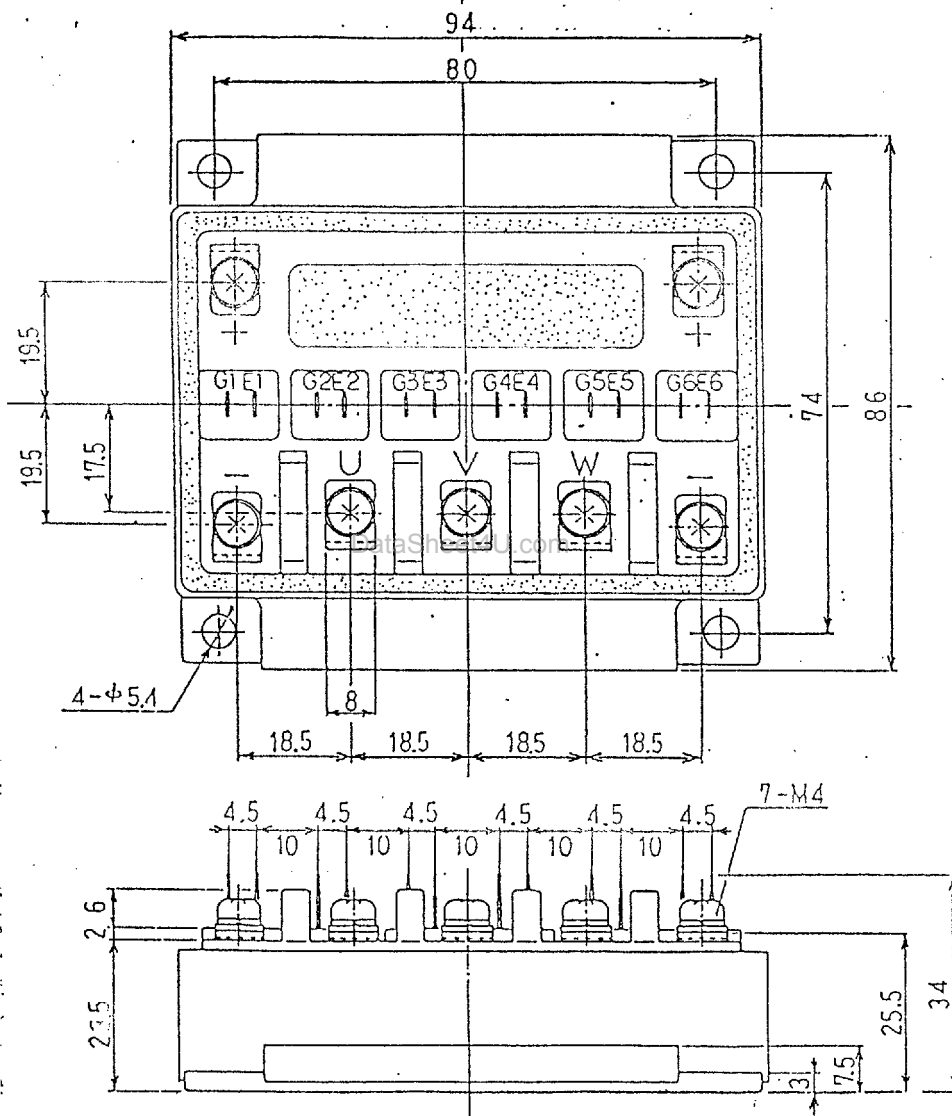


6MBI50J-120 (TENTATIVE)

1. Outline Drawing

Unit : mm

* Isolation Voltage : AC 2500 V 1 minute



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2) Revised date 2-11-93 A. Yamaguchi
 b) Revised page 3, 7, 8 Apr. 5, '93 A. Yamaguchi

	DATE	NAME	APPROVED
DRAWN	Dec-11-'92	H. Arikawa	
CHECKED	Dec-15-'92	T. Miyasaka	<i>[Signature]</i>

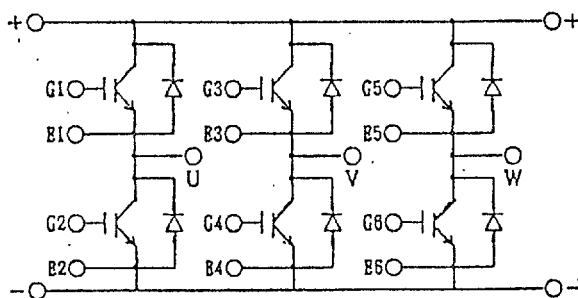
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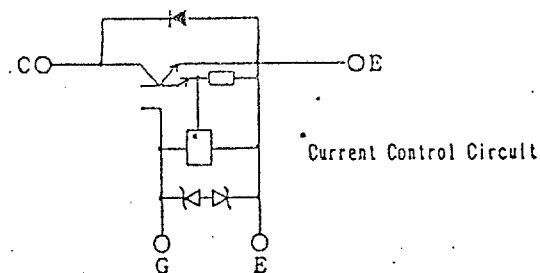
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b

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}	$\pm 2 0$	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 $T_j=25^\circ\text{C}$ 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 Tj=25°C unless otherwise specified)

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Diode forward on-voltage	V _F		2.5		I _F = 50A V _{CE} = 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)	°C/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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