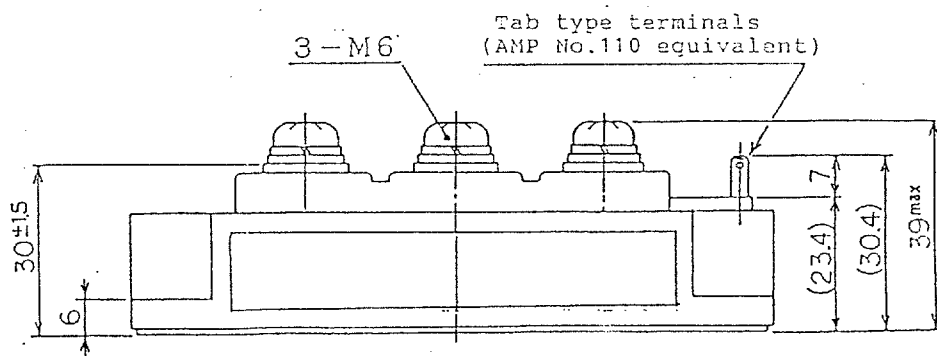
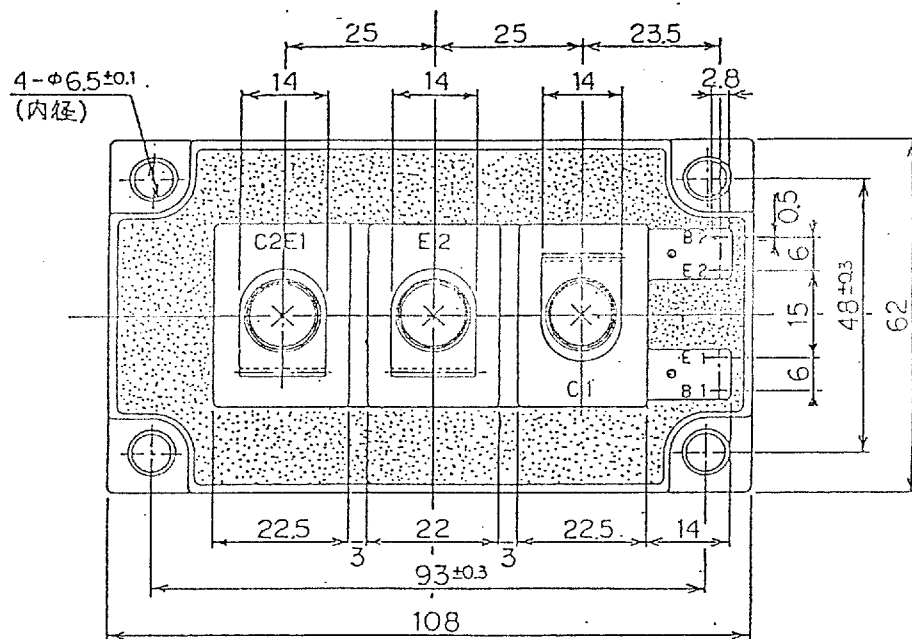


2MB1200J-120 (TENTATIVE)

1. Outline Drawing

Unit : mm

* Isolation Voltage : AC 2500 V 1 minute



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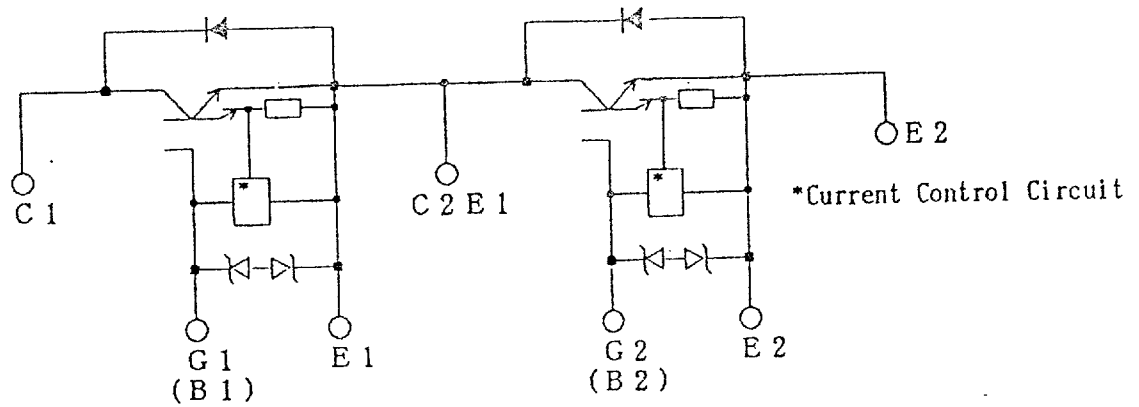
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DRAWN Apr - 5 - '93	A. Yamaguchi		DWG NO	MTS F5159
CHECKED Apr - 5 - '93	T. Miyasaka			

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2. Equivalent Circuit



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

Items		Symbols	Ratings	Units
Collector-emitter voltage		V_{CES}	1200	V
Gate-emitter voltage		V_{GES}	± 20	V
Collector current	Continuous	I_c	200	A
	1 ms	$I_{c \text{ pulse}}$	400	
		$-I_c$	200	
	1 ms	$-I_{c \text{ pulse}}$	400	
Max.power dissipation		PC	1280	W
Operating temperature		Tj	+150	°C
Storage temperature		Tstg	40 ~ +125	°C
Isolation voltage		V_{is}	AC 2500 (1 min)	V
Screw Torque	Mounting *1		3.5	N · m
	Terminals *2		4.5	

Note : *1 Recommendable Value : 2.5 ~ 3.5 N · m (M5)
 *2 Recommendable Value : 3.5 ~ 4.5 N · m (M6)

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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
					$T_j = 125^{\circ}\text{C}$	$V_{CE} = 1200\text{V}$	mA
Gate-emitter leakage current	I_{GES}			30	$V_{CE} = 0\text{V}$ $V_{GE} = \pm 20\text{V}$		μA
Gate-emitter threshold voltage	$V_{GE(th)}$		5.0		$V_{CE} = 20\text{V}$ $I_C = 200\text{mA}$		V
Collector-emitter saturation voltage	$V_{CE(sat)}$		2.2		$V_{GE} = 15\text{V}$ $I_C = 200\text{A}$		V

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

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Input capacitance	C_{ies}		24000		$V_{GE} = 0\text{V}$	
Output capacitance	C_{oes}		—		$V_{CE} = 10\text{V}$	pF
Reverse transfer capacitance	C_{res}		—		$f = 1\text{MHz}$	
Turn on time	t_{on}		0.90		$V_{CC} = 600\text{V}$ $I_C = 200\text{A}$ $V_{GE} = \pm 15\text{V}$ $R_G = 4.7\Omega$	μs
	t_r		0.30			
Turn-off time	t_{off}		1.10			
	t_f		0.20			

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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		2.5		$I_F=200\text{A}$ $V_{GE}=0\text{V}$	V
Reverse recovery time	t_{rr}			350	$I_F=200\text{A}$ $-di/dt=600\text{A}/\mu\text{s}$	ns

7. Thermal resistance characteristics

Items	Symbols	Characteristics			Conditions	Units
		min.	typ.	max.		
Thermal resistance	$R_{th(j-c)}$			0.098	IGBT	$^{\circ}\text{C}/\text{W}$
	$R_{th(j-c)}$			0.187	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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