

2MBI150NC-120

IGBT Module

1200V / 150A 2 in one-package

■ Features

- High speed switching
- Voltage drive
- Low inductance module structure

■ Applications

- Inverter for Motor drive
- AC and DC Servo drive amplifier
- Uninterruptible power supply
- Industrial machines, such as Welding machines

■ Maximum ratings and characteristics

● Absolute maximum ratings (at $T_c=25^{\circ}\text{C}$ unless otherwise specified)

Item	Symbol	Rating	Unit
Collector-Emitter voltage	V_{CES}	1200	V
Gate-Emitter voltage	V_{GES}	± 20	V
Collector current	Continuous	I_c	150
	1ms	I_c pulse	300
	Continuous	$-I_c$	150
	1ms	$-I_c$ pulse	300
Max. power dissipation	P_c	1100	W
Operating temperature	T_j	$+150$	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-40 to $+125$	$^{\circ}\text{C}$
Isolation voltage	V_{is}	AC 2500 (1min.)	V
Screw torque	Mounting *1	3.5	N·m
	Terminals *1	3.5	N·m

*1: Recommendable value : 2.5 to 3.5 N·m(M5)

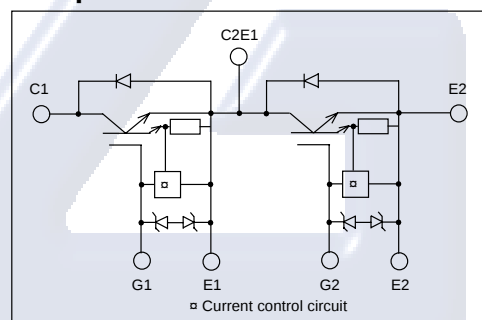
● Electrical characteristics (at $T_j=25^{\circ}\text{C}$ unless otherwise specified)

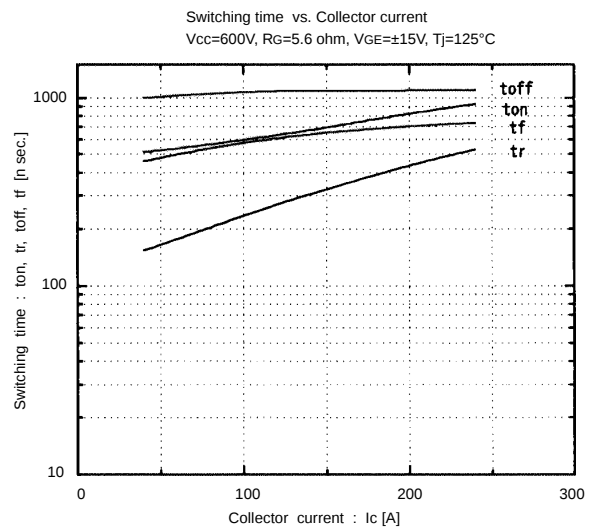
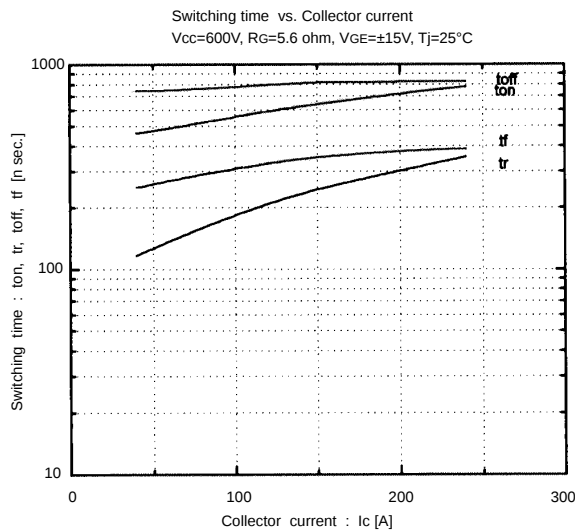
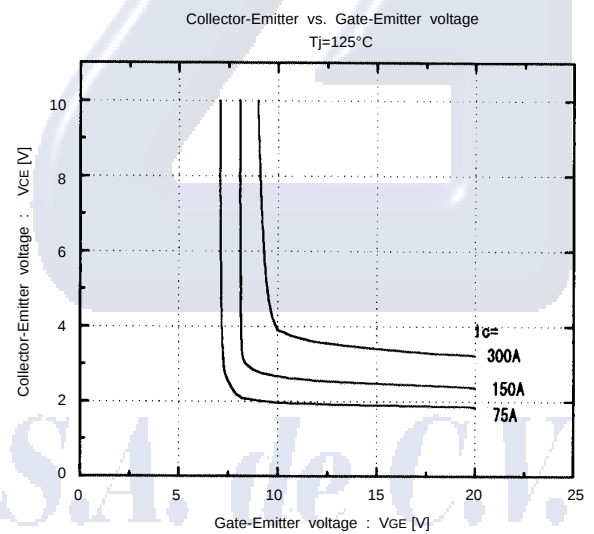
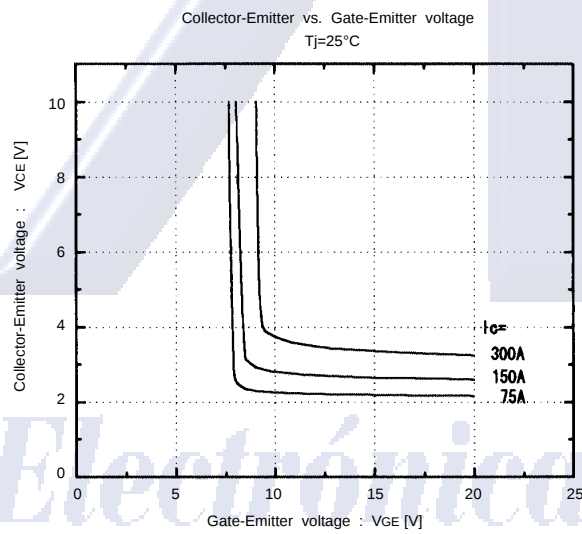
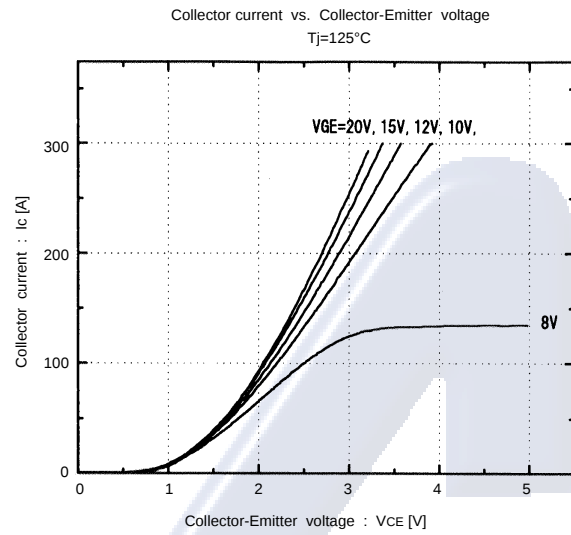
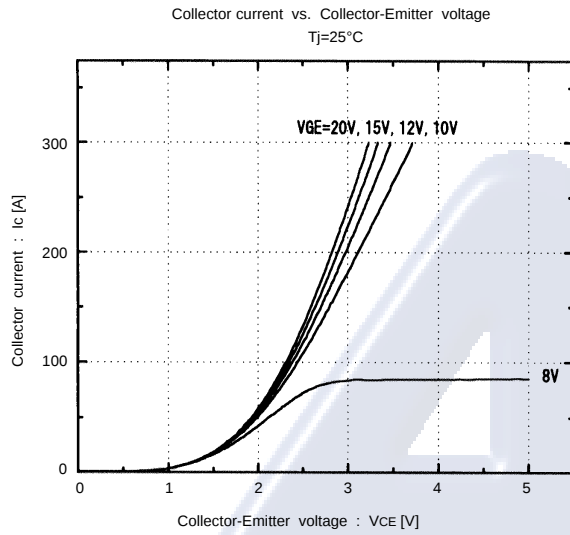
Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Zero gate voltage collector current	I_{CES}	—	—	2.0	$V_{GE}=0\text{V}$, $V_{CE}=1200\text{V}$	mA
Gate-Emitter leakage current	I_{GES}	—	—	30	$V_{CE}=0\text{V}$, $V_{GE}=\pm 20\text{V}$	μA
Gate-Emitter threshold voltage	$V_{GE(th)}$	4.5	—	7.5	$V_{CE}=20\text{V}$, $I_c=150\text{mA}$	V
Collector-Emitter saturation voltage	$V_{CE(sat)}$	—	—	3.3	$V_{GE}=15\text{V}$, $I_c=150\text{A}$	V
Input capacitance	C_{ies}	—	24000	—	$V_{GE}=0\text{V}$	pF
Output capacitance	C_{oes}	—	8700	—	$V_{CE}=10\text{V}$	
Reverse transfer capacitance	C_{res}	—	7740	—	$f=1\text{MHz}$	μs
Turn-on time	t_{on}	—	0.65	1.2	$V_{CC}=600\text{V}$	
	t_r	—	0.25	0.6	$I_c=150\text{A}$	
Turn-off time	t_{off}	—	0.85	1.5	$V_{GE}=\pm 15\text{V}$	
	t_f	—	0.35	0.5	$R_G=5.6\text{ ohm}$	
Diode forward on voltage	V_F	—	—	3.0	$I_F=150\text{A}$, $V_{GE}=0\text{V}$	V
Reverse recovery time	t_{rr}	—	—	0.35	$I_F=150\text{A}$	μs

● Thermal resistance characteristics

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Thermal resistance	$R_{th(j-c)}$	—	—	0.11	IGBT	$^{\circ}\text{C/W}$
	$R_{th(j-c)}$	—	—	0.33	Diode	$^{\circ}\text{C/W}$
	$R_{th(c-f)}^*2$	—	0.025	—	the base to cooling fin	$^{\circ}\text{C/W}$

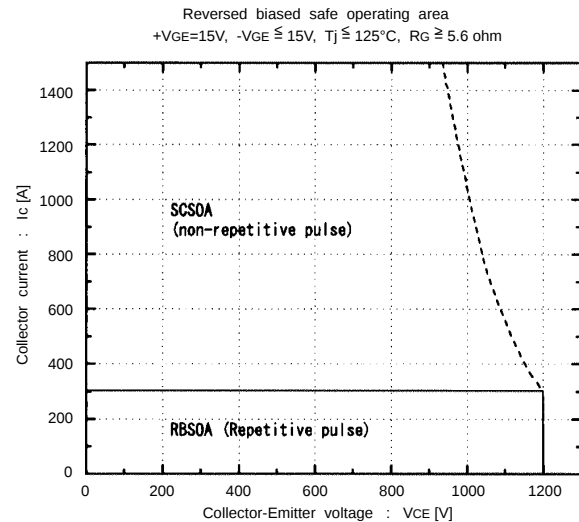
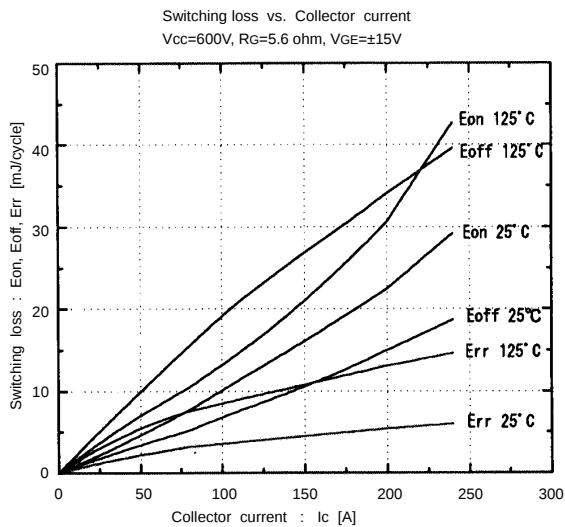
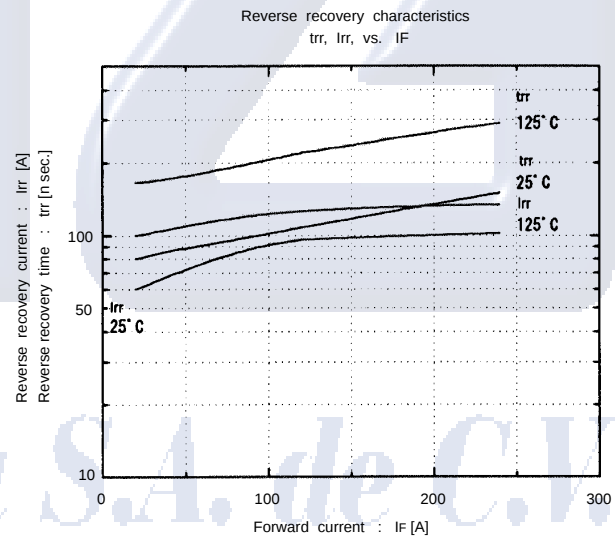
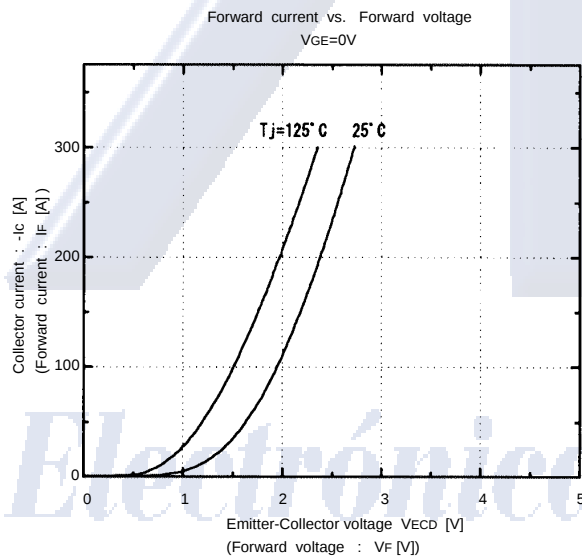
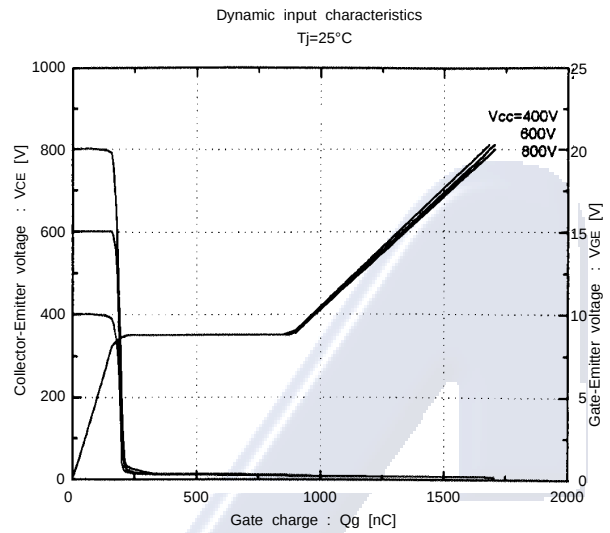
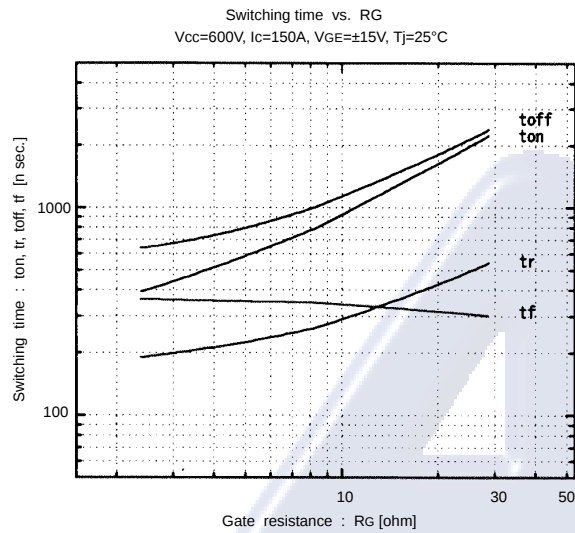
*2: This is the value which is defined mounting on the additional cooling fin with thermal compound



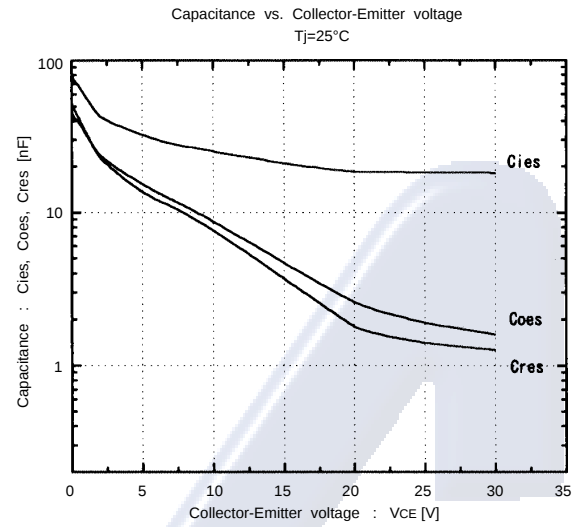
2MBI150NC-120**IGBT Module****■ Characteristics (Representative)**

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IGBT Module



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Technical drawing of the E2C1-240G component, showing top and side views with dimensions and labels.

Top View Dimensions:

- Overall width: 92
- Overall height: 45
- Pin pitch (center-to-center): 23
- Pin diameter: $2-\phi 5.4$
- Pin 1 location: 10 from left edge, 3 from top edge.
- Pin 2 location: 18 from left edge, 17 from top edge.
- Pin 3 location: 36 from left edge, 17 from top edge.
- Pin 4 location: 54 from left edge, 17 from top edge.
- Pin 5 location: 72 from left edge, 17 from top edge.
- Pin 6 location: 90 from left edge, 17 from top edge.
- Pin 7 location: 90 from left edge, 3 from bottom edge.
- Pin 8 location: 72 from left edge, 3 from bottom edge.
- Pin 9 location: 54 from left edge, 3 from bottom edge.
- Pin 10 location: 36 from left edge, 3 from bottom edge.
- Pin 11 location: 18 from left edge, 3 from bottom edge.
- Pin 12 location: 10 from left edge, 3 from bottom edge.

Side View Dimensions:

- Overall height: 30
- Base thickness: 1
- Mounting hole diameter: $3-M5$
- Mounting hole spacing: 18
- Mounting hole offset: 6
- Mounting hole depth: 8
- Mounting hole diameter: 0.5
- Mounting hole offset: 22
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- Mounting hole offset: 22

Labels:

- 3-M5 プラスナベネツ
- ファストナツ (AMP110相当)

mass : 240g