

Philips' Breakthrough in W-CDMA Efficiency

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Advanced LDMOS technology for best-in-class amplification

A major technology development, Philips' new fifth-generation 0.4 μm Laterally Diffused MOS (LDMOS) process enables the creation of RF power amplifier output stages for wideband-CDMA (W-CDMA) applications that break the 30% efficiency barrier. W-CDMA infrastructures are already being rolled out to deliver the advanced multimedia and data services that will drive tomorrow's mobile market. Using Philips' new process, W-CDMA basestation manufacturers can reduce power consumption in RF power amplifiers by 15% - significantly lowering running costs and heatsinking requirements.

The process combines 0.4 μm feature sizes with four-layer metalization to deliver a unique combination of superior operating efficiency, high gain (17 dB) and excellent linearity. The thick and wide aluminum-copper (AlCu) metalization also significantly reduces parasitics, leading to improved RF performance, and provides a four-fold increase in reliability. This latter feature allows operating temperatures up to 25 $^{\circ}\text{C}$ higher than conventional devices.

The new process is suitable for all frequency bands from 800 MHz to 2.2 GHz. Besides W-CDMA applications, its unique features can also bring unparalleled benefits to high-performance RF power amplifiers in 1 - 2 GHz GSM / EDGE and CDMA basestations. It is the first 0.4 μm LDMOS RF power transistor technology in volume production and the first products - such as the BLF5G-22 W-CDMA transistor - will begin

sampling in Q4, 2004.

Find more about [LDMOS process technology](#)

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