

NXP LDMOS RF power transistors BLF88x, BLF879P & BLF642

RF power UHF/DVB-T broadcasting at its best

Supporting all broadcast amplifier designs in the 470 to 860 MHz band, this complete family of transistors delivers up to one octave wideband operation combined with field-proven ruggedness, highest efficiency, and outstanding linearity.

Key features

- ▶ All devices characterized for DVB-T operation
- ▶ Solutions available for all sub-bands across UHF band
- ▶ High-performance finals
 - Power levels up to 125 W for DVB-T signals
 - Efficiencies up to 33%
 - Gain > 19 dB
- ▶ High-performance drivers
 - Power levels up to 35 W
 - Efficiencies up to 52%
 - Gain > 20 dB

Key benefits

- ▶ Highest power levels available for DVB-T broadcasting
- ▶ Reduced component count designs
- ▶ Field proven ruggedness and reliability
- ▶ Best broadband performance
- ▶ Complete (driver(s) + final(s)) optimally matched line-ups

Applications

- ▶ Communication transmitters in the UHF band
- ▶ Industrial applications in the UHF band

All the transistors listed here are built in NXP's industry-leading LDMOS process technology and are fully characterized for DVB-T operation.

BLF888A: Very broadband & rugged

This 600 W transistor runs from a 50 V supply voltage and is a matched device optimized for DVB-T. It can deliver an average of 125 W DVB-T output power over the full UHF band with 21 dB power gain and 32.5% drain efficiency. The ruggedness of 40:1 makes it the ultimate choice as the final stage for digital transmitter applications. An earless version, the BLF888AS, enables surface-mount assembly processes and takes most advantage of the package's very low thermal resistance.

BLF888B: Best-in-class Doherty efficiency

Optimized for Doherty power amplifier designs, this 650 W transistor achieves a breakthrough 50% DVB-T efficiency, and offers significant reductions in overall transmitted power consumption. Proven ruggedness makes it an excellent choice for digital and analog applications.



BLF879P: For highest power from a 42 V supply

Targeting cost-effective DVB-T applications operating from a 42 V supply, this transistor delivers 95 W power for DVB-T signals with 33 % efficiency and 21 dB gain. Again, this device boasts field proven ruggedness and reliability.

BLF884P: Optimum power levels in repeaters

This 350 W transistor brings all the benefits of the BLF888A scaled to a lower power level. In repeaters and other lower power applications, it achieves 75 W DVB-T signals, with 33% efficiency and 21 dB gain.

BLF642 & BLF881: Driving the finals

Designed to drive all solutions using NXP's final power transistors for broadcast applications, the BLF642 is an unmatched 35 W (CW) driver transistor suitable for the frequency range HF to 1400 MHz, operating from a 32 V supply.

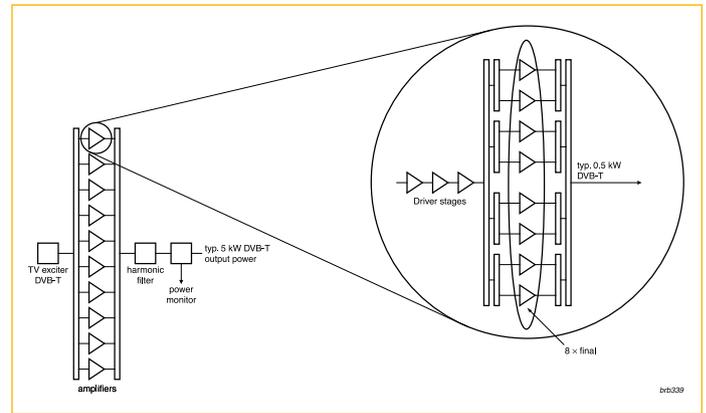
The BLF881 is an unmatched 140 W (CW) transistor designed for frequencies between HF and 1 GHz with 21 dB gain and 34% efficiency from a 50 V supply. The power level of the BLF881 qualifies this device as a driver or as a final in lower power applications. An earless version, the BLF881S, enables an even more compact PCB design.

It goes without saying that also the driver devices feature excellent ruggedness and reliability.

Fast, effective design cycles

For the shortest possible time to market, NXP's industry-leading design and application support provides all these RF power devices with best-in-class simulation models for large-signal operation, plus loadpull data and other design related documentation. Design engineers can depend on these fully physics-based, electro-thermal models, for the most reliable simulation results. The models are available for ADS and AWR/ Microwave Office, and are shipped with all the necessary libraries and documentation.

BLF88x block diagram



BLF642



BLF879P



BLF881



BLF884P



BLF888A



BLF888B



Selection table

Function	Type	f_{min} (MHz)	f_{max} (MHz)	P_{1dB} (W)	$P_{L(av)}$ (W)	ηD (%)	G_p (dB)	V_{ds} (V)	Test signal	Package
driver	BLF642	470	860	35	17.5	50	19	32	DVB-T	SOT467
driver	BLF881(S)	470	860	140	33	34	21	50	DVB-T	SOT467
final	BLF884P(S)			350	70	33	21	50	DVB-T	SOT1121
final	BLF879P	470	860	500	95	33	21	42	DVB-T	SOT539
final	BLF888A(S)	470	860	600	125	32,5	21	50	DVB-T	SOT539
final	BLF888B(S)	470	860	650	120	33	21	50	DVB-T	SOT539

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