

6MBI50J-120

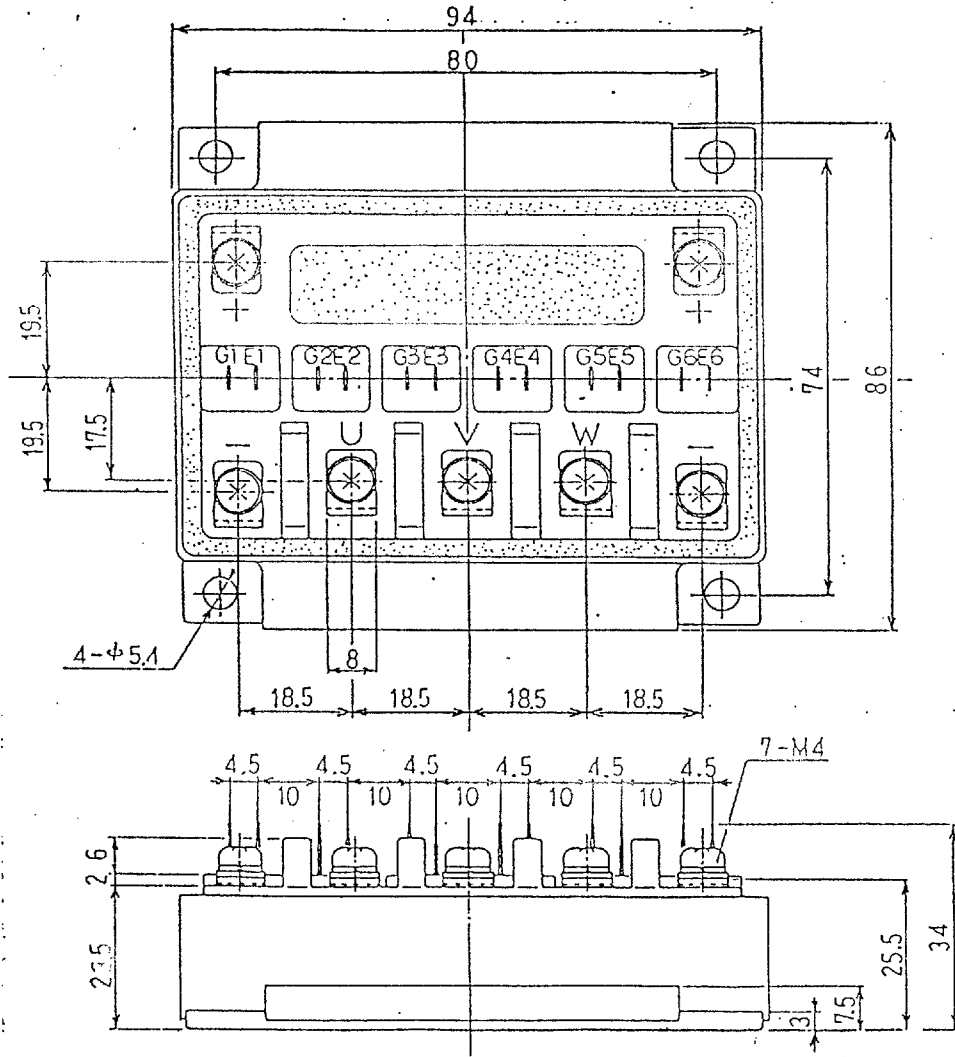
(TENTATIVE)

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1. Outline Drawing

Unit : mm

\* Isolation Voltage : AC 2500 V 1 minute



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2) Revised base 2-11, Feb. 2 '93 A. Yamaguchi  
b) Revised page 3, 7, 8 Apr. 5 '93 A. Yamaguchi, T. U.

DATE	NAME	APPROVED	Fuji Electric Co., Ltd.	
Dec-11-'92	H. Arikawa		DWG. NO.	MT5 F 4956
Dec-15-'92	T. Miyasaka			
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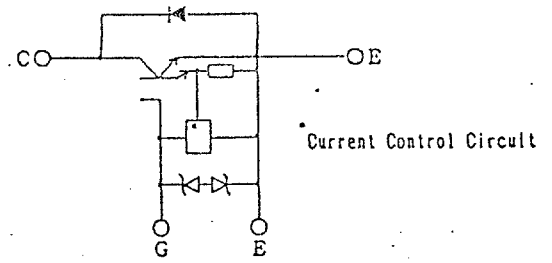
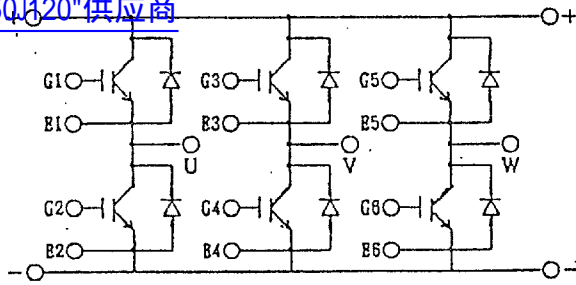
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## 2. Equivalent Circuit of Module

## 3. Equivalent Circuit

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## 4. Absolute Maximum Ratings (Tj=25°C)

Items	Symbols	Ratings	Units
Collector-emitter voltage	$V_{CES}$	1 2 0 0	V
Gate-emitter voltage	$V_{GES}$	$\pm 2 0$	V
Collector current	Continuous	$I_c$	5 0
	1 ms	$I_c$ pulse	1 0 0
		$-I_c$	5 0
	1 ms	$-I_c$ pulse	1 0 0
Max.power dissipation	PC	3 2 0	W
Operating temperature	Tj	+1 5 0	°C
Storage temperature	Tstg	-4 0 ~ +1 2 5	°C
Isolation voltage	Vis	AC 2 5 0 0 (1min)	V
Screw Torque	Mounting * 1	3. 5	N · m
	Terminals * 2	1. 7	

Note : \*1 Recommendable Value : 2.5 ~ 3.5 N · m (M5)  
 \*2 Recommendable Value : 1.3 ~ 1.7 N · m (M4)

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5. Static electrical characteristics ( at Tj=25°C unless otherwise specified )

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Items	Symbols	Characteristics			Conditions		Units
		min.	typ.	max.			
Zero gate voltage collector current	I <sub>ces</sub>			1.0	Tj= 25°C	V <sub>GE</sub> =0V	mA
					Tj=125°C	V <sub>CE</sub> =1200V	mA
Gate-emitter leakage current	I <sub>GES</sub>			15	V <sub>CE</sub> = 0 V	V <sub>GE</sub> =±20V	μA
Gate-emitter threshold voltage	V <sub>GE(th)</sub>		5.0		V <sub>CE</sub> =20V	I <sub>C</sub> =50mA	V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>		2.2		V <sub>GE</sub> =15V	I <sub>C</sub> =50A	V

6. Dynamic ratings ( at Tj=25°C unless otherwise specified )

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Input capacitance	C <sub>ies</sub>		6000		V <sub>GE</sub> = 0 V	p F
Output capacitance	C <sub>oes</sub>		-		V <sub>CE</sub> =10V	
Reverse transfer capacitance	C <sub>res</sub>		-		f = 1 MHz	
Turn-on time	t <sub>on</sub>		0.70		V <sub>CC</sub> =600V I <sub>C</sub> = 50A V <sub>GE</sub> =±15V R <sub>g</sub> = 24Ω	μ s
	t <sub>r</sub>		0.30			
Turn-off time	t <sub>off</sub>		0.95			
	t <sub>f</sub>		0.20			

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7. Characteristics of reverse diode ( at Tj=25°C unless otherwise specified )

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Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Diode forward on-voltage	V <sub>F</sub>		2.5		I <sub>F</sub> = 50A V <sub>GE</sub> = 0V	V
Reverse recovery time	t <sub>rr</sub>			350	I <sub>F</sub> = 50A -di/dt = 150A/μs	ns

8. Thermal resistance characteristics

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Thermal resistance	R <sub>th(j-c)</sub>			0.391	IGBT(MBT)	°C/W
	R <sub>th(j-c)</sub>			0.749	Diode	
	* R <sub>th(c-f)</sub>		0.05		the base to cooling fin	

\* This is the value which is defined mounting on the additional cooling fin with thermal compound.

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