

SPECIFICATION

Device Name : IGBT MODULE

Type Name : 2MBI200U4B-120

Spec. No. : MS5F 6032

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	DATE	NAME	APPROVED	Fuji Electric Device Technology Co., Ltd.		
DRAWN	Feb- 09 -'05	S.Miyashita	Y.Seki	DWG.NO.	MS5F6032	1 / 13
CHECKED	Feb- 09 -'05	T.Miyasaka				
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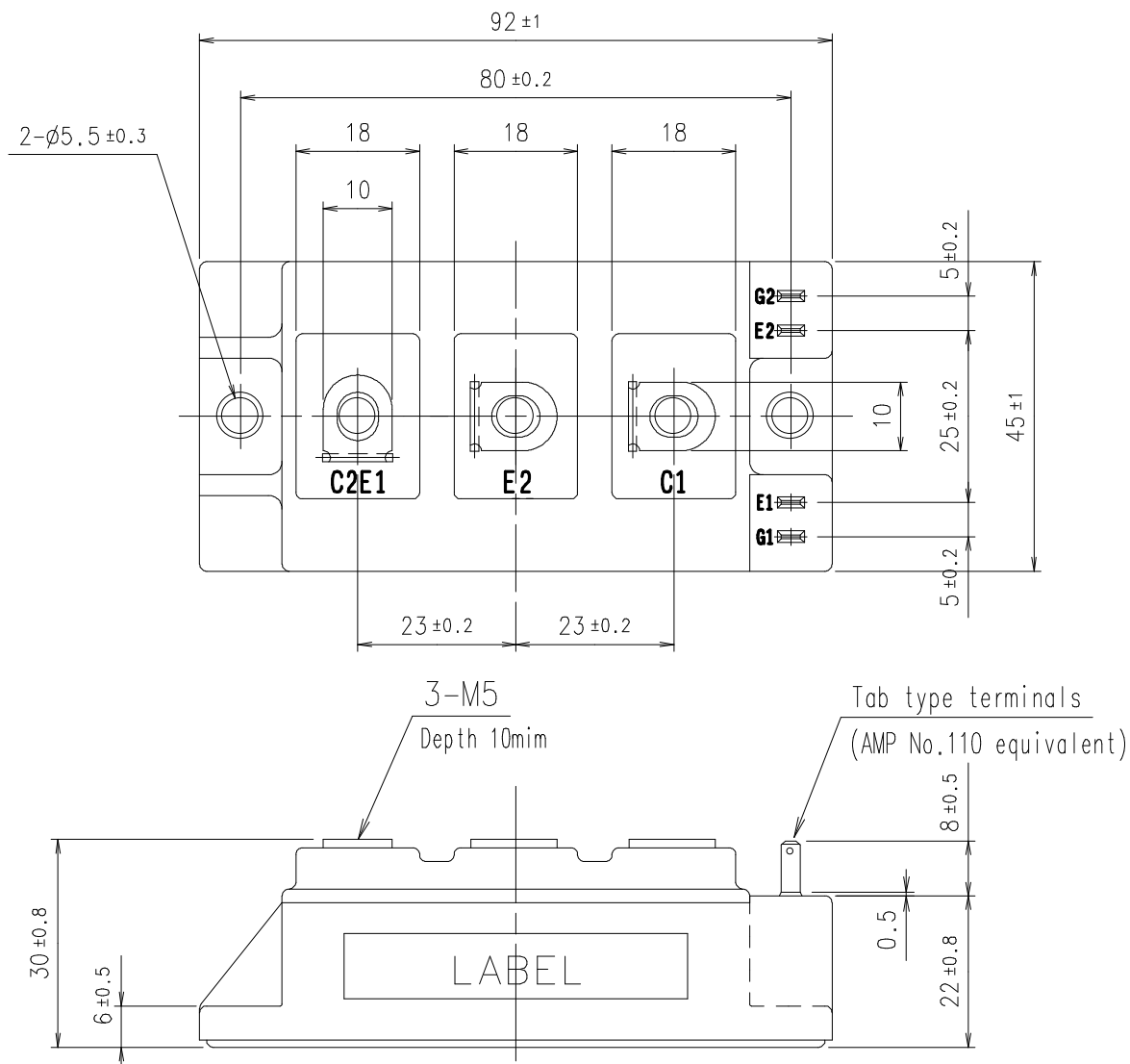
Revised Records

Date	Classi- fication	Ind.	Content	Applied date	Drawn	Checked	Checked	Approved
Feb.-09-'05	Enactment	—	—————	Issued date	—	T.Miyasaka	K.Yamada	Y.Seki

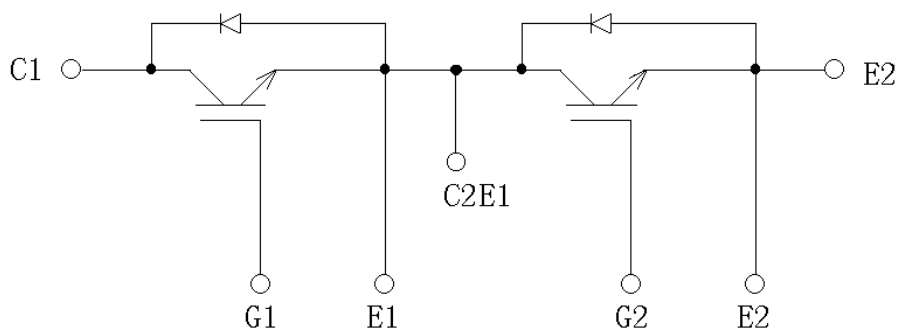
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2MBI200U4B-120

1. Outline Drawing (Unit : mm)



2. Equivalent circuit



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3. Absolute Maximum Ratings (at Tc= 25°C unless otherwise specified)

Items		Symbols	Conditions	Maximum Ratings	Units
Collector-Emitter voltage		V _{CE} S		1200	V
Gate-Emitter voltage		V _{GE} S		±20	V
Collector current	I _c	Continuous	T _c =25°C	300	A
			T _c =80°C	200	
	I _{cp}	1ms	T _c =25°C	600	
			T _c =80°C	400	
	-I _c			200	
-I _c pulse	1ms		400		
Collector Power Dissipation		P _c	1 device	1040	W
Junction temperature		T _j		+150	°C
Storage temperature		T _{stg}		-40 to +125	
Isolation voltage	between terminal and copper base (*1)	V _{iso}	AC : 1min.	2500	VAC
Screw Torque	Mounting (*2) Terminals (*2)	-		3.5	N m

(*1) All terminals should be connected together when isolation test will be done.

(*2) Recommendable Value : 2.5 to 3.5 Nm (M5)

4. Electrical characteristics (at Tj= 25°C unless otherwise specified)

Items	Symbols	Conditions	Characteristics			Units	
			min.	typ.	max.		
Zero gate voltage collector current	I _{CE} S	V _{CE} =1200V V _{GE} =0V	-	-	2.0	mA	
Gate-Emitter leakage current	I _{GES}	V _{CE} =0V V _{GE} =±20V	-	-	400	nA	
Gate-Emitter threshold voltage	V _{GE(th)}	V _{CE} =20V I _c =200mA	4.5	6.5	8.5	V	
Collector-Emitter saturation voltage	V _{CE(sat)} (terminal)	I _c =200A V _{GE} =15V	T _j =25°C	-	2.10	2.25	V
			T _j =125°C	-	2.30	-	
	V _{CE(sat)} (chip)		T _j =25°C	-	1.90	2.05	
			T _j =125°C	-	2.10	-	
Input capacitance	C _{ies}	V _{CE} =10V, V _{GE} =0V, f=1MHz	-	22	-	nF	
Turn-on time	t _{on}	V _{cc} =600V	-	0.32	1.20	us	
	t _r	I _c =200A	-	0.10	0.60		
	t _{r(i)}	V _{GE} =±15V	-	0.03	-		
Turn-off time	t _{off}	R _G =3.0Ω	-	0.41	1.00		
	t _f		-	0.07	0.30		
Forward on voltage	V _F (terminal)	I _F =200A V _{GE} =0V	T _j =25°C	-	1.85	2.00	V
			T _j =125°C	-	1.95	-	
	V _F (chip)		T _j =25°C	-	1.65	1.80	
			T _j =125°C	-	1.75	-	
Reverse recovery time	t _{rr}	I _F =200A	-	-	0.35	us	
Lead resistance, terminal-chip (*3)	R _{lead}		-	0.97	-	mΩ	

(*3) Biggest internal terminal resistance among arm.

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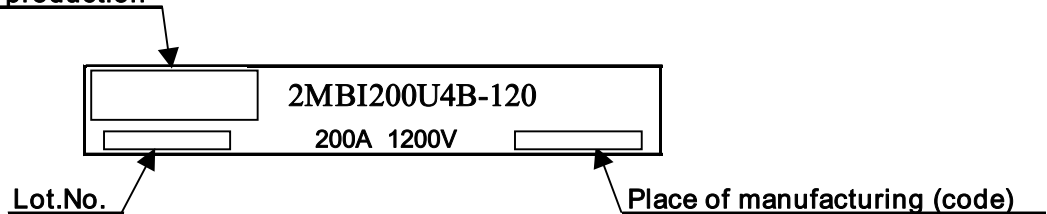
5. Thermal resistance characteristics

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	max.	
Thermal resistance(1 device)	Rth(j-c)	IGBT	-	-	0.12	°C/W
		FWD	-	-	0.20	
Contact Thermal resistance (1 device) (*4)	Rth(c-f)	with Thermal Compound	-	0.025	-	

(*4) This is the value which is defined mounting on the additional cooling fin with thermal compound.

6. Indication on module

Logo of production



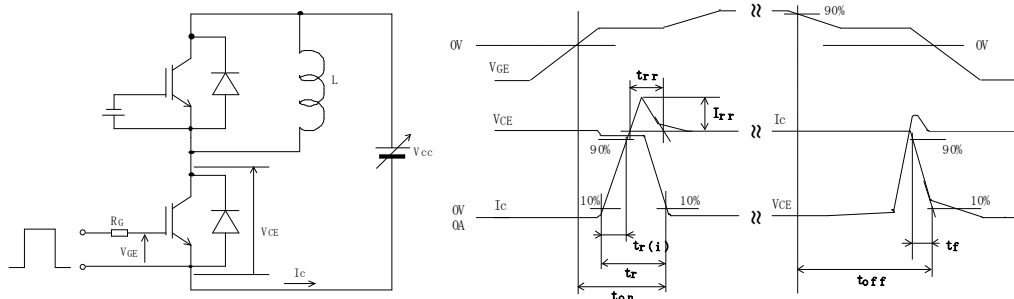
7. Applicable category

This specification is applied to IGBT-Module named 2MBI200U4B-120.

8. Storage and transportation notes

- The module should be stored at a standard temperature of 5 to 35°C and humidity of 45 to 75% .
- Store modules in a place with few temperature changes in order to avoid condensation on the module surface.
- Avoid exposure to corrosive gases and dust.
- Avoid excessive external force on the module.
- Store modules with unprocessed terminals.
- Do not drop or otherwise shock the modules when transporting.

9. Definitions of switching time



10. Packing and Labeling

Display on the packing box

- Logo of production
- Type name
- Lot No
- Products quantity in a packing box