

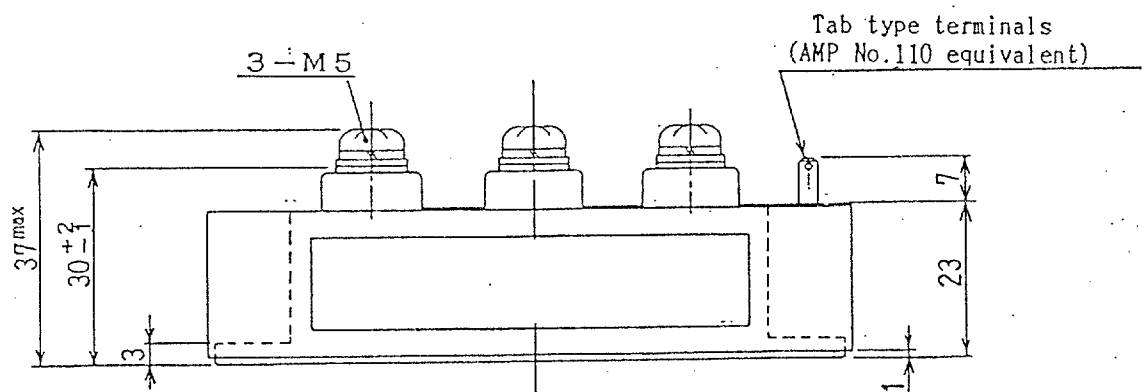
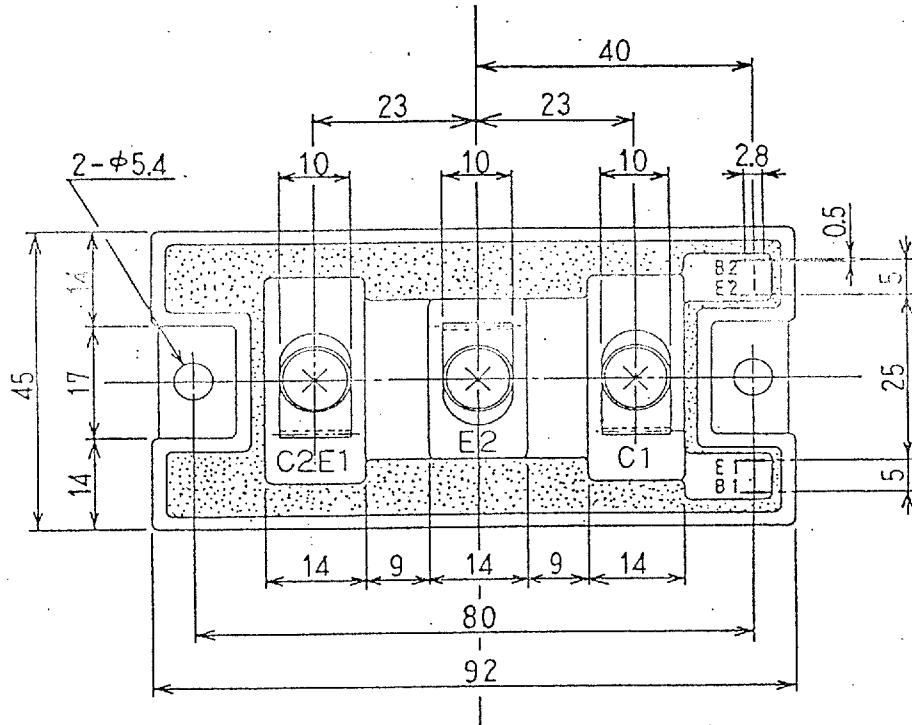
Ratings and characteristics of Fuji IGBT (MBT) Module

2MBI200J-060 (TENTATIVE)

1. Outline Drawing

Unit : mm

* Isolation Voltage : AC 2500 V 1 minute



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2) Revised page 2.4 9.10. Apr 6-93 A.Yamaguchi

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CHECKED	Jan -25 -93	T.Hijiyasaka	

Fuji Electric Co., Ltd.

DWG. NO.

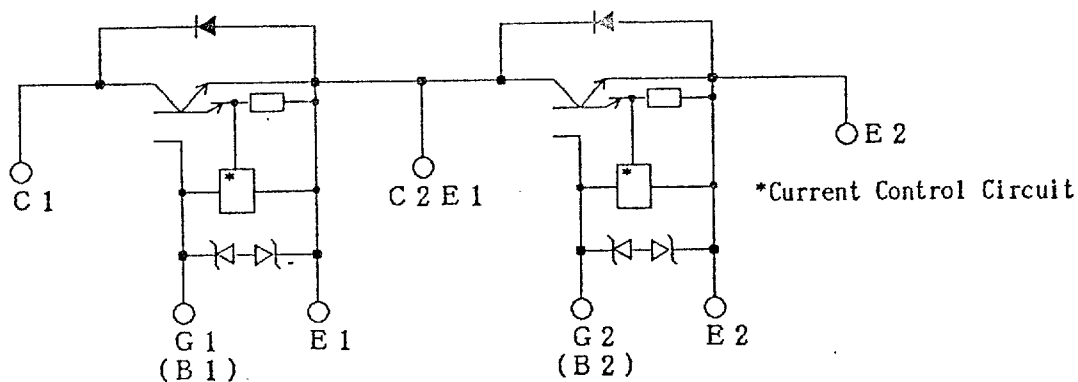
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2. Equivalent Circuit



3. Absolute Maximum Ratings (Tj=25 °C)

Items		Symbols	Ratings	Units
Collector-emitter voltage		V_{CES}	600	V
Gate-emitter voltage		V_{GES}	± 20	V
Collector current	Continuous	I_c	200	A
	1 ms	I_c pulse	400	
		$-I_c$	200	
	1 ms	$-I_c$ pulse	400	
Max.power dissipation		PC	600	W
Operating temperature		Tj	+150	°C
Storage temperature		Tstg	-40 ~ +125	°C
Isolation voltage		Vis	AC 2500 (1 min)	V
Screw Torque		Mounting * 1	3.5	N · m
		Terminals * 1	3.5	

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

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4. 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}			2.0	$T_j = 25^\circ\text{C}$	$V_{GE} = 0\text{V}$	mA
					$T_j = 125^\circ\text{C}$	$V_{CE} = 600\text{V}$	mA
Gate-emitter leakage current	I_{GES}			30	$V_{CE} = 0\text{V}$ $V_{GE} = \pm 20\text{V}$		μA
Gate-emitter threshold voltage	$V_{GE(th)}$	3.5	5.0	6.5	$V_{CE} = 20\text{V}$ $I_C = 200\text{mA}$		V
Collector-emitter saturation voltage	$V_{CE(sat)}$		1.7	2.5	$V_{GE} = 15\text{V}$ $I_C = 200\text{A}$		V

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

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Input capacitance	Cies		12800		V _{GE} =0 V	p F
Output capacitance	Coes				V _{CE} =10 V	
Reverse transfer capacitance	Cres				f = 1 MHz	
Turn-on time	ton		0.6	1.2	V _{CC} =300V I _C =200A V _{GE} =±15V R _G =9.1Ω	μ s
	tr		0.2	0.6		
Turn-off time	toff		0.8	1.5		
	tf		0.15	0.35		

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Turn-off time	toff		0.8	1.5	$R_g = 9.1\Omega$	
	tf		0.15	0.35		

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6. 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		2.3	3.0	I F = 200A V GE = 0V	V
Reverse recovery time	t r r			300	I F = 200A -di/dt = 600A/ μs	ns

7. Thermal resistance characteristics

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Thermal resistance	R th(j-c)			0.208	IGBT	$^{\circ}\text{C}/\text{W}$
	R th(j-c)			0.400	Diode	
	※ R th(c-f)		0.025		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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