

## 1000V POWER TRANSISTOR MODULES

The demand for large capacity high voltage power transistors with a greater number of functions is expanding rapidly, due no doubt to the advantages of power modules over discrete devices.

FUJI ELECTRIC has already introduced power modules in 600V, 30A, 50A, 75A and 100A class and is now introducing 1000V, 20A, 30A, 50A, 100A and 150A class versions for high frequency PWM inverter. Direct connection to a 460V power supply is possible. This series consists of 2 highly reliable diffusion planar transistors and the associated diode chips combined into one package.

The main feature of this new series is their degree of electrical isolation. Modules are already electrically-isolated between the package and the lead terminals and so isolation of each individual component is not required. Use of these power modules will lead to the simplification of circuits, permit more compact layouts and reduce manufacturing time and costs—all important items in this energy conservation age.

### Features

- $V_{CBO}$ : 1000V,  $V_{CEX(sus)}$ : 1000V Direct connection to a line circuit of 460V.
- **The electrically-isolated package**  
FUJI modules are electrically-isolated. In ordinary discrete transistors the collector carries base plate potential.

This is not so with FUJI power modules, so that several FUJI power modules can be mounted on the same cooling fin without interfering with their individual functions. This permits better utilization of heat sinks and savings in system size and weight.

### Simple connections

The screw-type collector, emitter and base terminals are all on the same plane. Groups of modules can be bus bar connected.

### Free wheel diodes

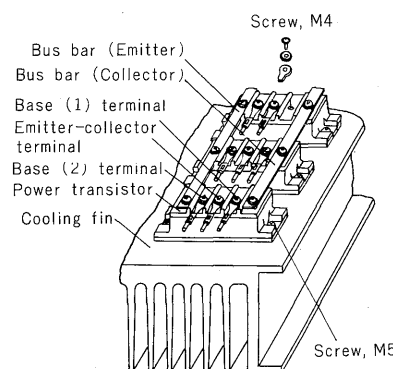
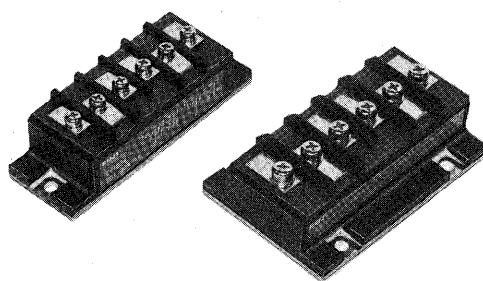
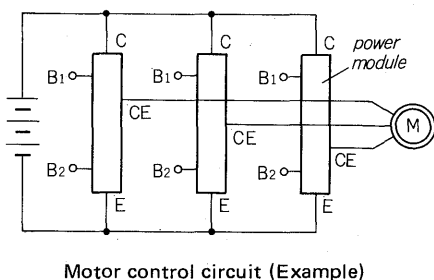
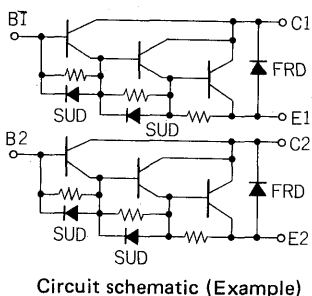
FUJI power modules incorporate built-in free wheel diodes for higher efficiency. Circuit designs can be simplified with reductions in both size and weight.

### Planar reliability

FUJI modules employ highly reliable triple diffusion planar transistors. Their dependable uniform characteristics set new standards in operational efficiency.

### Applications

FUJI modules are entirely new products which will answer many needs in military aerospace, industrial and consumer applications. They are recommended as the off-line power supplies in computers and as motor speed control inverters.



Example for 3 $\phi$  inverter connection

### Specifications

Type	$V_{CBO}$ (V)	$V_{CBO}$ (V)	$V_{CEX(sus)}$ (V)	$I_C$ (A)	$P_C$ (W)	$h_{FE}$ Min.	$I_C$ (A)	$V_{CE}$ (V)	Switching time		
									$t_{on}$ ( $\mu s$ )	$t_s$ ( $\mu s$ )	$t_f$ ( $\mu s$ )
EV1274	1000	1000	1000	20	200	100	20	5	3	12	2
EV1277	1000	1000	1000	30	300	100	30	5	3	12	2
EV1234	1000	1000	1000	50	500	100	50	5	3	15	2
EV1235	1000	1000	1000	50	500	100	50	5	3	14	2
ET1273*	1000	1000	1000	50	400	100	50	5	3	14	2
ET1255*	1000	1000	1000	100	1000	100	100	5	3	14	2
EV1255	1000	1000	1000	100	800	200	100	5	3	15	2
EV1298	1000	1000	1000	150	1000	70	150	5	3	15	2

Notes: Power modules for six-step inverter and non-isolated packages with 20A, 30A, 50A and 200A are also available.

\* Single transistor type