DATA SHEET

Line-ups
RF Power Transistors for UHF

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INTRODUCTION

In this section, we present information on recommended circuit line-ups in the main RF power application areas. A comprehensive range of output power levels is indicated, together with our recommended types in the particular line-up configuration. The necessary drive power level for each line-up is indicated in the first column.

More detailed application information can be found in the application reports book *"Bipolar and MOS Transmitting Transistors"*.

AM AIRCRAFT TRANSMITTERS (100 to 400 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	$P_{L(carr)}$ (W)	V_{CE} (V)	S = stud F = flange
40	BLW89	2 × BLW90	2 × BLX94C	40	28	S
60	BLW89	2 × BLW91	2 × BLU60/28	60	28	S/F
500	BLW90	2 × BLX94C	2 × BLU60/28	120	28	S/F

PowerMOS

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	$P_{L(carr)}$ (W)	V_{CE} (V)
30	BLF521(1)	BLF522(1)	BLF545	40	28
25	BLF521(1)	BLF543	BLF546	80	28
30	BLF521(1)	BLF543	BLF547	100	28
100	BLF521(1)	BLF544	BLF548	150	28

Note

1. V_{DS} = 12.5 V.

PORTABLE and MOBILE TRANSMITTERS (400 to 512 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
45	BLV90	BLU99		3	7.5
15	BFR96S	BLU99	BLW81	10	13
400	BLU99	BLU20/12		20	
280	BLU99	BLU20/12	BLU45/12	45	13
400	BLU99	BLU20/12	BLU60/12	60	13

PowerMOS

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
50	BLF521	BLF522		5	12.5

BASE STATIONS (400 to 470 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
40	BLW89	BLW91	BLX94C	30	28
220	BLW90	BLX94C	BLU60/28	60	28

PowerMOS

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
35	BLF521(1)	BLF522(1)	BLF545	40	28
40	BLF521(1)	BLF543	BLF546	80	28
150	BLF521(1)	BLF544	BLF548	150	28
45	BLF521(1)	BLF544	BLF547	100	28

Note

1. V_{DS} = 12.5 V.

ANALOG CELLULAR (900 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
10	BFG10W/X	BLT71/8		1.2	4.8
1	BFG540/X	BLT80	BLT81	1.2	6
1	BFG540/X	BLT70	BLT71	1.2	4.8
1	BFG520W/X	BFG10W/X	BLT61	1.2	3.6

DIGITAL CELLULAR (900 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
1	BFG540W/X	BFG10W/X	BLT72	3(1)	4.8
1	BFG540W/X	BFG10W/X	BLT62	3	3.6
1	BFG540W/X	BFG10W/X	BLT82	3.5(1)	6

Note

1. Pulsed.

PORTABLE TRANSMITTERS (860 to 960 MHz))

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
1	BFG540	BLT80	BLT81	1.2	6
15	BFG91A	BLT80	BLT92/SL	3	7.5

MOBILE TRANSMITTERS (860 to 960 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	4th STAGE	P_L (W)	V_{CE} (V)	S = stud F = flange
110	BLU86	BLV91/SL	BLV93		8	13	S/F
100	BLV90	BLV92	BLV94		15	13	S/F
100	BLU86	BLV91/SL	BLV93	BLV95	22	13	S/F

BASE STATIONS (860 to 960 MHz) CLASS AB OPERATION

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	4th STAGE	P_L (W)	V_{CE} (V)	f (MHz)
270	BLV103(1)	BLV934			30	26	960
220	BLV103(1)	BLV935			30	26	960
65	BLV99/SL(2)	BLV910	BLV946		40	26	960
64	BLV99/SL	BLV100(3)	BLV101A		45	25	900
100	BLV99/SL	BLV100(3)	BLV101B		45	25	960
25	BGY916	BLV958			75	26	960
75	BLV103(1)	BLV920	BLV958		75	26	960
75	BLV103(1)	BLV920	2 × BLV946		80	26	960
25	BLV99/SL	BLV103	BLV98CE	2 × BLV101A	85	25	900
30	BLV99/SL	BLV103	BLV97CE	2 × BLV101B	85	25	960
35	BLV99/SL	BLV103	BLV945A	BLV950	120	25	900
20	BLV99/SL	BLV103	BLV945A	BLV950	150 (PEP)	25	900(4)
250	BLV103(1)	BLV934	BLV950		150	26	960

Notes

1. BLV904 is a comparable transistor in a SMD package.
2. BLV902 is a comparable transistor in a SMD package.
3. BLV909 is a comparable transistor in a SMD package.
4. d_{IM} = –30 dB.

DIGITAL CELLULAR (1800 MHz)

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
2	BFG540W/X	BFG10W/X	BLT14	1.6	4.8
1	BFG540W/X	BFG10W/X	BLT13	2	6

BASE STATIONS (1800 to 1900 MHz)

Bipolar

1st STAGE	2nd STAGE	3rd STAGE	4th STAGE	P_L (W)	V_{CE} (V)
LLE18010X	LLE18040X	LLE18150X		15	24
LLE18010X	LLE18040X	LLE18150X	2 × LLE18300X	50	24
BGY1916	LFE20500X			50	26
LLE18010X	LLE18040X	LLE18150X	2 × LXE18400X	75	24
LLE18010X	LLE18040X	LLE18300X	2 × LFE20500X	90	24

BASE STATIONS (1900 to 2000 MHz)

Bipolar

1st STAGE	2nd STAGE	3rd STAGE	4th STAGE	P_L (W)	V_{CE} (V)
LLE18010X	LLE18040X	LLE18150X		15	24
LLE18010X	LLE18040X	LLE18150X	2 × LLE18300X	50	24
BGY1816	LFE18500X			50	26
LLE18010X	LLE18040X	LLE18150X	2 × LXE18400X	75	24
LLE18010X	LLE18040X	LLE18300X	2 × LFE18500X	90	24

BASE STATIONS (1800 to 2000 MHz) CLASS AB OPERATION

Bipolar

INPUT POWER (mW)	1st STAGE	2nd STAGE	3rd STAGE	P_L (W)	V_{CE} (V)
25	BGY1816; BGY1916			15	26
60	BLV2040(1)	BLV2042(1)	BLV2044	15	26
120	BLV2040(1)	BLV2044	BLV2045	25	26
250	BLV2042(1)	BLV2044	2 × BLV2045	50	26

Note

1. In a SOT409 SMD package.