BREAKING THE 100MHZ BARRIER

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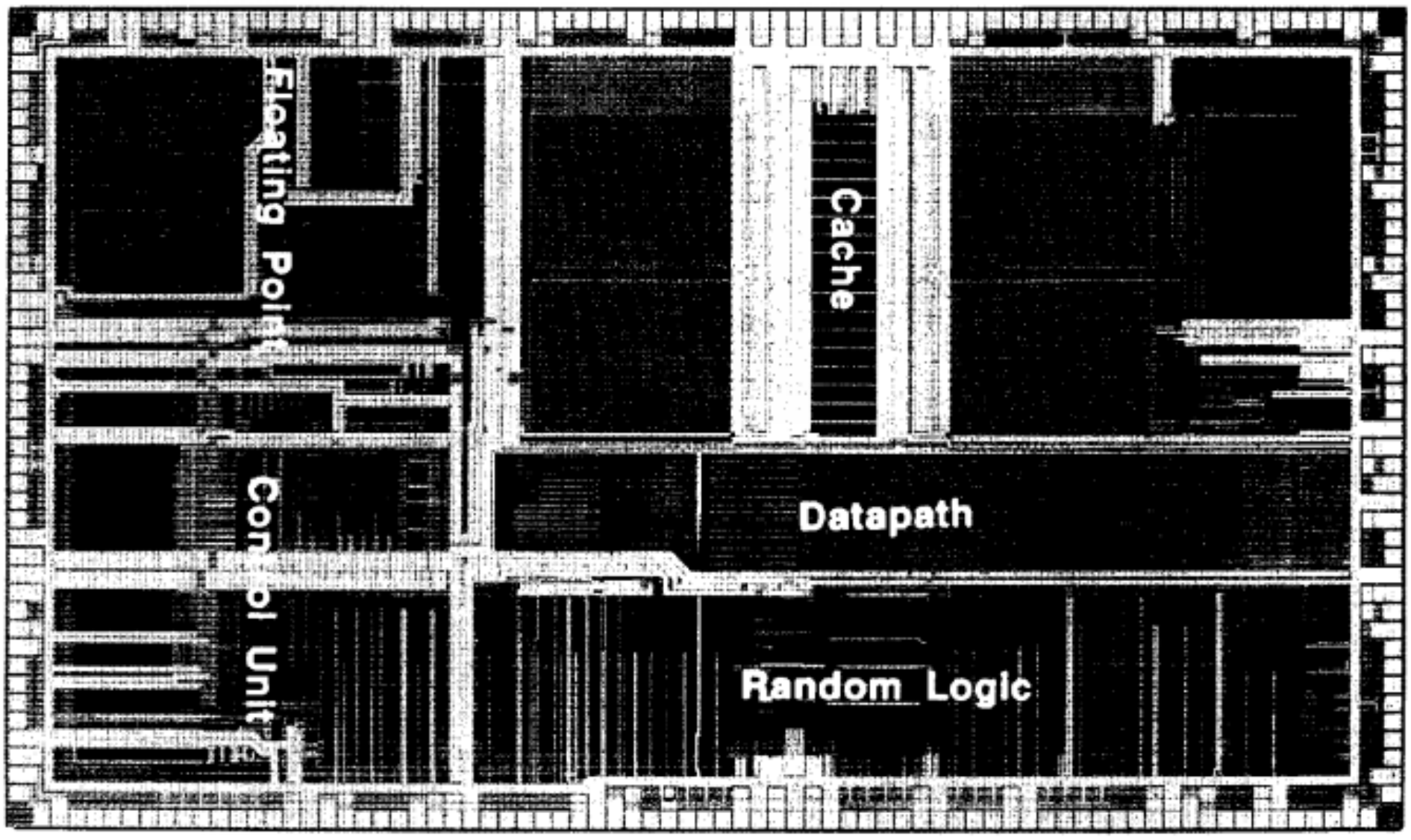

A CMOS 100MHz Microprocessor

EXPONENTIALLY INCREASING microprocessor operating frequencies reached 100MHz in the early 1990s. Performance was also enhanced by adding more function; improved integration density and three levels of metal wiring allowed the chip described here to incorporate an on-chip floating point unit and an L1 cache. The push towards deeper pipelines, more aggressive circuit techniques, and improved design and modeling tools meant that chip frequency continued to improve faster than technology scaling alone would have predicted. The push towards higher frequencies accelerated over the decade that followed, as the microprocessor market became fixed on frequency as a figure of merit.

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