

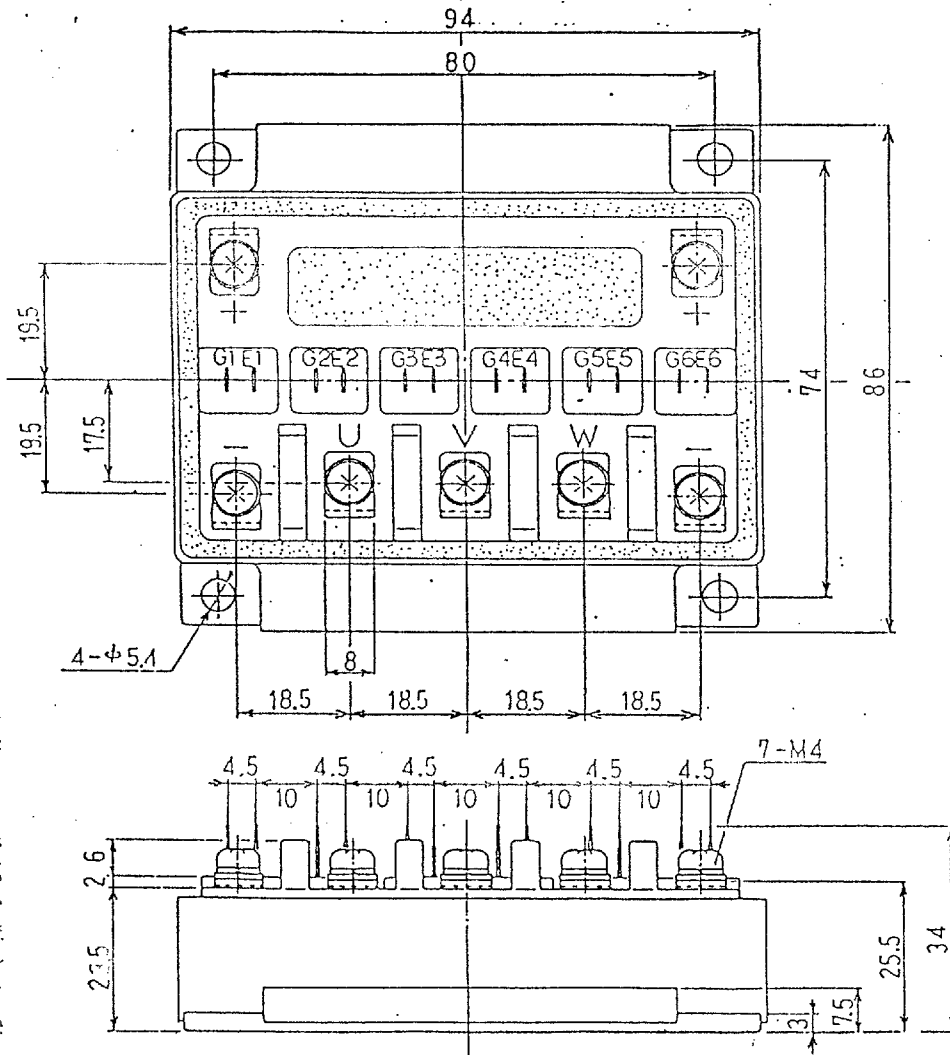
6MBI50J-120

(TENTATIVE)

1. Outline Drawing

Unit : mm

* Isolation Voltage : AC 2500 V 1 minute



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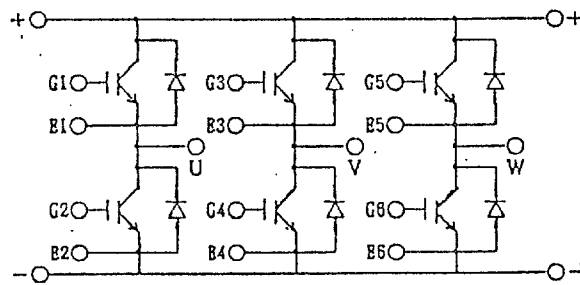
2) Revised base 2-11, Feb. 2 '93 A. Yamaguchi
b) Revised page 3, 7, 8 Apr. 5 '93 A. Yamaguchi, T. U.

	DATE	NAME	APPROVED	Fuji Electric Co., Ltd.	
DRAWN	Dec-11-'92	H. Arikawa		DWG. NO.	MT5 F 4956
CHECKED	Dec-15-'92	T. Miyasaka			
REVISIONS					

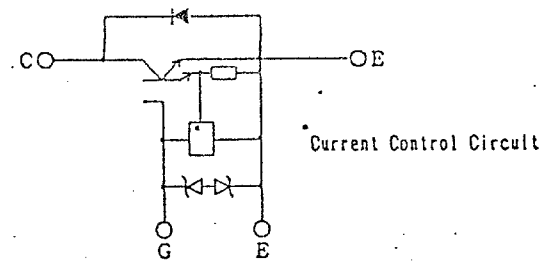
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2. Equivalent Circuit of Module



3. Equivalent Circuit



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}	± 20	V
Collector current	Continuous	I_c	50	A
	1 ms	I_c pulse	100	
		$-I_c$	50	
	1 ms	$-I_c$ pulse	100	
Max.power dissipation		PC	320	W
Operating temperature		Tj	+150	°C
Storage temperature		Tstg	-40~+125	°C
Isolation voltage		Vis	AC 2500 (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 $T_j=25^{\circ}\text{C}$ unless otherwise specified)

Items	Symbols	Characteristics			Conditions		Units
		min.	typ.	max.			
Zero gate voltage collector current	I_{CES}			1.0	$T_j = 25^{\circ}\text{C}$	$V_{GE}=0\text{V}$	mA
					$T_j=125^{\circ}\text{C}$	$V_{CE}=1200\text{V}$	mA
Gate-emitter leakage current	I_{GES}			15	$V_{CE}=0\text{V}$ $V_{GE}=\pm 20\text{V}$		μA
Gate-emitter threshold voltage	$V_{GE(th)}$		5.0		$V_{CE}=20\text{V}$ $I_C=50\text{mA}$		V
Collector-emitter saturation voltage	$V_{CE(sat)}$		2.2		$V_{GE}=15\text{V}$ $I_C=50\text{A}$		V

6. Dynamic ratings (at $T_j=25^{\circ}\text{C}$ unless otherwise specified)

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Input capacitance	C_{ies}		6000		$V_{GE}=0\text{V}$	pF
Output capacitance	C_{oes}		—		$V_{CE}=10\text{V}$	
Reverse transfer capacitance	C_{res}		—		$f=1\text{MHz}$	
Turn-on time	t_{on}		0.70		$V_{CC}=600\text{V}$ $I_C=50\text{A}$ $V_{GE}=\pm 15\text{V}$ $R_g=24\Omega$	μs
	t_r		0.30			
Turn-off time	t_{off}		0.95			
	t_f		0.20			

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7. Characteristics of reverse diode (at $T_j=25^{\circ}\text{C}$ unless otherwise specified)

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Diode forward on-voltage	V _F		2.5		I _F = 50A V _{GE} = 0V	V
Reverse recovery time	t _{rr}			350	I _F = 50A -di/dt = 150A/ μs	n s

8. Thermal resistance characteristics

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Thermal resistance	R _{th(j-c)}			0.391	IGBT(MBT)	$^{\circ}\text{C}/\text{W}$
	R _{th(j-c)}			0.749	Diode	
	※ R _{th(c-f)}		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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