Recent trends of power electronics in Japan

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Summary: Recent developments in the field of power electronics and their application in Japan are reported.

The most remarkable advance in the field in these years the introductions of self-quenching devices such as power transistors and microcomputers for their control. With these two new technologies the production of power electronics equipments grows steadily in spite of general depression.

At first the status of new self-quenching devices is explained. Power transistors, GTO-thyristors, power MOSFET and SI thyristers are investigated and compared. The area of their application is discussed.

With the introduction of these new devices the output waveform control of converters progresses much. Also their elimination of commutating circuit improves their power to weight ratio and derive the applications in the traction purpose.

The microcomputer based control of electrical machines extends now in practical applications. Examples in mill drive systems and ac drive systems are summarized and possibilities of implementing higher control argolithm are studies.