

CHAPTER 7: INTEGRATED CIRCUITS

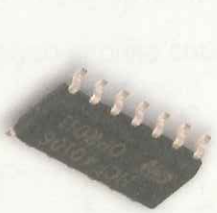
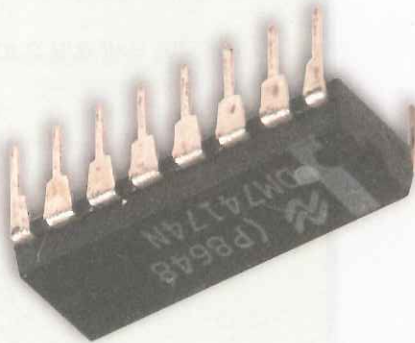
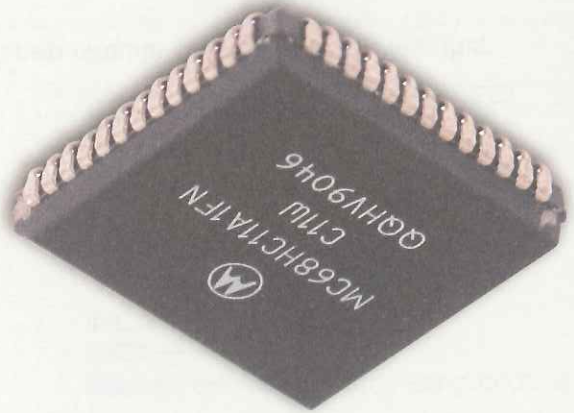
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on them, and a drawing of everything on them would be huge. Spectacular improvements in cost, size, and reliability have been achieved as a result.

Further research led to the development of microprocessor ICs, which can do many different tasks based on programming that can be easily changed. The leader of Intel Corporation once boasted that the speed of the newest microprocessors doubled every eighteen months. This came to be known as Moore's Law, and held true for more than a decade.

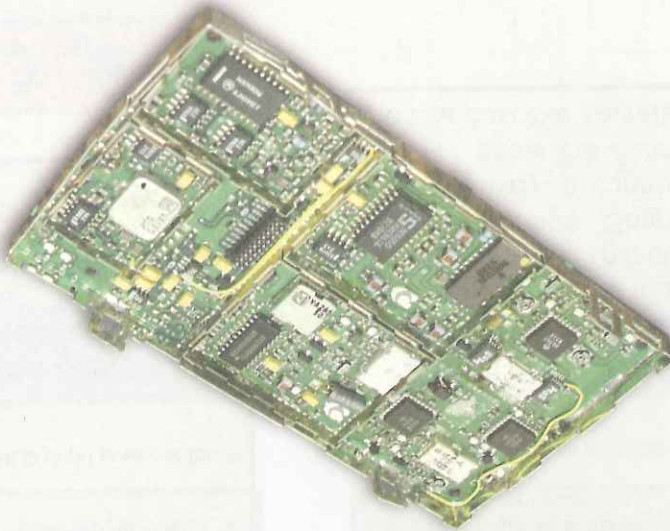
A key advantage of semiconductors is that several transistors can be manufactured on a single piece of silicon. This led to the development of integrated circuit (IC) technology around 1960. In ICs, careful control of complex manufacturing processes has enabled entire circuits consisting of transistors, diodes, resistors, and capacitors to be constructed on a silicon base. IC manufacturing is so specialized that particles of dust can render parts useless.

Many thousands of parts now fit into an area smaller than your fingernail. In fact, some ICs used in computers now have more than a million transistors



Integrated circuits are used in everything from simple electronic toys to the most advanced computers. Many technologies would not have been possible

without them. A cellular phone, for example, is an extremely complex device that has been so miniaturized with ICs that it fits in your hand.



In this chapter you will learn about the integrated circuit modules included in snap circuits, and have the opportunity to make many types of circuits using them.