

**Features:**

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

**Typical Applications:**

- Inverter for Motor Drive
- Inverter welding machines
- Uninterruptible Power Supply
- Industrial machines

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min.	Typ.	Max.	
V <sub>CES</sub>	Collector-Emitter voltage	T <sub>j</sub> =25°C			1250	V
V <sub>GES</sub>	Gate-Emitter voltage	T <sub>j</sub> =25°C			±30	V
I <sub>C</sub>	Collector current	Continuous@ T <sub>C</sub> =100°C			200	A
I <sub>CP</sub>		T <sub>P</sub> = 1ms			400	A
P <sub>C</sub>	Collector power dissipation	T <sub>C</sub> =25°C ,1 device			882	W
T <sub>j</sub>	Junction temperature	/			175	°C
T <sub>vj(op)</sub>	Temperature under switching conditions	T <sub>vj op</sub> > 150°C is only allowed for operation at overload conditions.	-40		175	°C
T <sub>stg</sub>	Storage temperature	/	-40		125	°C
V <sub>iso</sub>	Isolation between terminal and copper base	T <sub>j</sub> =25°C , AC: 1minute	2500			V
Screw torque	Mounting(M6)	/	3.5		5.0	N·m
	Terminals(M6)	/	3.5		5.0	N·m
I <sub>CES</sub>	Zero gate voltage collector current	T <sub>j</sub> =25°C ,V <sub>CE</sub> =1200V, V <sub>GE</sub> =0V			1.0	mA
I <sub>GES</sub>	Gate-Emitter leakage current	T <sub>j</sub> =25°C ,V <sub>CE</sub> =0V, V <sub>GE</sub> =±20V			±2	µA
V <sub>GE(th)</sub>	Gate-Emitter threshold voltage	T <sub>j</sub> =25°C ,V <sub>CE</sub> =20V, I <sub>C</sub> =150mA	4.5		8.5	V
V <sub>CE(sat)</sub>	Collector-Emitter saturation voltage	T <sub>j</sub> =25°C ,V <sub>GE</sub> =15V, I <sub>C</sub> =200A		1.96	2.5	V
		T <sub>j</sub> =125°C ,V <sub>GE</sub> =15V, I <sub>C</sub> =200A		2.25		V
		T <sub>j</sub> =150°C ,V <sub>GE</sub> =15V, I <sub>C</sub> =200A		2.33		V
C <sub>ies</sub>	Input capacitance	T <sub>j</sub> =25°C ,V <sub>CE</sub> =10V, V <sub>GE</sub> =0V, f=1MHz		22.2		nF
t <sub>on</sub>	Turn-on time	T <sub>j</sub> =150°C ,V <sub>CC</sub> =600V, I <sub>C</sub> =200A, V <sub>GE</sub> =±15V, R <sub>g</sub> =5.1Ω, Inductive load		180		ns
t <sub>r</sub>				95		ns
t <sub>off</sub>	Turn-off time			730		ns
t <sub>f</sub>				270		ns
E <sub>on</sub>	Turn-on energy			17		mJ
E <sub>off</sub>	Turn-off energy			20		mJ
E <sub>rr</sub>	Reverse recovery energy			15		mJ
t <sub>sc</sub>	Short circuit withstand time	T <sub>j</sub> =150°C ,V <sub>CC</sub> =720V,V <sub>GE</sub> =± 15V, R <sub>g</sub> =5.1 Ω	10			µs
V <sub>F</sub>	Forward on voltage	T <sub>j</sub> =25°C ,I <sub>F</sub> =200A		2.28	2.6	V
		T <sub>j</sub> =125°C ,I <sub>F</sub> =200A		2.26		V
		T <sub>j</sub> =150°C ,I <sub>F</sub> =200A		2.30		V
t <sub>rr</sub>	Reverse recovery time	T <sub>j</sub> =125°C ,I <sub>F</sub> =200A		220		ns
		T <sub>j</sub> =150°C ,I <sub>F</sub> =200A		250		ns
R <sub>th(j-c)</sub>	Thermal resistance(per chip)	IGBT			0.17	°C/W
		FWD			0.26	°C/W
R <sub>th(c-f)</sub>	Contact thermal resistance (per module)	With thermal compound		0.01		°C/W
W <sub>t</sub>	Weight				310	g
Outline	M39					

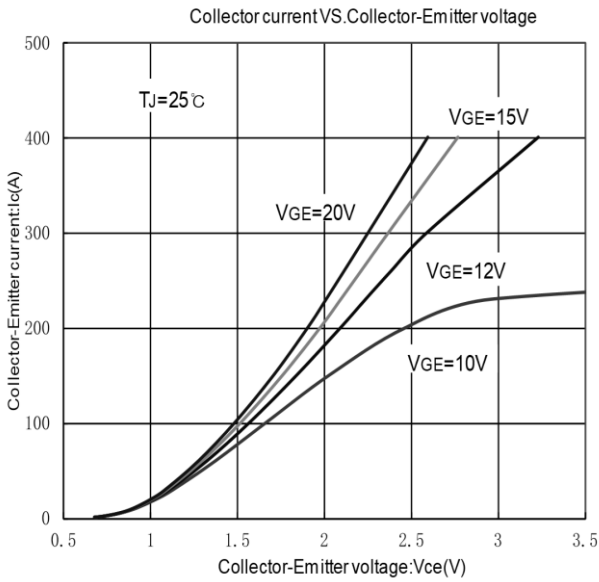


Fig. 1

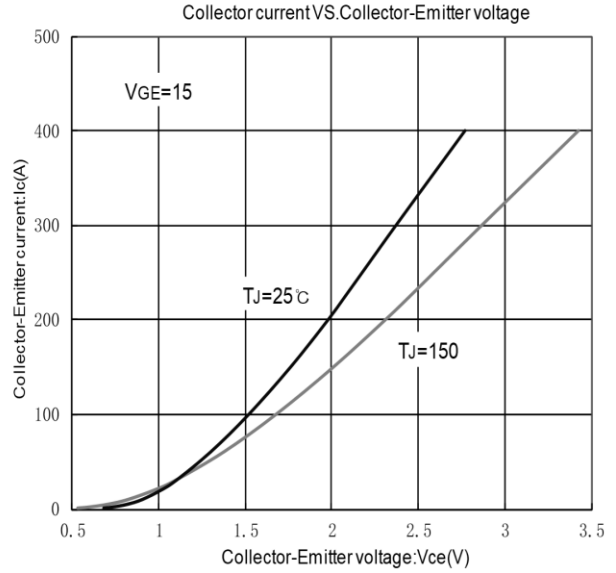


Fig. 2

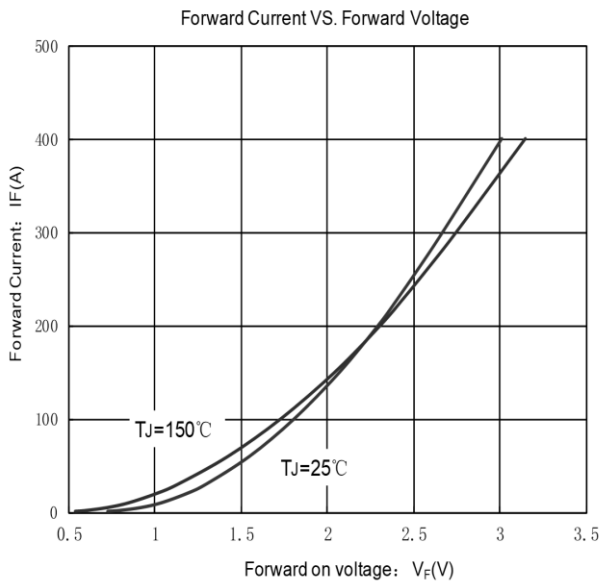


Fig. 3

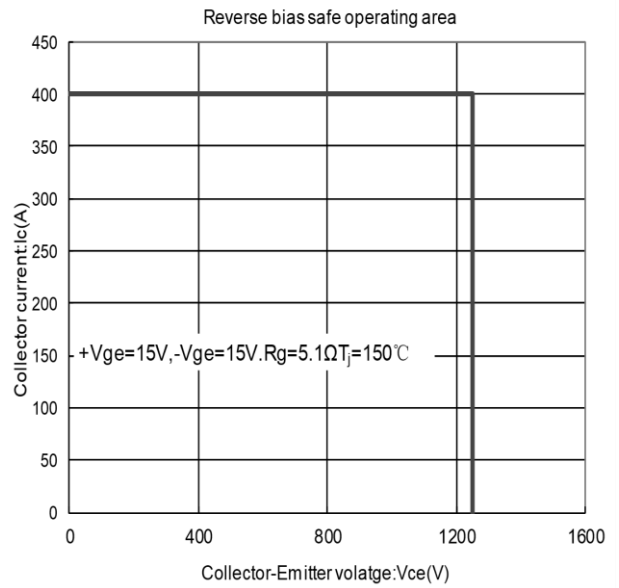


Fig. 4

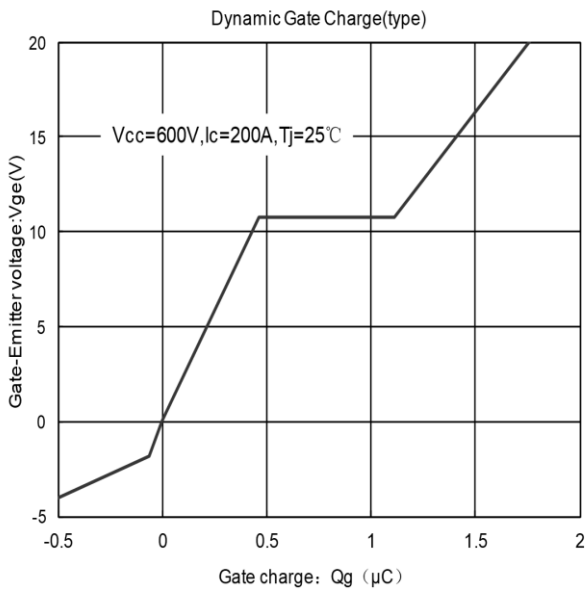


Fig. 5

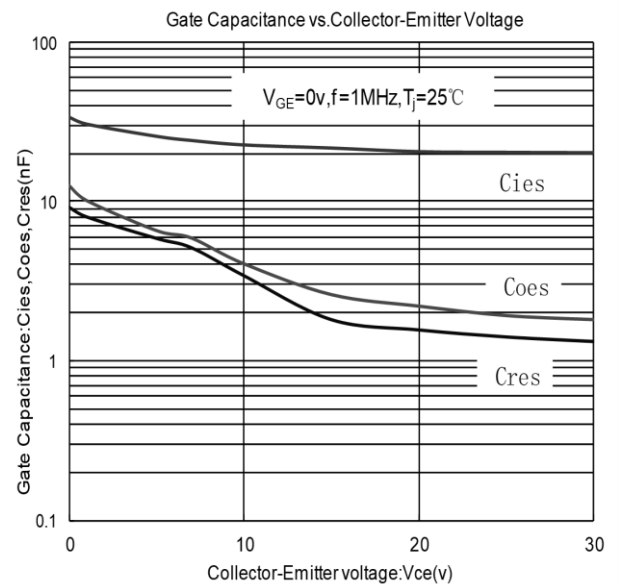


Fig. 6

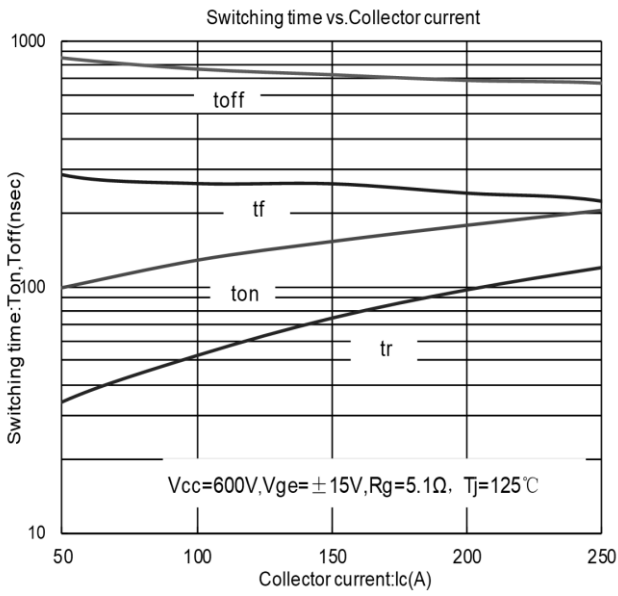


Fig.7

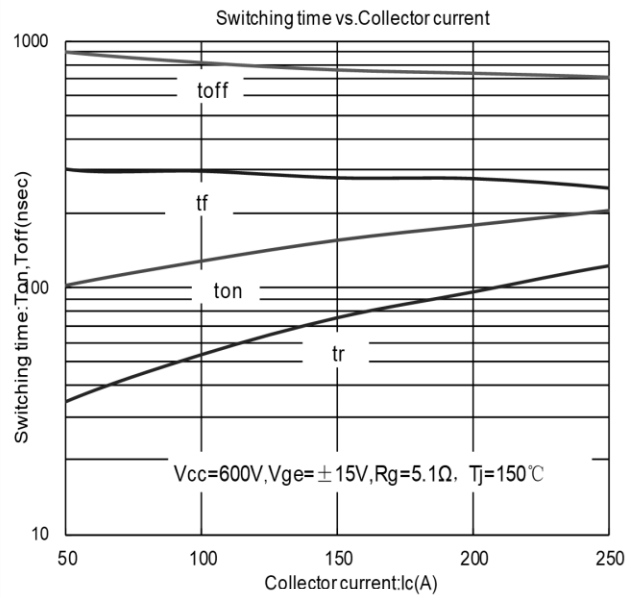


Fig.8

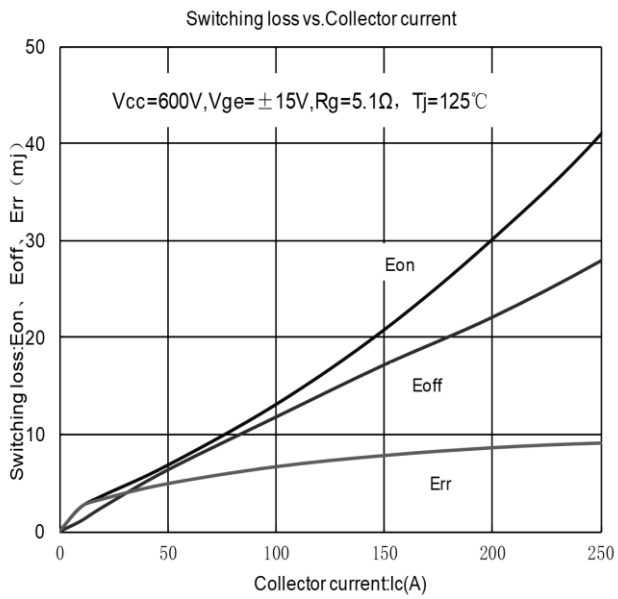


Fig.9

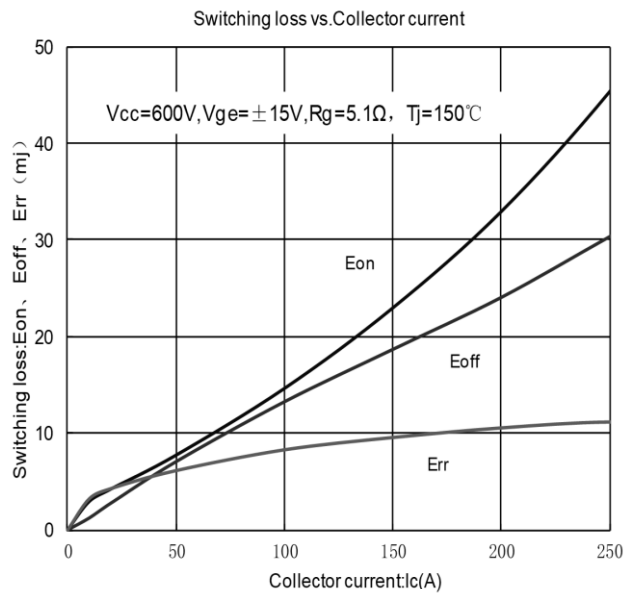


Fig.10

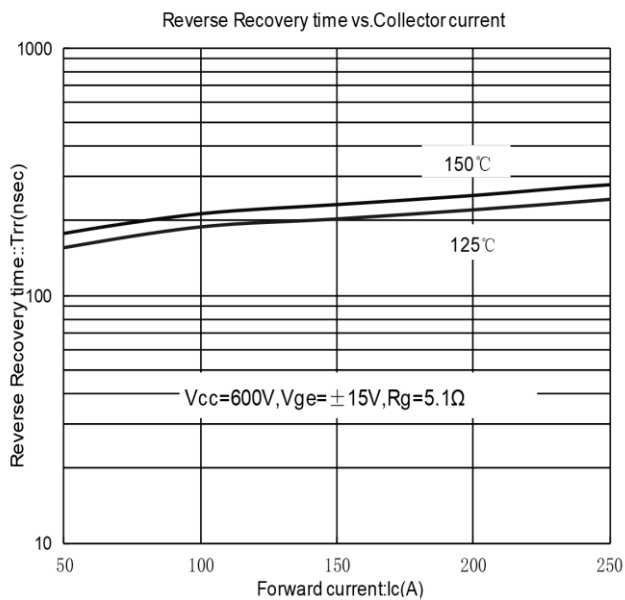


Fig.11

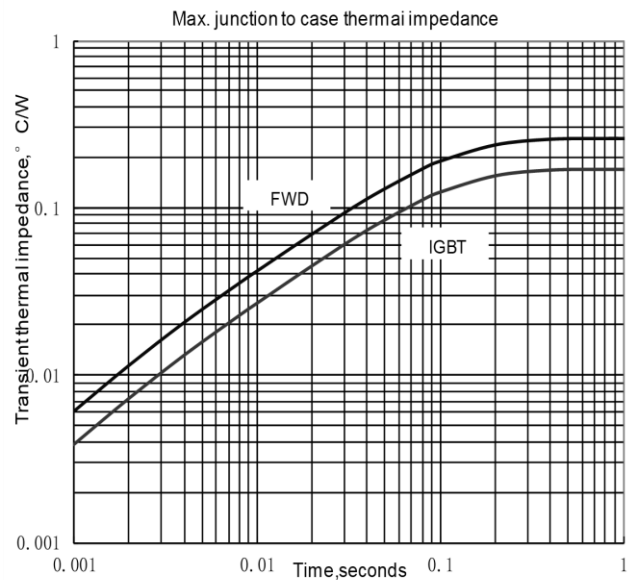
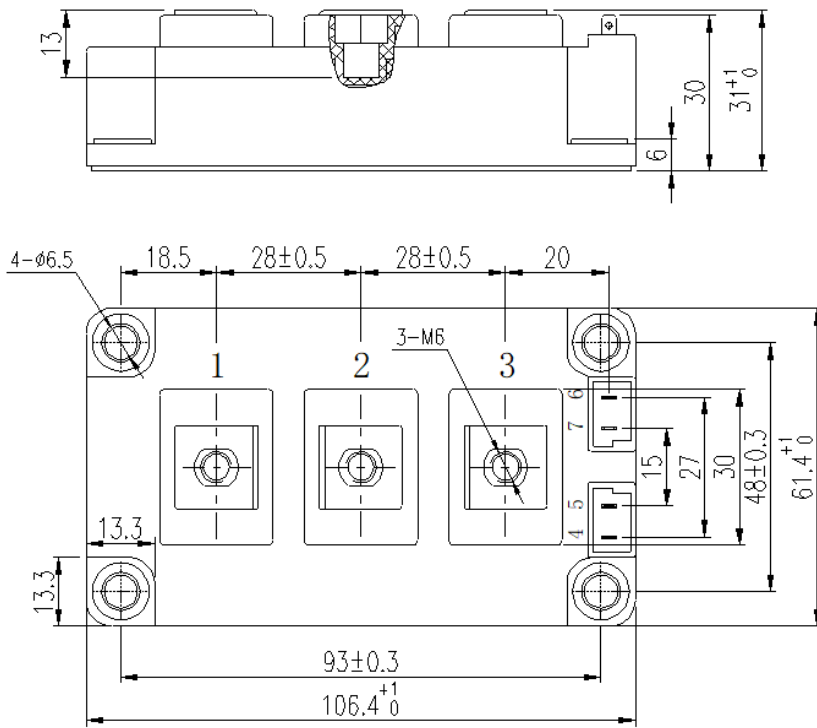
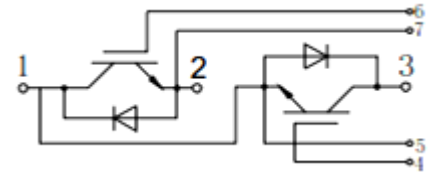


Fig.12



MD200MB120S



Unmarked dimensional tolerance: ±0.5mm