

2MBI150SC-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 Tc=25°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	T _c =25°C	200	A
		T _c =80°C	150	A
	1ms	T _c =25°C	400	A
		T _c =80°C	300	A
	1ms	-I _C	150	A
		-I _C pulse	300	A
Max. power dissipation	P _C	1000	W	
Operating temperature	T _j	+150	°C	
Storage temperature	T _{stg}	-40 to +125	°C	
Isolation voltage *1	V _{is}	AC 2500 (1min.)	V	
Screw torque	Mounting *2	3.5	N·m	
	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 N·m(M5)

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

Item	Symbol	Characteristics			Conditions	Unit	
		Min.	Typ.	Max.			
Zero gate voltage collector current	I _{CES}	–	–	2.0	V _{GE} =0V, V _{CE} =1200V	mA	
Gate-Emitter leakage current	I _{GES}	–	–	0.4	V _{CE} =0V, V _{GE} =±20V	μA	
Gate-Emitter threshold voltage	V _{GE(th)}	5.5	7.2	8.5	V _{CE} =20V, I _C =150mA	V	
Collector-Emitter saturation voltage	V _{CE(sat)}	–	2.3	2.6	T _c =25°C	V _{GE} =15V, I _C =150A	V
		–	2.8	–	T _c =125°C		
Input capacitance	C _{ies}	–	18000	–	V _{GE} =0V	pF	
Output capacitance	C _{oes}	–	3750	–	V _{CE} =10V		
Reverse transfer capacitance	C _{res}	–	3300	–	f=1MHz		
Turn-on time	t _{on}	–	0.35	1.2	V _{CC} =600V	μs	
	t _r	–	0.25	0.6	I _C =150A		
	t _{r(i)}	–	0.1	–	V _{GE} =±15V		
Turn-off time	t _{off}	–	0.45	1.0	R _G =5.6 ohm	μs	
	t _f	–	0.08	0.3			
Forward on voltage	V _F	–	2.3	3.0	T _j =25°C	I _F =150A, V _{GE} =0V	V
		–	2.0	–	T _j =125°C		
Reverse recovery time	t _{rr}	–	–	0.35	I _F =150A	μs	

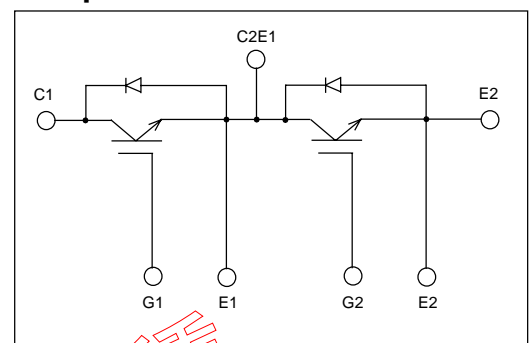
● Thermal resistance characteristics

Item	Symbol	Characteristics			Conditions	Unit
		Min.	Typ.	Max.		
Thermal resistance	R _{th(j-c)}	–	–	0.125	IGBT	°C/W
	R _{th(j-c)}	–	–	0.26	Diode	°C/W
	R _{th(c-f)*2}	–	0.025	–	the base to cooling fin	°C/W

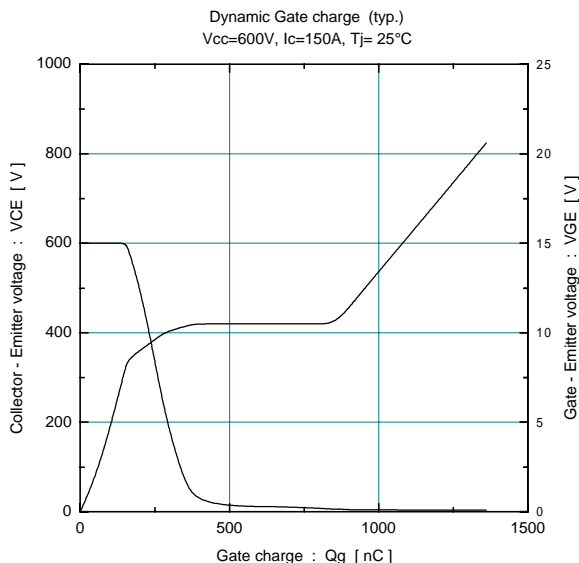
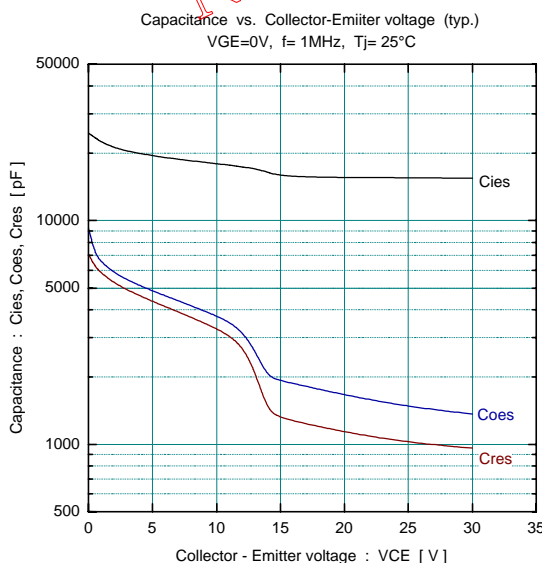
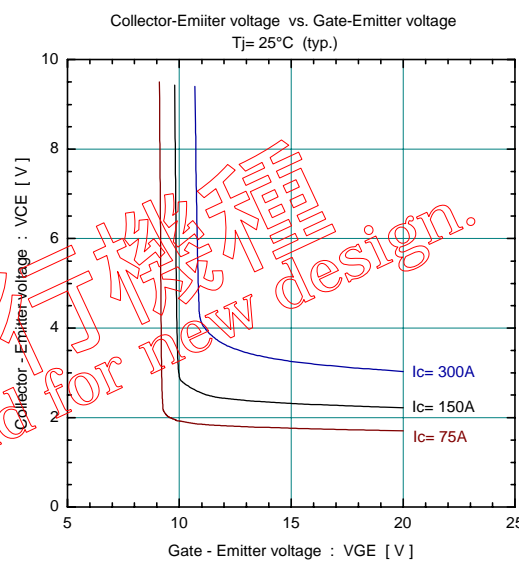
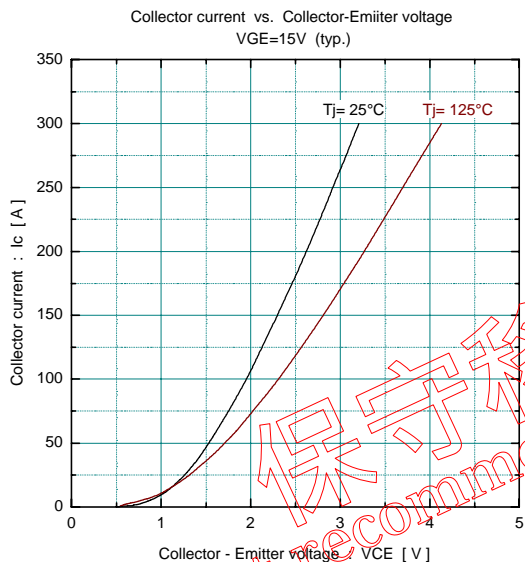
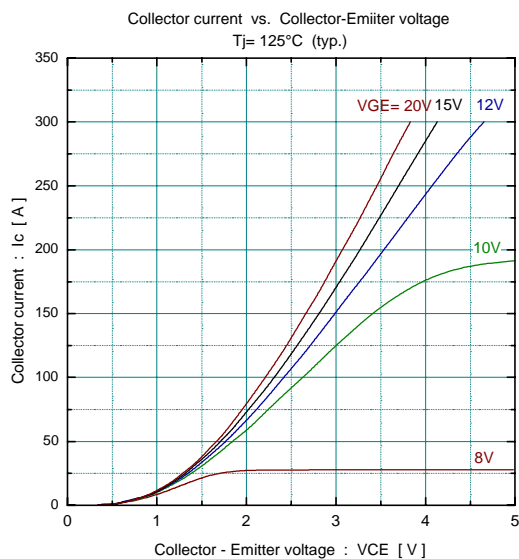
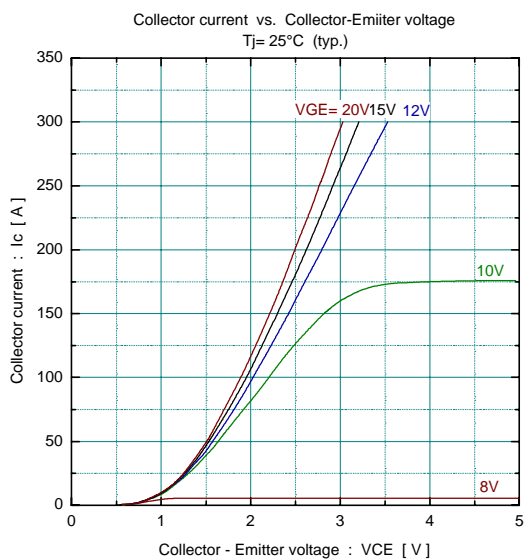
*2 : This is the value which is defined mounting on the additional cooling fin with thermal compound



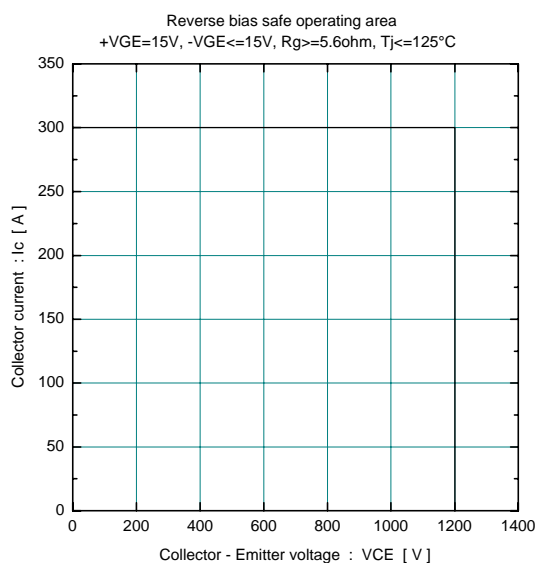
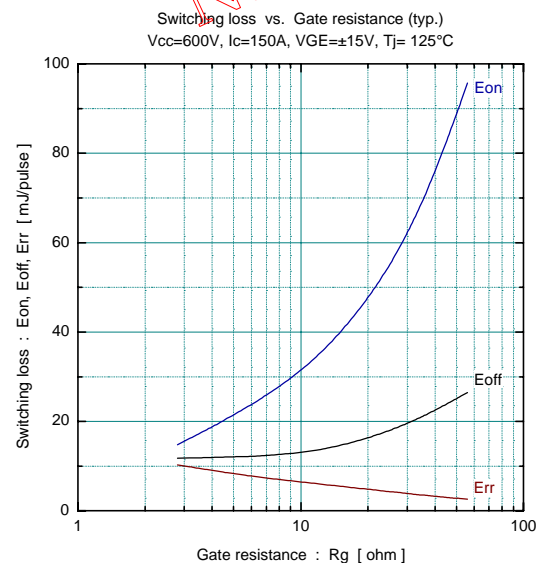
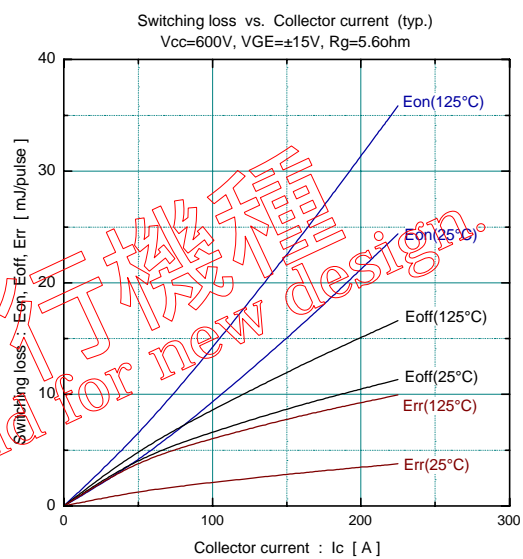
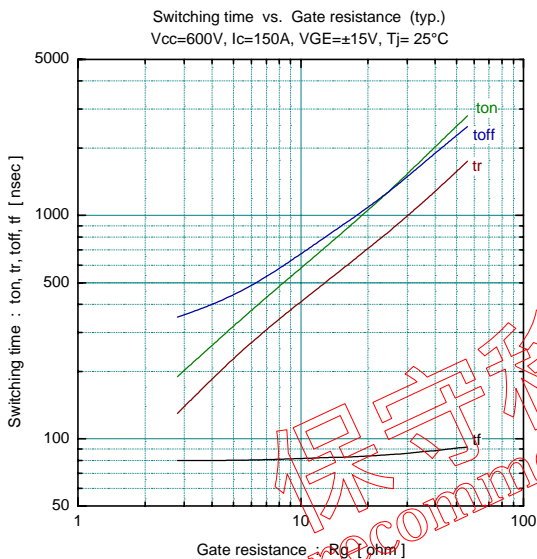
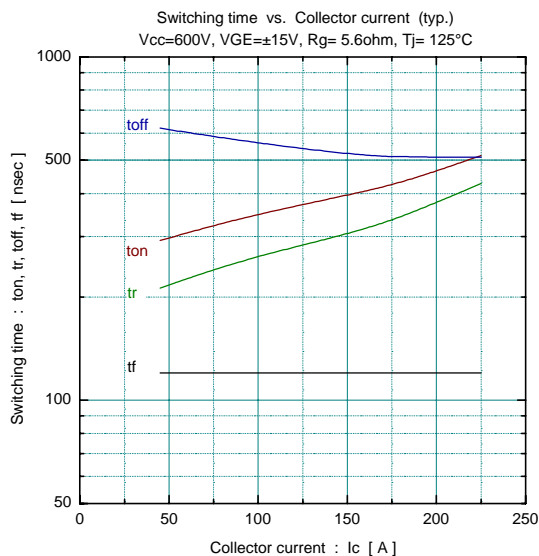
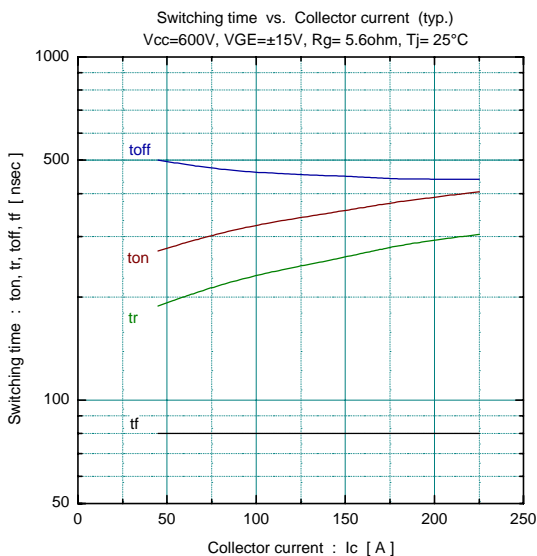
■ Equivalent Circuit Schematic



Characteristics (Representative)

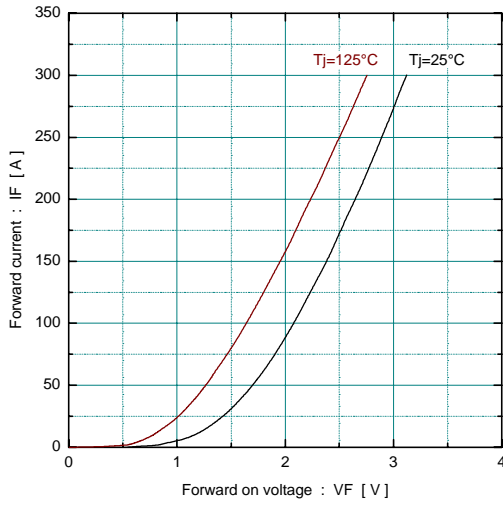


保守移行機種
Not recommend for new design.

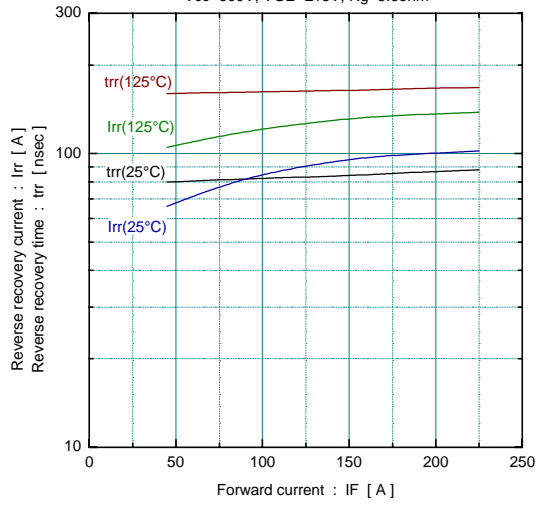


保守移行機種
 Not recommended for new design

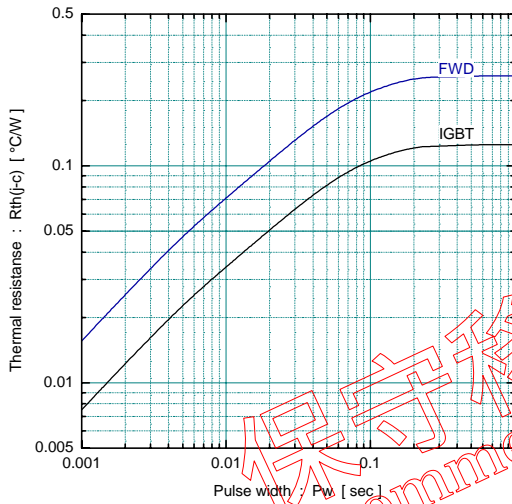
Forward current vs. Forward on voltage (typ.)



Reverse recovery characteristics (typ.)

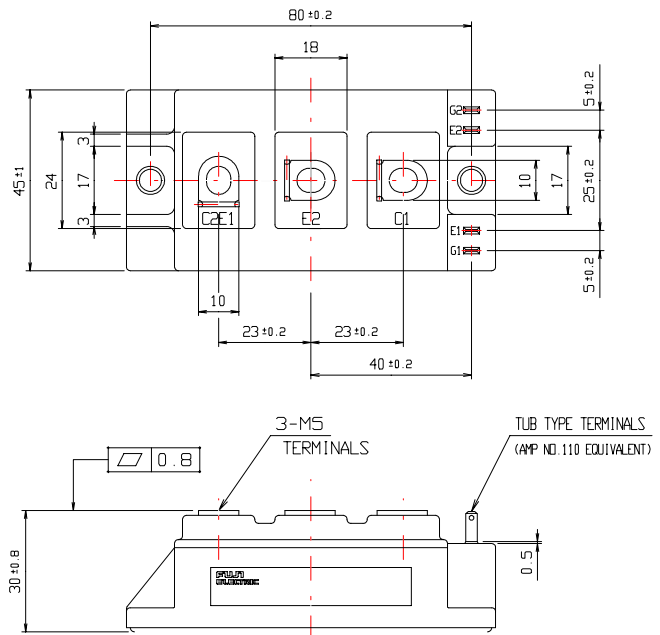


Transient thermal resistance



保守移行機種
Not recommend for new design.

■ Outline Drawings, mm



mass : 240g