



The Availability of High Power Semiconductors  
from Mitsubishi Electric Corp.

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At the recent IEEE Exhibit in New York City, Mitsubishi Electric Corp. exhibited a line of high power semiconductors which may be of interest to some people at NAL. The outstanding characteristics of these semiconductors are:

1. High Current Ratings
2. High Voltage Ratings
3. Low Prices

Some of the products on which I was able to obtain information (a complete set of literature is being sent to me from Japan) are:

1. Silicon Rectifier Diode Assembly, Type FD1000B, with a current rating of 800 A average and the peak inverse voltages of 4000, 5000 and 6000 volts. This is believed to be the highest voltage and power rated diode available.
2. High Power Thyristor Assembly Type FT800A rated at 940 A rms on-state current and the repetitive peak off-state voltage from 2500 to 4000 V. The nearest comparative unit is the Power Semiconductors Inc., Mega Pack unit rated at 950 A rms and 1800 V.

- 3. High Power Thyristor, of flat package design, type FT 500 A, rated at 630 A rms on-state current and the repetitive peak off-state voltage of 800 through 2500 V. The highest voltage ratings of the U. S. manufactured units is 1400 V, and the current rating 850 A rms (Westinghouse 282 ZH).

The price comparison between this unit and a smaller current, 550 A, Westinghouse unit (270 series) is interesting. The Mitsubishi prices are F.O.B. Japan.

Volts	Mitsubishi	Westinghouse
800	\$109.60	\$366.00
1200	143.00	582.00
1400	--	700.00
1600	175.00	
2000	215.00	

- 4. Fast Switching High Power Thyristor Type FT 500 AW, AX and AY. These units rated at 400 A average on-state current and from 600 to 1300 V peak repetitive; are designed for  $dv/dt$  of 200 V/ $\mu$ sec and a  $di/dt$  of 200 A/ $\mu$ sec. The turn-off time for the fastest unit, AY, is 15  $\mu$ sec, while the shortest turn-off time for the best Westinghouse unit, 2782 series rated at 300 A, is 40  $\mu$ sec.

- 5. Logic Triac type BCR 150 A features high blocking voltages 400 to 1200 V, 150 A rms on-state current and 20 V/ $\mu$ sec commutating  $dv/dt$  at high  $di/dt$ . This unit is similar to the International Rectifier 100 A and the 200 A triacs. The difference is the price. For a 1000 V repetitive peak off-state voltage such as, for example, is required for 480 V 3 $\phi$  line

operation, the price comparison is as follows:

Current(A)	Mitsubishi	I.R.
100		\$278.00
150	\$105.29	
200		\$359.00

The Mitsubishi Electric Corporation has a Chicago representative:

Mr. S. Takahashi  
119 East Lane Street  
Prudential Plaza  
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Tel. (312) 222-1172

However, their man with most answers is the Los Angeles representative:

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