,
51 James Bourchier Blvd., 1407 SOFIA,
Tel. +359 2 68 9211, Fax. +359 2 68 9102

Canada: PHILIPS SEMICONDUCTORS/COMPONENTS,
Tel. +1 800 234 7381, Fax. +1 800 943 0087

China/Hong Kong: 501 Hong Kong Industrial Technology Centre,
72 Tat Chee Avenue, Kowloon Tong, HONG KONG,
Tel. +852 2319 7888, Fax. +852 2319 7700

Colombia: see South America

Czech Republic: see Austria

Denmark: Sydhavnsgade 23, 1780 COPENHAGEN V,
Tel. +45 33 29 3333, Fax. +45 33 29 3905

Finland: Sinikalliontie 3, FIN-02630 ESPOO,
Tel. +358 9 615 800, Fax. +358 9 6158 0920

France: 51 Rue Carnot, BP317, 92156 SURESNES Cedex,
Tel. +33 1 4099 6161, Fax. +33 1 4099 6427

Germany: Hammerbrookstraße 69, D-20097 HAMBURG,
Tel. +49 40 2353 60, Fax. +49 40 2353 6300

Hungary: see Austria

India: Philips INDIA Ltd, Band Box Building, 2nd floor,
254-D, Dr. Annie Besant Road, Worli, MUMBAI 400 025,
Tel. +91 22 493 8541, Fax. +91 22 493 0966

Indonesia: PT Philips Development Corporation, Semiconductors Division,
Gedung Philips, Jl. Buncit Raya Kav.99-100, JAKARTA 12510,
Tel. +62 21 794 0040 ext. 2501, Fax. +62 21 794 0080

Ireland: Newstead, Clonskeagh, DUBLIN 14,
Tel. +353 1 7640 000, Fax. +353 1 7640 200

Israel: RAPAC Electronics, 7 Kehilat Saloniki St, PO Box 18053,
TEL AVIV 61180, Tel. +972 3 645 0444, Fax. +972 3 649 1007

Italy: PHILIPS SEMICONDUCTORS, Piazza IV Novembre 3,
20124 MILANO, Tel. +39 02 67 52 2531, Fax. +39 02 67 52 2557

Japan: Philips Bldg 13-37, Kohnan 2-chome, Minato-ku,
TOKYO 108-8507, Tel. +81 3 3740 5130, Fax. +81 3 3740 5077

Korea: Philips House, 260-199 Itaewon-dong, Yongsan-ku, SEOUL,
Tel. +82 2 709 1412, Fax. +82 2 709 1415

Malaysia: No. 76 Jalan Universiti, 46200 PETALING JAYA, SELANGOR,
Tel. +60 3 750 5214, Fax. +60 3 757 4880

Mexico: 5900 Gateway East, Suite 200, EL PASO, TEXAS 79905,
Tel. +9-5 800 234 7381, Fax +9-5 800 943 0087

Middle East: see Italy

Netherlands: Postbus 90050, 5600 PB EINDHOVEN, Bldg. VB,
Tel. +31 40 27 82785, Fax. +31 40 27 88399

New Zealand: 2 Wagener Place, C.P.O. Box 1041, AUCKLAND,
Tel. +64 9 849 4160, Fax. +64 9 849 7811

Norway: Box 1, Manglerud 0612, OSLO,
Tel. +47 22 74 8000, Fax. +47 22 74 8341

Pakistan: see Singapore

Philippines: Philips Semiconductors Philippines Inc.,
106 Valero St. Salcedo Village, P.O. Box 2108 MCC, MAKATI,
Metro MANILA, Tel. +63 2 816 6380, Fax. +63 2 817 3474

Poland: Ul. Lukiska 10, PL 04-123 WARSZAWA,
Tel. +48 22 612 2831, Fax. +48 22 612 2327

Portugal: see Spain

Romania: see Italy

Russia: Philips Russia, Ul. Usatcheva 35A, 119048 MOSCOW,
Tel. +7 095 755 6918, Fax. +7 095 755 6919

Singapore: Lorong 1, Toa Payoh, SINGAPORE 319762,
Tel. +65 350 2538, Fax. +65 251 6500

Slovakia: see Austria

Slovenia: see Italy

South Africa: S.A. PHILIPS Pty Ltd., 195-215 Main Road Martindale,
2092 JOHANNESBURG, P.O. Box 58088 Newville 2114,
Tel. +27 11 471 5401, Fax. +27 11 471 5398

South America: Al. Vicente Pinzon, 173, 6th floor,
04547-130 SÃO PAULO, SP, Brazil,
Tel. +55 11 821 2333, Fax. +55 11 821 2382

Spain: Balmes 22, 08007 BARCELONA,
Tel. +34 93 301 6312, Fax. +34 93 301 4107

Sweden: Kottbygatan 7, Akalla, S-16485 STOCKHOLM,
Tel. +46 8 5985 2000, Fax. +46 8 5985 2745

Switzerland: Allmendstrasse 140, CH-8027 ZÜRICH,
Tel. +41 1 488 2741 Fax. +41 1 488 3263

Taiwan: Philips Semiconductors, 6F, No. 96, Chien Kuo N. Rd., Sec. 1,
TAIPEI, Taiwan Tel. +886 2 2134 2886, Fax. +886 2 2134 2874

Thailand: PHILIPS ELECTRONICS (THAILAND) Ltd.,
209/2 Sanpavuth-Bangna Road Prakanong, BANGKOK 10260,
Tel. +66 2 745 4090, Fax. +66 2 398 0793

Turkey: Yukari Dudullu, Org. San. Blg., 2.Cad. Nr. 28 81260 Umraniye,
ISTANBUL, Tel. +90 216 522 1500, Fax. +90 216 522 1813

Ukraine: PHILIPS UKRAINE, 4 Patrice Lumumba str., Building B, Floor 7,
252042 KIEV, Tel. +380 44 264 2776, Fax. +380 44 268 0461

United Kingdom: Philips Semiconductors Ltd., 276 Bath Road, Hayes,
MIDDLESEX UB3 5BX, Tel. +44 181 730 5000, Fax. +44 181 754 8421

United States: 811 East Arques Avenue, SUNNYVALE, CA 94088-3409,
Tel. +1 800 234 7381, Fax. +1 800 943 0087

Uruguay: see South America

Vietnam: see Singapore

Yugoslavia: PHILIPS, Trg N. Pasica 5/v, 11000 BEOGRAD,
Tel. +381 11 62 5344, Fax.+381 11 63 5777

For all other countries apply to: Philips Semiconductors,
International Marketing & Sales Communications, Building BE-p, P.O. Box 218,
5600 MD EINDHOVEN, The Netherlands, Fax. +31 40 27 24825

Internet: <http://www.semiconductors.philips.com>

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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.