


































电子元器件系列(中国.厦门) China.Xiamen
www.rf-china.com RF-Micom co.,Ltd

Email:sales@rf-china.com

Telephone:0086-592-5713956 Fax:5201617

Philips RF wideband transistors and MMICs for wireless

RF Wideband Transistors

RF Wideband Transistors												
Type	f _{tr} (GHz)	V _{ceo} (V)	Limits I _c (mA)	P _{tot} (mW)	Gain (dB)	N _F (dB)	@ (MHz)	Gain (dB)	N _F (dB)	@ (MHz)	P ₁ (dBm)	Package
SOT23, NPN												
PMBHT10	0.65	25	40	400	-	-	-	-	-	-	-	
PBR941	8	10	50	360	15	1.4	1000	9.5	2	2000	-	
PBR951	8	10	100	365	14	1.3	1000	8	2	2000	-	
SOT23, PNP												
PMBTH81	0.6	20	40	400	-	-	-	-	-	-	-	
BFG310/XR	14	6	10	-	14	1	1800	11	-	3000	-	
BFG325/XR	14	6	35	-	14	1	1800	10	-	3000	-	
SOT323, NPN												
BFS17W	1.6	15	50	300	-	4.5	500	-	-	-	-	
PRF547	8.5	10	50	250	16	1.5	1000	9.5	2	2000	-	
PRF957	8.5	10	100	270	15	1.3	1000	9.2	1.8	2000	-	
SOT323, PNP												
BFT92W	5	15	35	300	17	2.5	500	11	3	1000	-	
SOT343, NPN												
BFG520W(X)	9	15	70	500	17	1.6	900	11	1.85	2000	17	
BFG540W(X)	9	15	120	500	16	1.9	900	10	2.1	2000	21	
BFG403W	17	4.5	3.6	16	-	1	900	-	1.6	2000	5	
BFG480W	21	4.5	250	360	-	1.2	900	-	1.8	2000	-	
BFG410W	22	4.5	12	54	-	0.9	900	-	1.2	2000	5	
BFG425W	25	4.5	30	135	-	0.8	900	-	1.2	2000	12	
BFG21W	18	4.5	200	600	-	-	-	10	-	2400	20	
BFG310W/XR	14	6	10	-	14	1	1800	11	-	3000	-	
BFG325W/XR	14	6	35	-	14	1	1800	10	-	3000	-	
SOT353, NPN, dual transistors												
BFC520	7	8	70	1000	-	1.3	900	-	-	-	-	
BFE520	9	8	70	1000	-	1.1	900	-	1.9	2000	-	
SOT363, NPN, dual transistors												
BFM505	9	8	18	500	17	1.4	900	10	1.9	2000	-	
BFM520	9	8	70	1000	15	1.7	900	9	1.9	2000	-	
SC75, SOT416, NPN												
BFR92AT	5	15	25	150	14	2	1000	8	-	2000	-	
BFR93AT	5	12	35	150	13	1.5	1000	8	-	2000	-	
BFQ67T	8	10	50	150	13	2	1000	8	2.7	2000	-	
PRF949	9	10	50	150	16	1.5	1000	-	-	-	-	
BFR505T	9	-	18	150	17	1.2	900	-	-	-	-	
BFR520T	9	-	70	150	15	1.6	900	9	1.9	2000	17	
SOT343R, NPN, SiGe												
BFU510	45	2.5	15	38	-	0.6	900	20	0.9	2000	-	
BFU540	45	2.5	50	125	-	0.6	900	20	0.9	2000	-	

Silicon MMICs

General Purpose Wideband Amplifiers, 50 Ω Gain Blocks															
Type	Limits			@ 1 GHz			Gain3 (db) @			@			Package		
V _s (V)	I _s (mA)	P _d (mW)	f ₁ ¹ @-3db (ghz)	N _F (db)	P _{sat} (dbm)	Gain ² (db)	P1db (dbm)	OIP3 (dbm)	100 MHz	2.2 GHz	2.6 GHz	3.0 GHz	V _s (v)	I _s (mA)	
BGA2711	6	20	200	3.6³	4.7	2	12.9	-2	10	13	14.1	13.8	12.8	5.0	12
BGA2748	4	15	200	1.9	1.8³	-4	21.3	-10	-2	14.8	17.6	14.2	11.3	3.0	5.7
BGA2771	4	50	200	2.4	4.4	12³	21	11	22	20.3	20.4	17.5	15.2	3.0	33
BGA2776	6	34	200	2.8	4.7	8	22.8³	5.5	17	22.2	23.2	20.8	18.7	5.0	23.8
BGA2709	6	35	200	2.8	4.0	12.5	22.7³	8.3	24	22.6	22.7	22.0	21.1	5.0	23.5
BGA2712	6	25	200	2.8	3.9	4.8	21.3	0	12	20.9	21.9	20.8	18.6	5.0	12.6
BGM1011	6	35	200	-	4.7	13.8	30	12.2	23	25.0	37.0	32.0	28.0	5.0	25.5
BGM1012	4	50	200	3.6	4.8	9.7	20.1	6	18	19.5	20.4	19.9	18.7	3.0	14.6
BGA2715 ⁴	6	8	200	3	2.6	-5	22	-9	14	14.0	22.0	21.0	19.0	5.0	4.3
BGA2716 ⁴	6	25	200	3.6	4.9	11	24	7	24	24.0	24.0	24.0	23.0	5.0	15.9
BGA2717 ⁴	6	15	200	3	2.1	1	23	-3	20	20.0	23.0	23.0	20.0	5.0	8

Notes: 1: Upper -3 db point, to gain at 1 ghz. 2: Optimized parameter 3: Gain = |S₂₁|². 4: In development in bold are the parameters designed to be optimal for that specific type

Medium-power gain blocks											
Type	Limits			@ 850 MHz			@ 2500 MHz			Package	
V _s (V)	I _s (mA)	P _d (mW)	N _F (db)	S21 ¹ (db)	P1db (dbm)	OIP3 (dbm)	N _F (db)	S21 ¹ (db)	P1db (dbm)	OIP3 (dbm)	
BGA6289	4.1	84	16	3.5	15	17	31	3.8	12.0	14.0	25.0
BGA6489	5.1	74	17	3.1	20	20	33	3.4	15.0	15.0	27.0
BGA6589	4.8	84	20	3.0	22	21	33	3.4	15.0	18.0	30.0

Low Noise Wideband Amplifiers															
Type	Limits			@ 900 MHz			@ 1800 MHz			Gain3 (db) @			@	Package	
V _s (V)	I _s (mA)	P _{tot} (mW)	N _F (db)	Gain (dB)	IIP3 (dBm)	N _F (dB)	Gain (dB)	IIP3 (dBm)	100 MHz	1 GHz	2.6 GHz	3.0 GHz	V _s (v)	I _s (mA)	
BGA2001	4.5	30	135	1.3	22 ¹⁾	-7.4	1.3	19.5 ¹⁾	-4.5	20	17.1	11.6	10.7	2.5	4
BGA2003	4.5	30	135	1.8	24 ¹⁾	-6.5	1.8	16 ¹⁾	-4.8	26	18.6	11.1	10.1	2.5	10 ²⁾
BGU2003	4.5	30	135	1.0	22	-6.5	1.1	18	2.5	25	18	12	11	2.5	10
BGA2004	3.3	15	50	-	-	-	1.4	18	-5	-	-	-	-	2.7	6
BGA2011	4.5	30	135	1.5	19 ³⁾	10	-	-	-	24	14.8	8	6.5	3	15
BGA2012	4.5	15	70	-	-	-	1.7	16 ³⁾	10	22	18.2	11.6	10.5	3	7

Notes: 1:MSG 2:Adjustable bias 3:|S₂₁|²

2 Stage Variable Gain Linear Amplifier													
Type	Limits			Frequency Range (MHz)	@ 900 MHz			@ 1900 MHz				@	Package
V _s (V)	I _s (mA)	P _{tot} (mW)	Gain ¹ (dB)	DG ² (dB)	P1dB (dBm)	ACPR (dBc)	Gain ¹ (dB)	DG ² (dB)	P1dB (dBm)	ACPR (dBc)	V _s (v)	I _s (mA)	
BGA2031/1	3.3	50	200	800-2500	24	62	11	49	23	56	13	49	3

Notes: 1: Gain = G_p, power gain 2: DG = Gain control range

Wideband Linear Mixer													
Type	Limits			RF Output Frequency Range (MHz)	IF Output Frequency Range (MHz)	@ 880 MHz			@ 2450 MHz			@	Package
V _s (V)	I _s (mA)	P _{tot} (mW)	N _F (dB)	Gain ¹ (dB)	OIP3 (dBm)	NF (dB)	Gain ¹ (dB)	OIP3 (dBm)	NF (dB)	Gain ¹ (dB)	OIP3 (dBm)	V _s (v)	I _s (mA)
BGA2022	4	20	40	800-2500	50-500	9	5	4	9	6	10	3	51

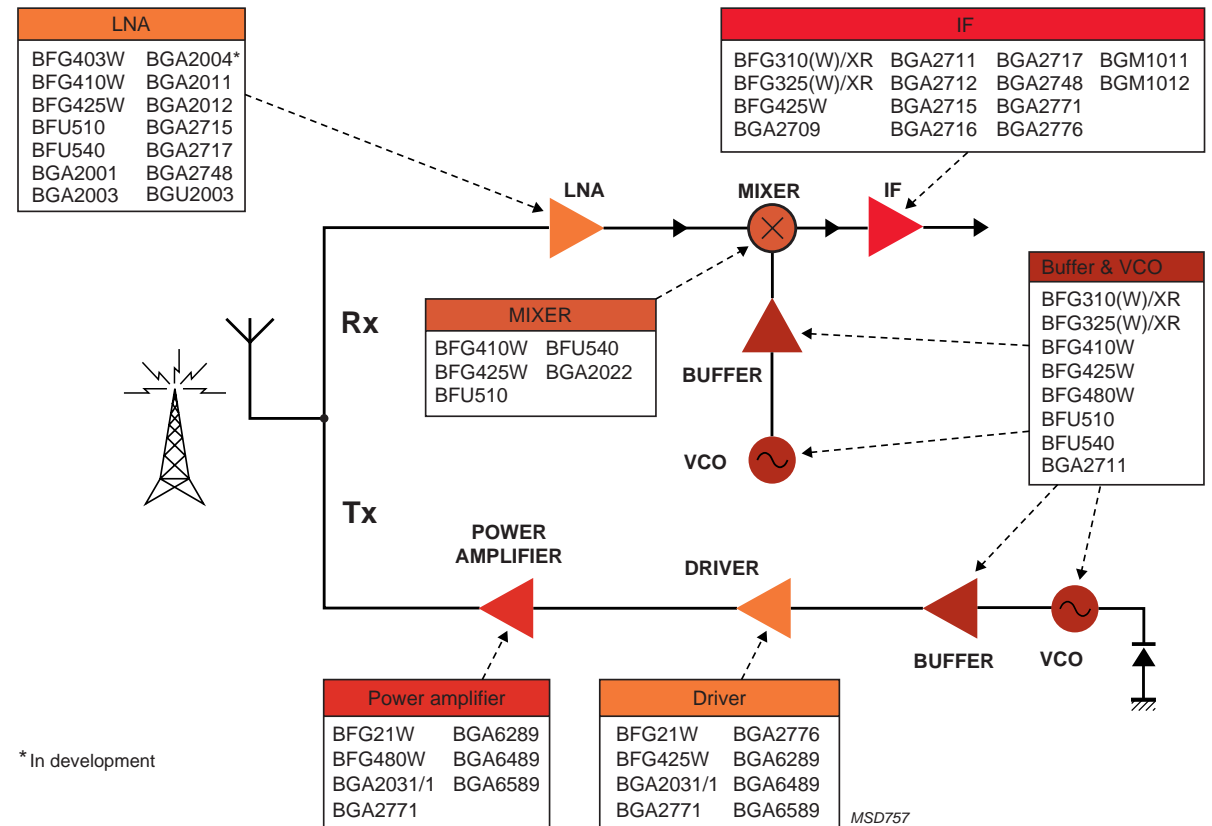
Notes: 1: Gain = G_c, Conversion gain

Philips RF wideband transistors and MMICs for wireless

Quick selection guide

Type	f_T (GHz)	Operating Frequency (MHz)	I_C (mA)	Package
PMBTH10	0.6	1-200	1-20	SOT23
PMBTH81	0.6	1-200	1-20	SOT23
BFS17W	1.6	10-500	2-20	SOT323
BFR92AT	5	50-1000	3-30	SC-75
BFT92W	4	50-1000	3-30	SOT323
BFR93AT	5	50-1000	5-40	SC-75
PBR941	8	50-1800	3-30	SOT23
PBR951	8	50-1800	5-50	SOT23
PRF947	8	50-1800	3-30	SOT323
PRF949	8	50-1800	3-30	SC-75
PRF957	8	50-1800	5-50	SOT323
BFR505T	9	50-1800	1-10	SC-75
BFR520T	9	50-1800	3-30	SC-75
BFC520	9	50-1800	3-30	SOT353
BFE520	9	50-1800	3-30	SOT353
BFM520	9	50-1800	3-30	SOT363
BGF310W/XR	14	50-3000	5-10	SOT343R
BFG325W/XR	14	50-3000	25-35	SOT343R
BFG403W	17	200-2600	0.5-5	SOT343R
BFG410W	22	200-2600	2-15	SOT343R
BFG425W	22	200-2600	3-30	SOT343R
BFG480W	18	200-2600	30-150	SOT343R
BFG21W	18	200-2600	50-250	SOT343R
BGA2711	-	1-3600	12	SOT363
BGA2748	-	100-2200	6	SOT363
BGA2771	-	20-2500	33	SOT363
BGA2776	-	10-2800	24	SOT363
BGA2709	-	50-3600	23	SOT363
BGA2712	-	1-3200	12	SOT363
BGM1011	-	100-2500	25	SOT363
BGM1012	-	50-3600	15	SOT363
BGA2715	-	100-3000	4	SOT363
BGA2716	-	50-3600	16	SOT363
BGA2717	-	100-3000	8	SOT363
BGA2001	-	100-3000	4	SOT343R
BGA2003	-	100-3000	4-15	SOT343R
BGA2011	-	100-3000	15	SOT363
BGA2012	-	100-3000	7	SOT363
BGA2022	-	10-3000	6	SOT363
BGA2031/1	-	100-3000	51	SOT363
BGA6289	-	0-3000	84	SOT89
BGA62489	-	0-3000	74	SOT89
BGA6589	-	0-3000	84	SOT89
BFU510	45	900-2000	15	SOT343R
BFU540	45	900-2000	50	SOT343R

Philips generic front-end application block diagram



Philips Semiconductors

Philips Semiconductors is a worldwide company with over 100 sales offices in more than 50 countries.

For a complete up-to-date list of our sales offices please e-mail sales.addresses@www.semiconductors.philips.com

A complete list will be sent to you automatically. You can also visit our website <http://www.semiconductors.philips.com/sales>

© Koninklijke Philips Electronics N.V. 2003

SCS 77

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.

The information presented in this document does not form part of any quotation or contract, is believed to be accurate and

reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use.

Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

