

NXP power LDMOS transistors BLF7G24LS-100 and BLF7G24LS-140

RF power transistors for leading LTE basestation performance at 2.3 to 2.4 GHz

Designed for LTE basestations and built in industry-leading Gen7 LDMOS, these highly DPD-friendly transistors cover the entire frequency range of 2.3 to 2.4 GHz. They enable asymmetrical Doherty designs delivering efficiencies of 44% and 15 dB of gain.

Key features

- ▶ Average output power: 20 W (-100 type) and 30 W (-140 type)
- ▶ Power gain: 18 dB (-100) and 18.5 dB (-140)
- ▶ Drain efficiency: 27% (-100) and 26.5% (-140)
- ▶ ACPR: -46 dBc (-100) and -45 dBc (-140)

Key benefits

- ▶ Field-proven ruggedness and reliability
- ▶ Reduced energy consumption of basestations due to highly efficient Doherty circuit
- ▶ Excellent thermal stability
- ▶ Easily linearizable due to low memory effects
- ▶ Very consistent device performance enabling best manufacturing yields

Applications

- ▶ Basestations and multi-carrier applications in the 2.3 to 2.4 GHz range

NXP, the market leader in RF power devices, uses its rugged Gen7 LDMOS technology to produce these RF power transistors, optimized for LTE 2.3 to 2.4 GHz applications.

Designed to work together in an asymmetrical Doherty circuit, these ceramic transistors deliver best-in-class efficiency. In this configuration, the BLF7G24L(S)-100 is used as the main amplifier and the BLF7G24L(S)-140 as the peak amplifier.

Both devices feature excellent thermal stability and are designed for low memory effects. This results in superior digital pre-distortion (DPD) capability. These devices also include integrated ESD protection, and comply with directive 2002/95/EC regarding the Restriction of Hazardous Substances (RoHS).

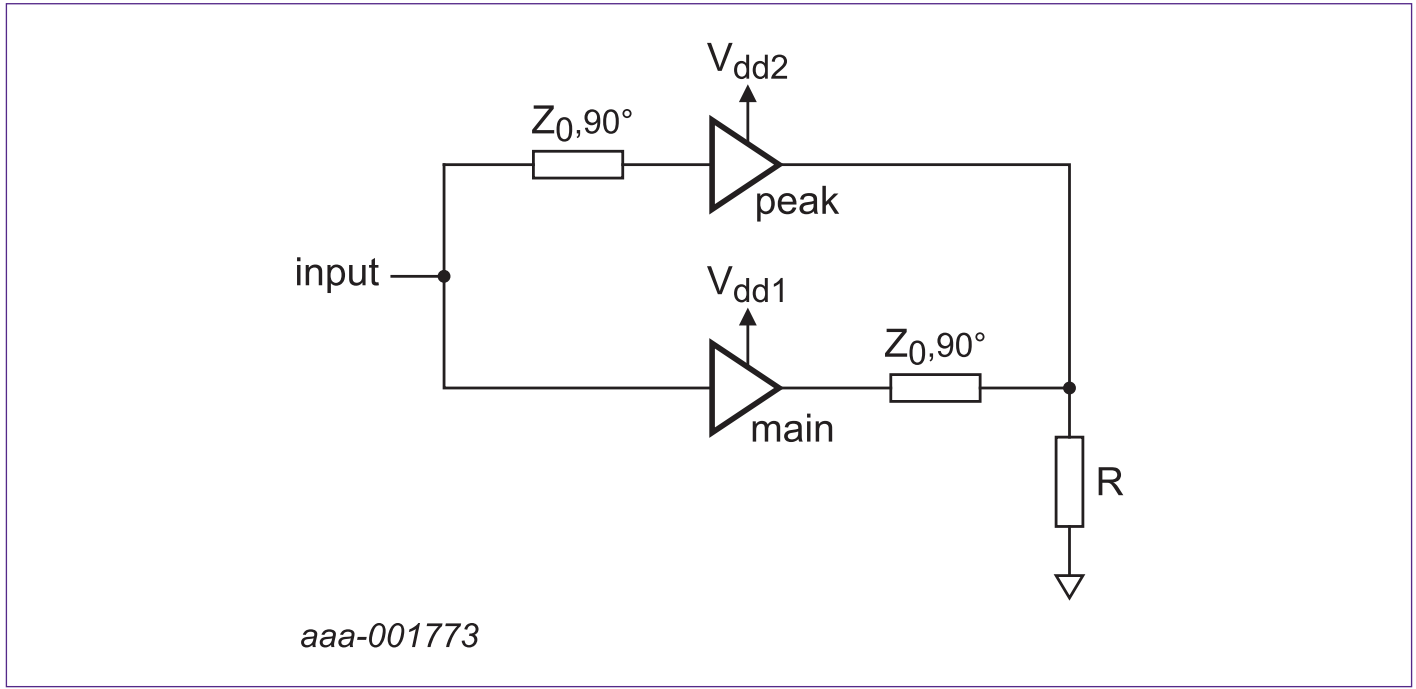
Both RF Power devices are backed by NXP's world-class application support, which includes reference designs, application notes, physics-based simulation models, and, on request, customer-tailored support, to reduce time to market. In addition, NXP's high-volume manufacturing operations ensure device consistency and high end-product yields.



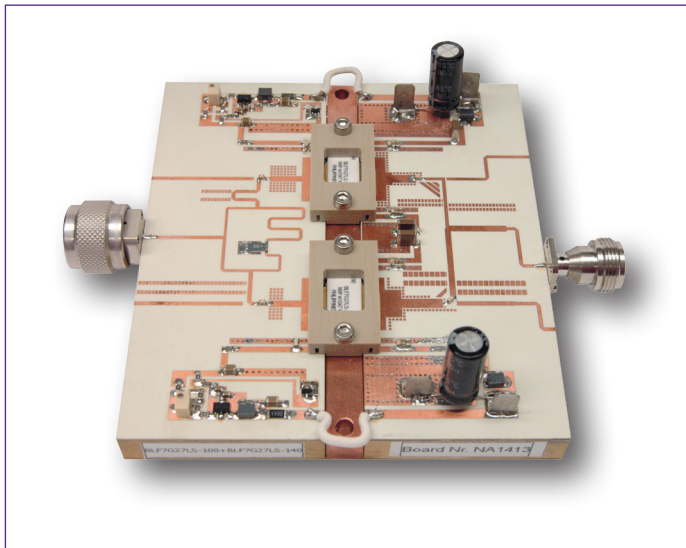
2.3 to 2.4 GHz basestation line-up

Function	Type	f_{\min} (MHz)	f_{\max} (MHz)	CW P1dB (W)	V_{DS} (V)	Test signal performance				Test signal	Package
						P_L (W)	BO (dB)	η_b (%)	G_p (dB)		
Final	BLF7G24L(S)-100	2300	2400	350	28	14	8.5	24	18	IS-95	SOT502
Final	BLF7G24L(S)-140	2300	2400	500	28	30	6.7	22	17	IS-95	SOT502

Doherty block diagram – as used by BLF7G24L(S) family



Asymmetrical Doherty demoboard using BLF7G24LS-100 as the main amplifier and BLF7G24LS-140 as the peak amplifier



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