Sequencer controls power supplies' turn-on and turn-off order

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When a design based on multiple point-of-load dc/dc converters requires a specific power-supply-start-up sequence, wiring each converter's power-good output to the next converter's enable input produces the desired voltage cascade. Although this approach works well for simple designs, it fails to satisfy a requirement of many modern microprocessors and DSPs: that, during shutdown, the power-supply rails switch off in reverse order. Although various vendors provide programmable-sequencing ICs, these components are usually too expensive for cost-sensitive applications.

Offering an alternative to programmable-sequencing ICs, the circuit of **Figure 1** can sequence and cheaply
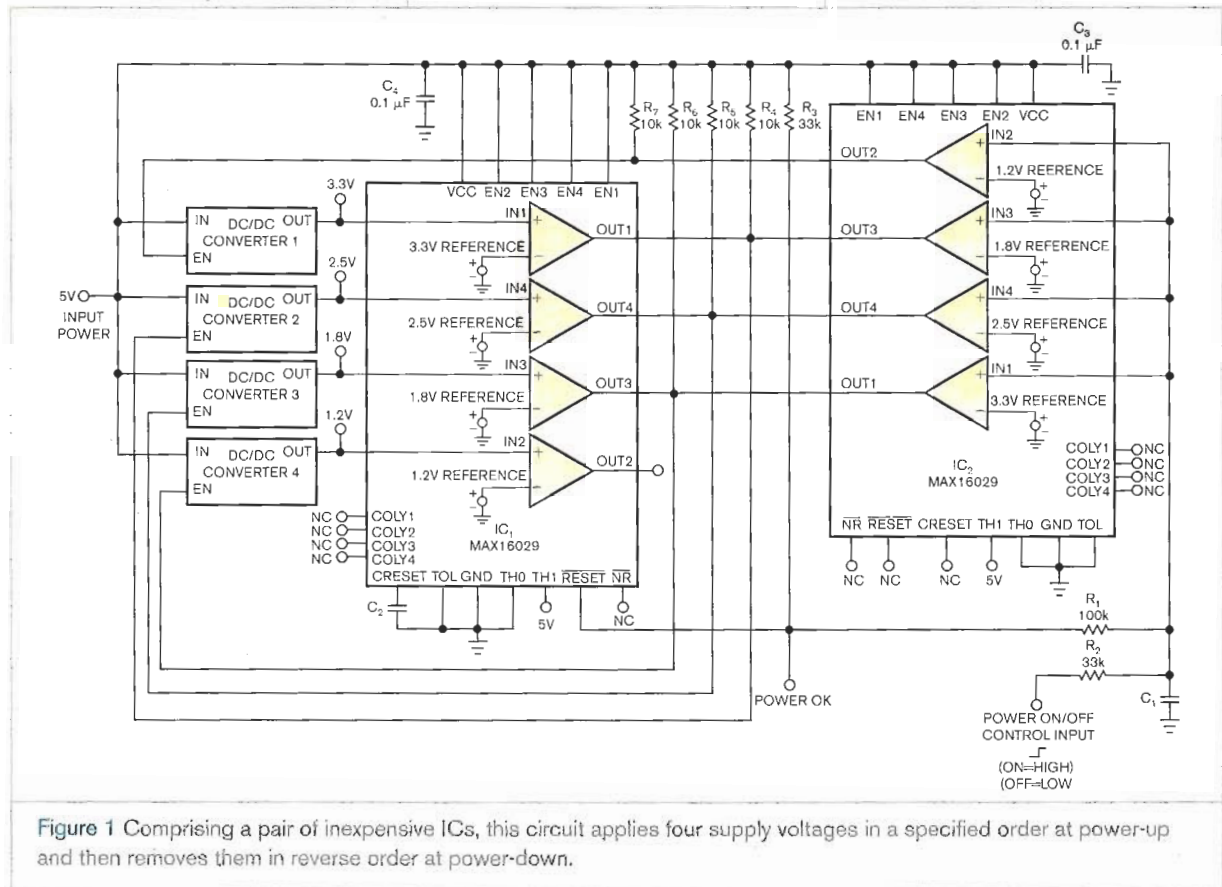

Figure 1 Comprising a pair of inexpensive ICs, this circuit applies four supply voltages in a specified order at power-up and then removes them in reverse order at power-down.