

2MBI200HH-120-50

IGBT Modules

HIGH SPEED IGBT MODULE 1200V / 200A / 2 in one package

■ Features

High speed switching Voltage drive Low Inductance module structure

Applications

Soft-switching Application Industrial machines, such as Welding machines



■ Maximum Ratings and Characteristics

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

Items	Symbols	Conditions	Conditions		Units	
Collector-Emitter voltage	Vces			1200	V	
Gate-Emitter voltage	V _{GES}			±20	V	
Collector current	Ic	Continuous	Tc=25°C	300		
			Tc=80°C	200		
	Ic pulse	1ms	Tc=25°C	600	^	
			Tc=80°C	400	Α	
	-lc			75		
	-lc pulse	1ms	1ms			
Collector Power Dissipation	Pc	1 device	1 device		W	
Junction temperature	Tj				°C	
Storage temperature	Tstg					
Isolation voltage Between terminal and copper base (*1)	Viso	AC : 1min.		2500	VAC	
Serow torque Mounting (*2)				3.5	N m	
Screw torque Terminals (*3)	7-			4.5	IN III	

Note *1: All terminals should be connected together when isolation test will be done.

Note *2: Recommendable Value : Mounting 2.5 to 3.5 Nm (M5 or M6) Note *3: Recommendable Value : Terminals 3.5 to 4.5 Nm (M6)

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

Items	Symbols	Conditions		Characteristics			Units
	Symbols			min.	typ.	max.	Units
Zero gate voltage collector current	Ices	V _{GE} = 0V, V _{CE} = 1200V		-	-	2.0	mA
Gate-Emitter leakage current	Iges	$V_{CE} = 0V$, $V_{GE} = \pm 20V$		-	-	400	nA
Gate-Emitter threshold voltage	V _{GE (th)}	V _{CE} = 20V, I _C = 200mA		5.7	6.2	6.7	V
Collector-Emitter saturation voltage	V _{CE} (sat)		Tj=25°C	-	3.35	3.65	V
	(terminal)	V _{GE} = 15V I _C = 200A	Tj=125°C	-	4.25	-	
	V _{CE} (sat)		Tj=25°C	-	3.10	3.40	
	(chip)		Tj=125°C	-	4.00	-	
Input capacitance	Cies	V _{CE} = 10V, V _{GE} = 0V, f = 1MHz		-	18	-	nF
Turn-off time	toff	V _{CC} = 600V, I _C = 200A V _{GE} = ±15V, R _G = 1.6Ω		-	0.30	0.60	
	tf	Ls = 20nH			0.05	0.20	μs
Forward on voltage	VF		Tj=25°C	-	1.85	2.30	V
	(terminal)	V _{GE} = 0V I _F = 75A	Tj=125°C	-	2.00	-	
	V _F		Tj=25°C	-	1.70	2.15	
	(chip)		Tj=125°C	-	1.85	-	
Lead resistance, terminal-chip (*4)	R lead		•	-	1.20	-	mΩ

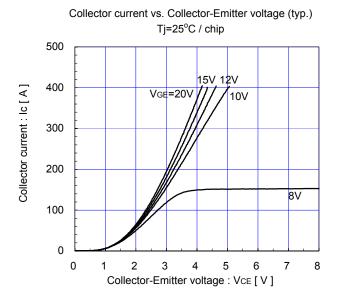
Note *4: Biggest internal terminal resistance among arm.

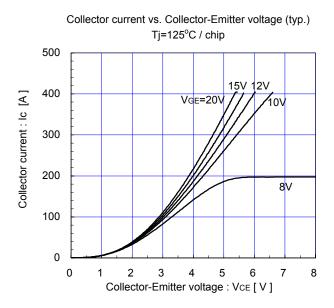
● Thermal resistance characteristics

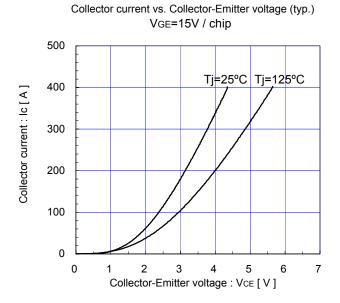
Items	Symbols	Conditions	Characteristics			Units
items		Conditions	min.	typ.	max.	Ullits
Thermal resistance (1device)	Rth(j-c)	IGBT	-	-	0.07	°C/W
		FWD	-	-	0.46	
Contact Thermal resistance (1 device) (*5)	Rth(c-f)	with Thermal Compound		0.025	-	

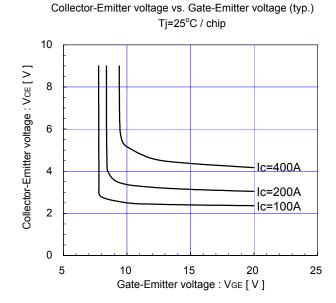
Note *5: This is the value which is defined mounting on the additional cooling fin with thermal compound.

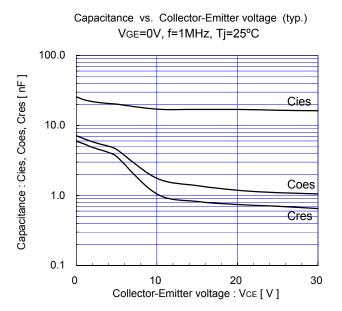
■ Characteristics (Representative)

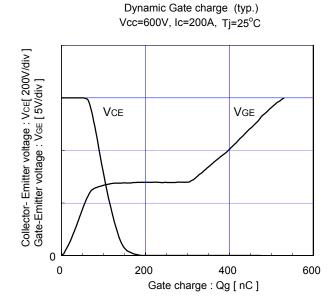


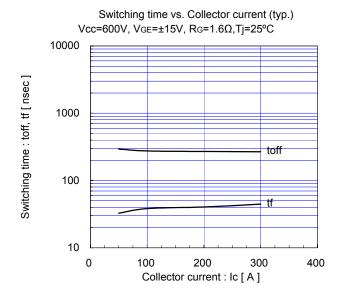


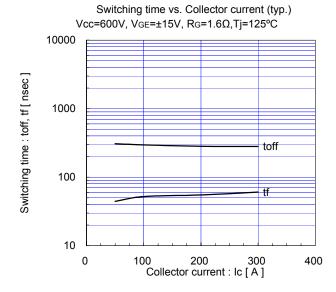


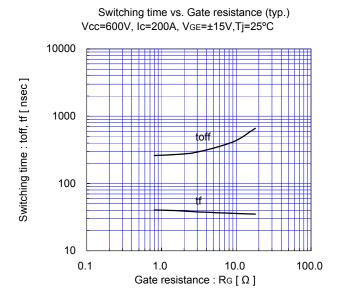


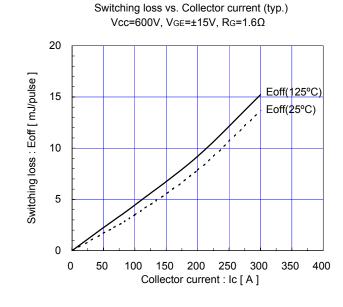


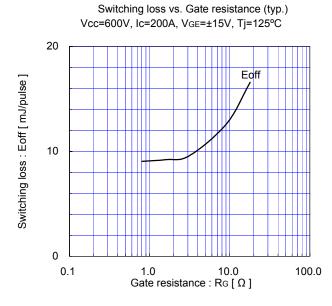


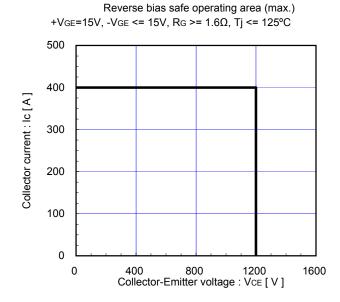




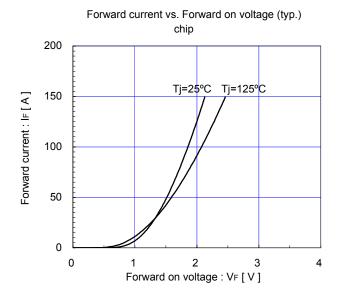


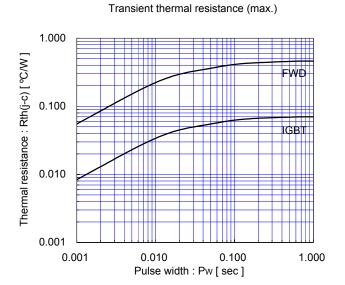






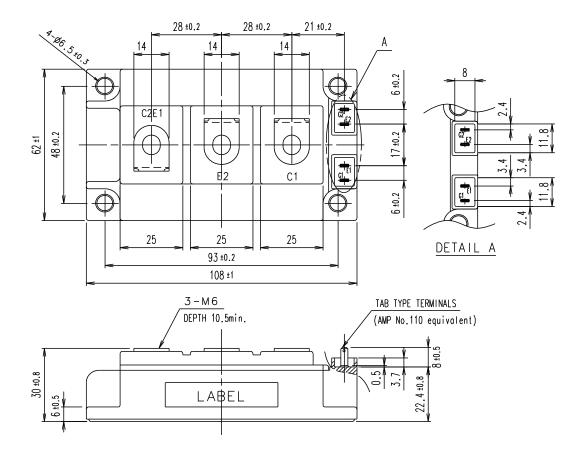
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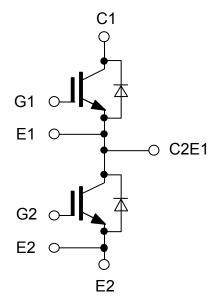


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■ Outline Drawings, mm



■ Equivalent Circuit Schematic



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