

2MBI200PB-140

IGBT Modules

IGBT Modules P series

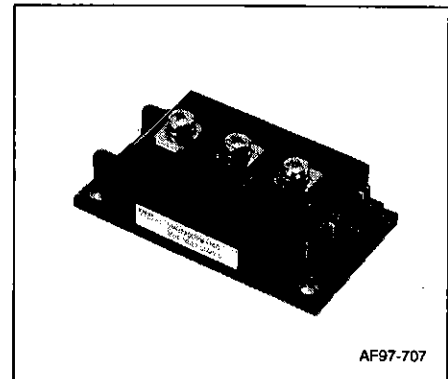
1400V / 200A 2 in one-package

■ Features

- Small temperature dependence of the turn-off switching loss
- Easy to connect in parallel
- Wide RBSOA (square up to 2 times of rated current) and high short-circuit withstand capability
- Low loss and soft-switching (reduction of EMI noise)

■ Applications

- General purpose inverters
- AC servo systems (Drive unit)
- UPS (Uninterruptible Power Supply)

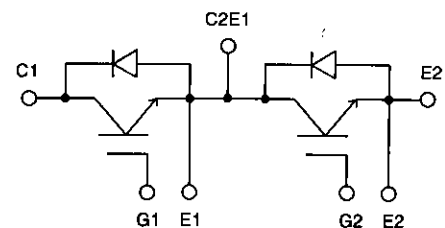


■ Maximum ratings and characteristics

● Absolute maximum ratings (Tc=25°C unless otherwise specified)

Item			Symbol	Rating	Unit
Collector-Emitter voltage			V _{CE}	1400	V
Gate-Emitter voltage			V _{GE}	±20	V
Collector current	Continuous	T _C =25°C	I _C	300	A
		T _C =80°C		200	
	1ms	T _C =25°C	I _C pulse	600	
		T _C =80°C		400	
	Continuous		-I _C	200	
	1ms		-I _C pulse	400	
Max power dissipation			P _C	1500	W
Operating temperature			T _J	+150	°C
Storage temperature			T _{stg}	-40 to +125	°C
Isolation voltage			V _{is}	2500 AC (1min.)	V
Screw torque	Mounting *1			3.5	N·m
	Terminals *2			4.5	

■ Equivalent circuit



Recommendable value

*1 2.5 to 3.5 N·m (M5 or M6) *2 3.5 to 4.5 N·m (M6)

● Electrical ratings and characteristics (T_J=25°C unless otherwise specified)

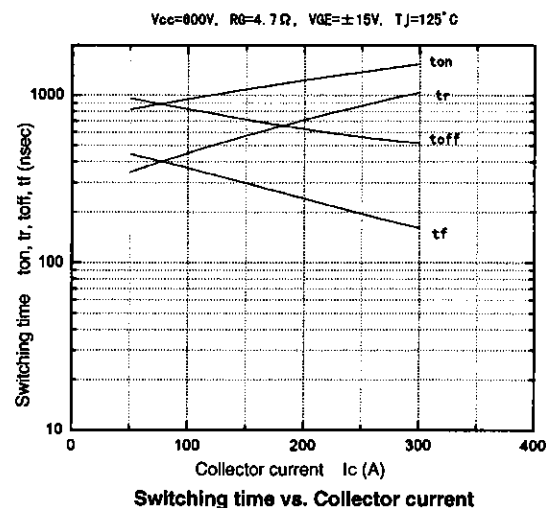
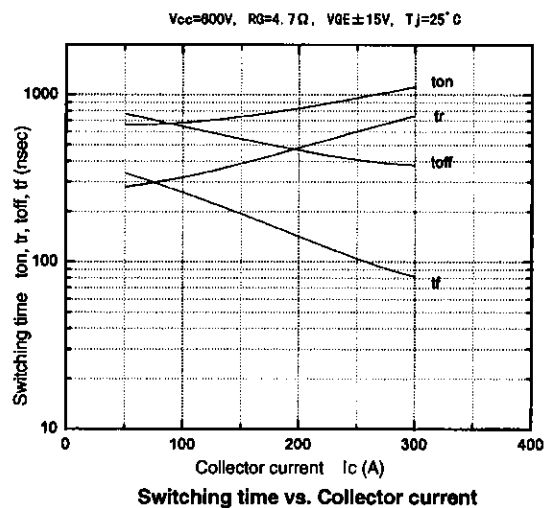
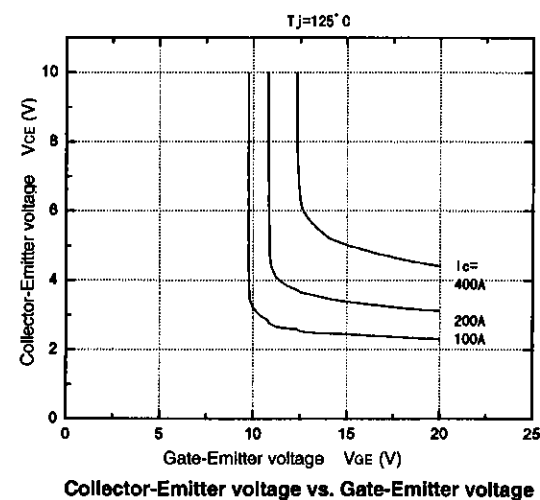
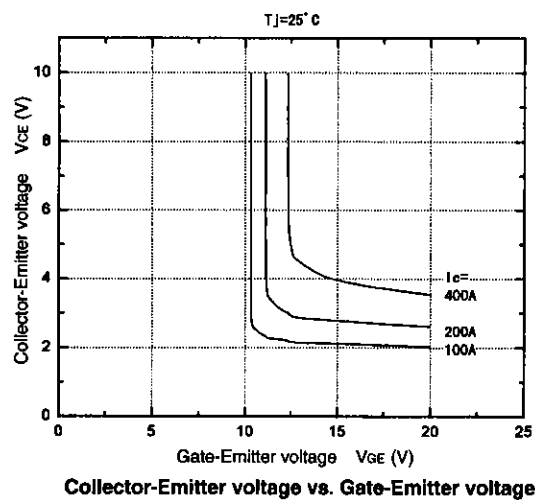
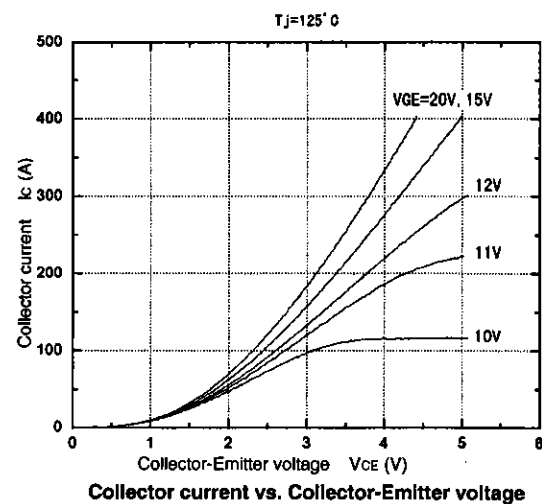
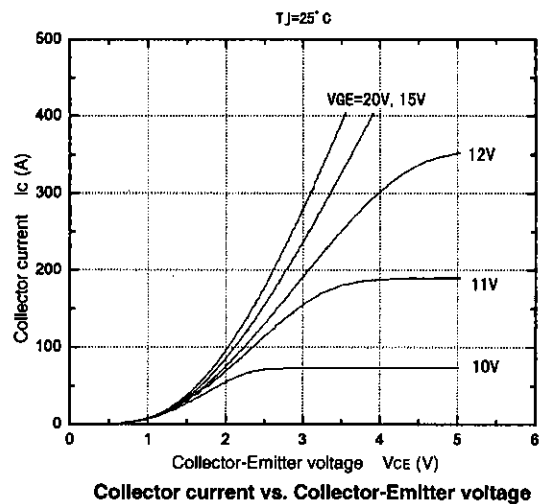
Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Zero gate voltage collector current	I _{CE}	—	—	2.0	V _{GE} =0V, V _{CE} =1400V	mA
Gate-Emitter leakage current	I _{GES}	—	—	400	V _{CE} =0V, V _{GE} =±20V	nA
Gate-Emitter threshold voltage	V _{GE} (th)	6.0	8.0	9.0	V _{CE} =20V, I _C =200mA	V
Collector-Emitter saturation voltage	V _{CE} (sat)	—	2.7	3.0	T _J =25°C, V _{GE} =15V, I _C =200A	V
		—	3.3	—	T _J =125°C, V _{GE} =15V, I _C =200A	
Input capacitance	C _{ies}	—	20000	—	V _{GE} =0V	pF
Output capacitance	C _{oes}	—	3000	—	V _{CE} =10V	
Reverse transfer capacitance	C _{res}	—	1300	—	f=1MHz	μs
Turn-on time	ton	—	—	1.20	V _{CC} =600V	
	tr	—	—	0.60	I _C =200A	
Turn-off time	toff	—	—	1.00	V _{GE} =±15V	
	tf	—	—	0.30	R _G =4.7Ω	
Diode forward on voltage	V _F	—	2.4	3.3	I _F =200A, V _{GE} =0V	V
Reverse recovery time	t _{rr}	—	—	0.35	I _F =200A	μs

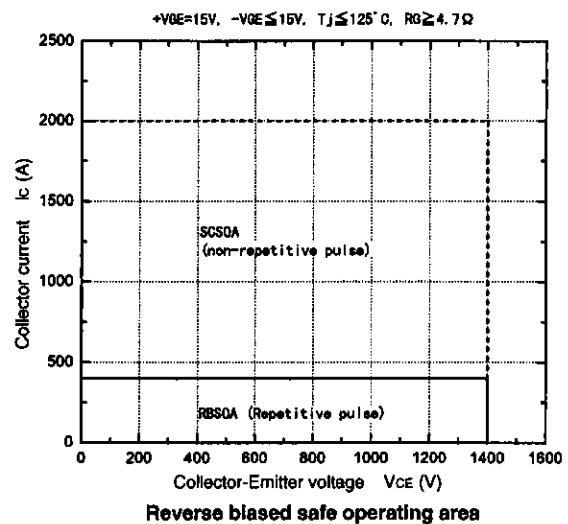
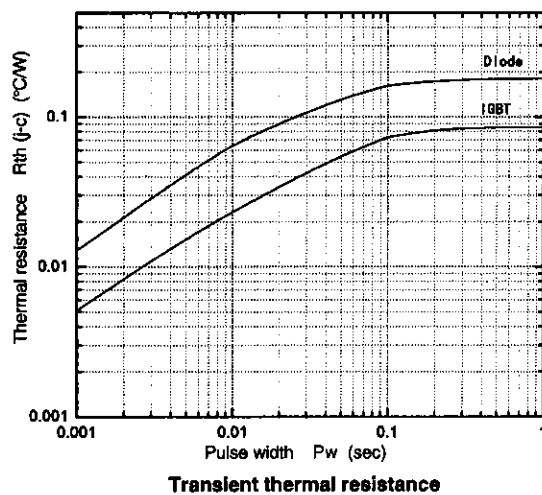
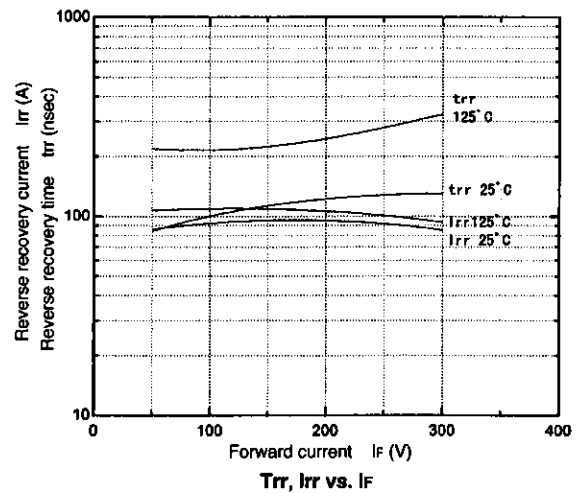
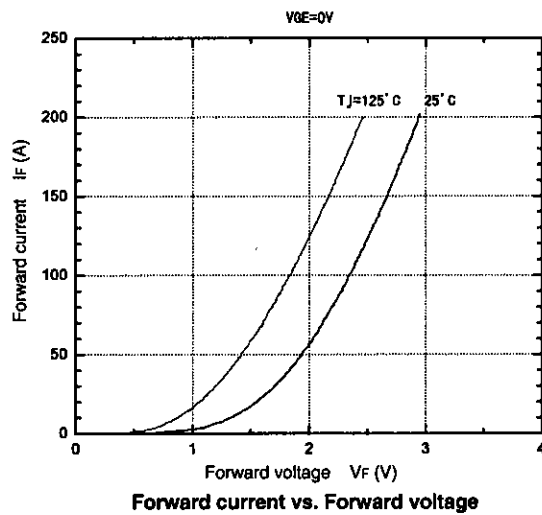
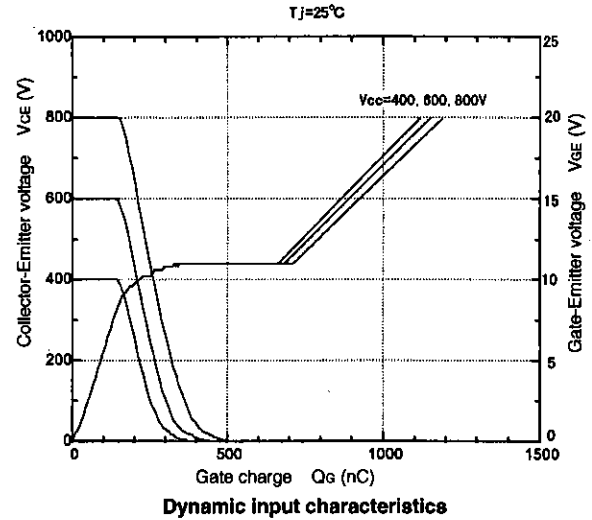
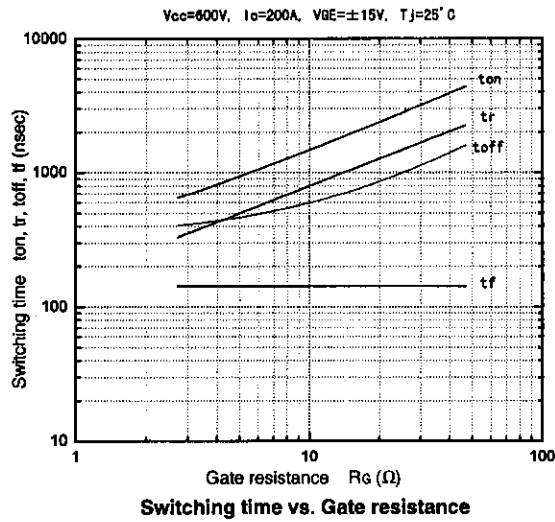
● Thermal resistance characteristics

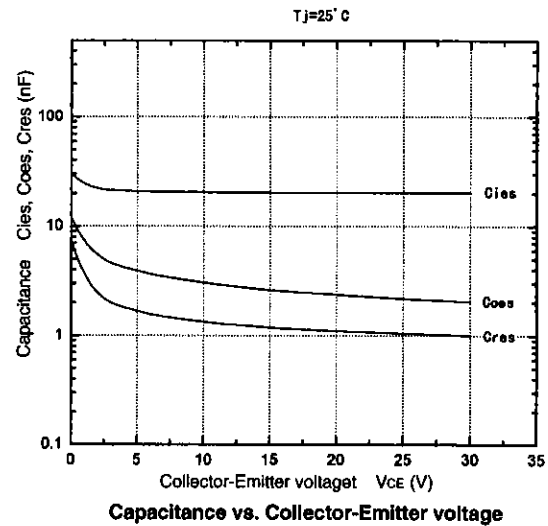
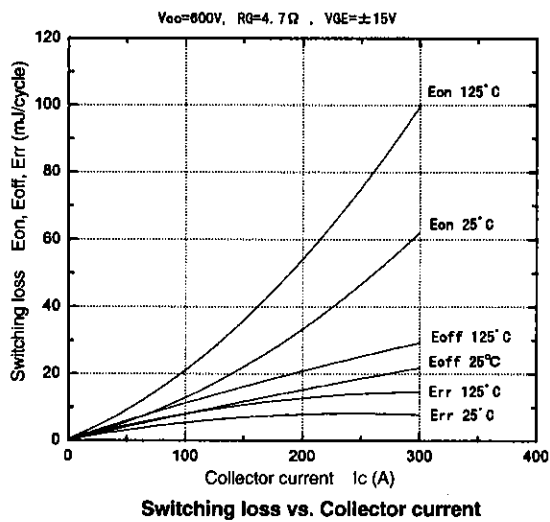
Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Thermal resistance	R _{th} (j-c)	—	—	0.085	IGBT	°C/W
	R _{th} (j-c)	—	—	0.180	Diode	
	R _{th} (c-f)*	—	0.025	—	the base to cooling fin	

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

■ Characteristics

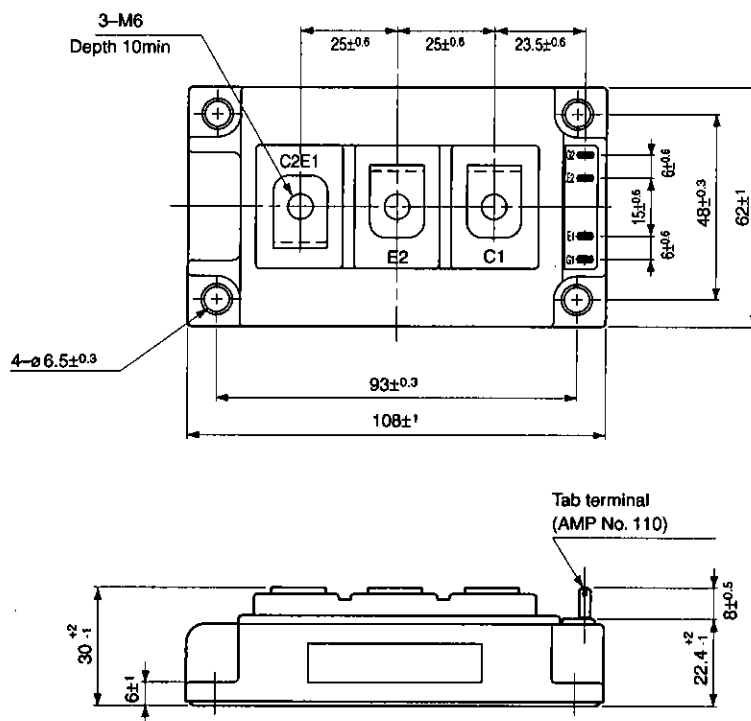






■ **Outline drawings, mm**

M235



Mass: 370g