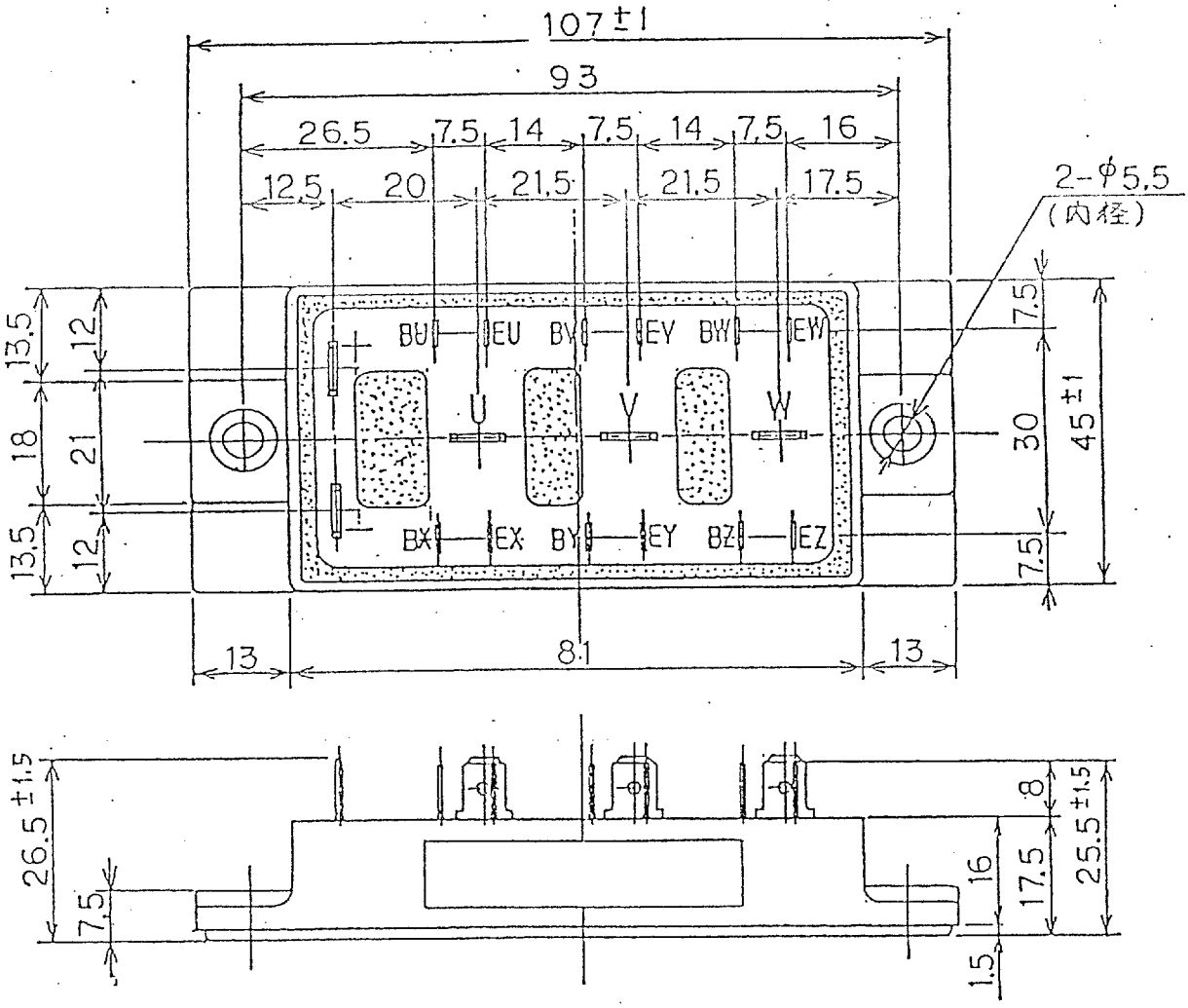
6MBI125J-120 (TENTATIVE)

1. Outline Drawing

Unit : mm

* Isolation Voltage : AC 2500 V 1 minute



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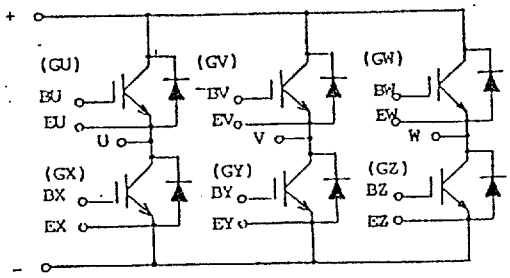
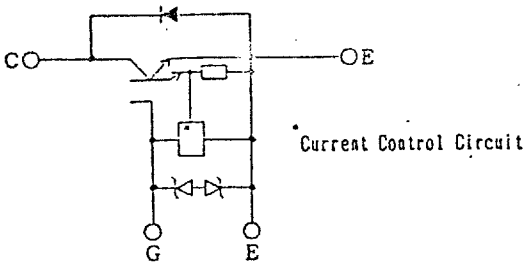
2. Equivalent Circuit



3. Equivalent Circuit



4. Absolute Maximum Ratings (Tj=25 ℃)

Items		Symbols	Ratings	Units
Collector-emitter voltage		V_{CES}	1200	V
Gate -emitter voltage		V_{GES}	±20	V
Collector current	Continuous	I_C	25	A
	1 ms	I_C pulse	50	
		$-I_C$	25	
	1 ms	$-I_C$ pulse	50	
Max.power dissipation		PC	160	W
Operating temperature		Tj	+150	℃
Storage temperature		Tstg	-40 ～ +125	℃
Isolation voltage		Vis	AC 2500 (1 min)	V
Screw Torque		Mounting *1	3.5	N・m

Note : *1 Recommendable Value : 2.5 ～ 3.5 N・m (M5)

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

Items	Symbols	Characteristics min.	Characteristics typ.	Characteristics max.	Conditions		Units
Zero gate voltage collector current	I_{CES}			1.0	Tj= 25°C	V_{GE}= 0V, V_{CE} = 1200V	mA
					Tj=125°C		mA
Gate-emitter leakage current	I_{GES}			15	V_{CE}= 0 V, V_{GE}= ± 2 0 V		μA
Gate-emitter threshold voltage	$V_{GE(th)}$		5.0		V_{CE}= 2 0 V, I_C = 2 5 mA		V
Collector-emitter saturation voltage	$V_{CE(sat)}$		2.2		V_{GE}= 1 5 V, I_C = 2 5 A		V

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

Items	Symbols	Characteristics min.	Characteristics typ.	Characteristics max.	Conditions	Units
Input capacitance	Cies		3000		V_{GE}= 0 V, V_{CE}= 1 0 V, f = 1 MHz	pF
Output capacitance	Coes		—			
Reverse transfer capacitance	Cres		—			
Turn-on time	ton		0.65		V_{CC}=600V, I_C =25A, V_{GE}=±15V, R_G =50Ω	μs
	tr		0.30			
Turn-off time	toff		0.90			
	tf		0.20			

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

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Diode forward on-voltage	VF		2.5		IF=25A VGE=0V	V
Reverse recovery time	trr			350	IF=25A -di/dt=75A/μs	ns

8. Thermal resistance characteristics

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Thermal resistance	Rth(j-c)			0.781	IGBT	℃/W
	Rth(j-c)			1.870	Diode	
	※ Rth(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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