

6MBI75VW-120-50

IGBT Modules

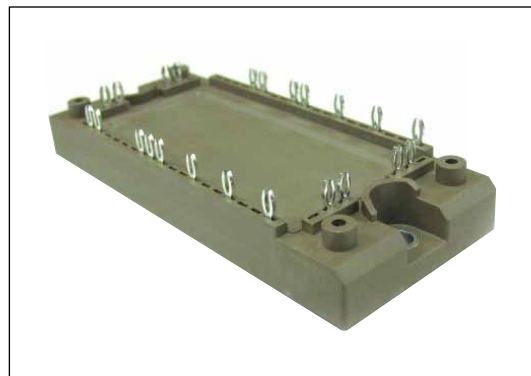
IGBT MODULE (V series) 1200V / 75A / 6 in one package

■ Features

- Compact Package
- P.C.Board Mount
- Low $V_{CE(sat)}$

■ Applications

- Inverter for Motor Drive
- AC and DC Servo Drive Amplifier
- Uninterruptible Power Supply
- Industrial machines, such as welding machines



■ Maximum Ratings and Characteristics

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

Items		Symbols	Conditions		Maximum ratings	Units
Inverter	Collector-Emitter voltage	V _{CES}			1200	V
	Gate-Emitter voltage	V _{GES}			±20	V
	Collector current	I _c	Continuous	T _c =100°C	75	A
		I _{cp}	1ms	T _c =80°C	150	
		-I _c			75	
		-I _c pulse	1ms	150		
	Collector power dissipation	P _c	1 device		385	W
Junction temperature		T _j			175	°C
Operating junciton temperature (under switching conditions)		T _{jop}			150	
Case temperature		T _c			125	
Storage temperature		T _{stg}			-40 to +125	
Isolation voltage	between terminal and copper base (*1) between thermistor and others (*2)	V _{iso}	AC : 1min.		2500	VAC
Screw torque	Mounting (*3)	-	M5		3.5	N m

Note *1: All terminals should be connected together during the test.

Note *2: Two thermistor terminals should be connected together, other terminals should be connected together and shorted to base plate during the test.

Note *3: Recommendable value : 2.5-3.5 Nm (M5)

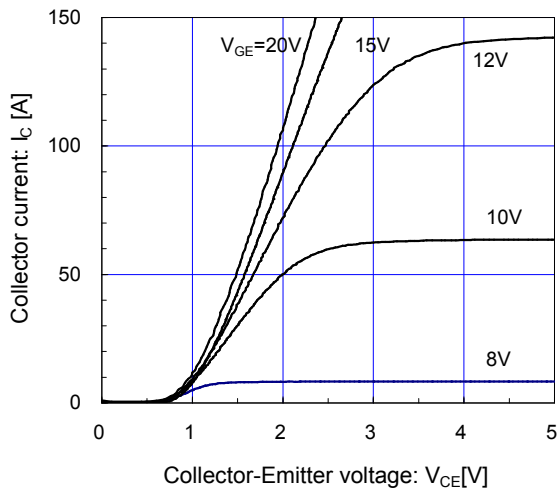
● Thermal resistance characteristics

Note *4: This is the value which is defined mounting on the additional cooling fin with thermal compound.

■ Characteristics (Representative)

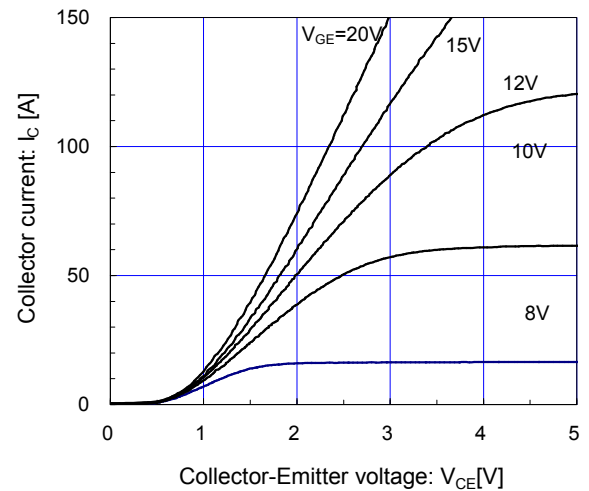
[Inverter]

Collector current vs. Collector-Emittter voltage (typ.)

 $T_j = 25^\circ\text{C}$ / chip

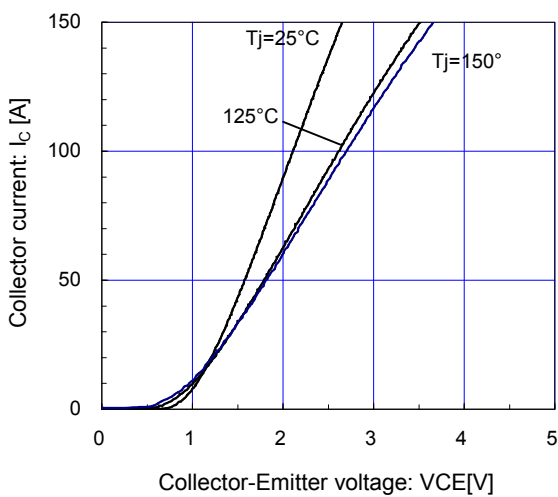
[Inverter]

Collector current vs. Collector-Emittter voltage (typ.)

 $T_j = 150^\circ\text{C}$ / chip

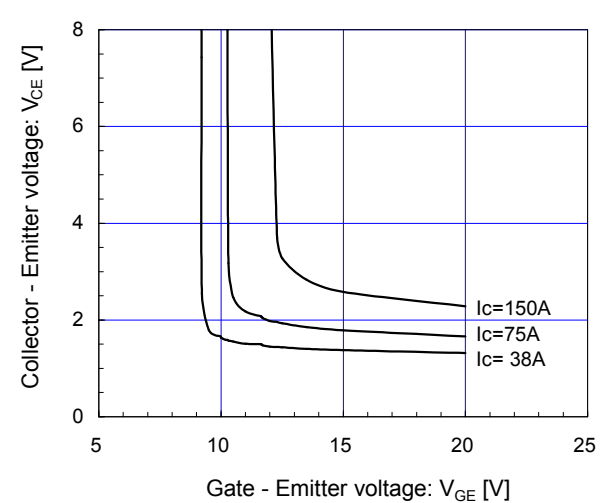
[Inverter]

Collector current vs. Collector-Emittter voltage (typ.)

 $V_{GE} = 15\text{V}$ / chip

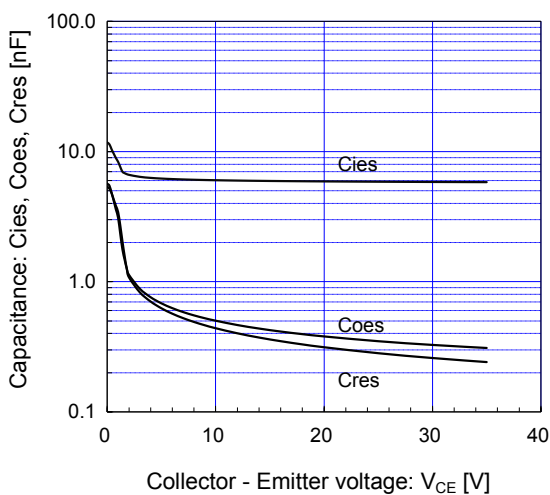
[Inverter]

Collector-Emittter voltage vs. Gate-Emittter voltage (typ.)

 $T_j = 25^\circ\text{C}$ / chip

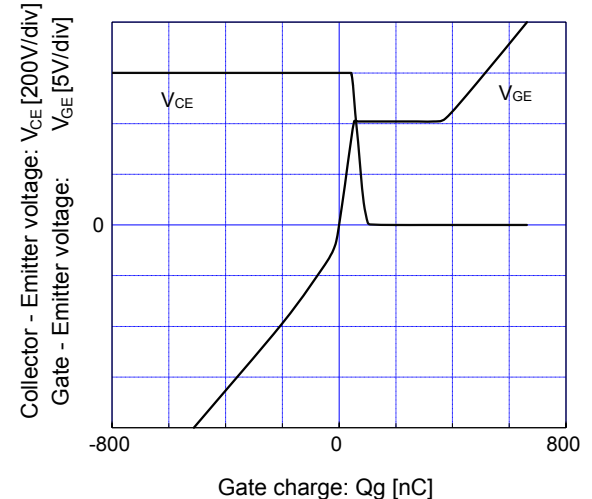
[Inverter]

Capacitance vs. Collector-Emittter voltage (typ.)

 $V_{GE} = 0\text{V}$, $f = 1\text{MHz}$, $T_j = 25^\circ\text{C}$ 

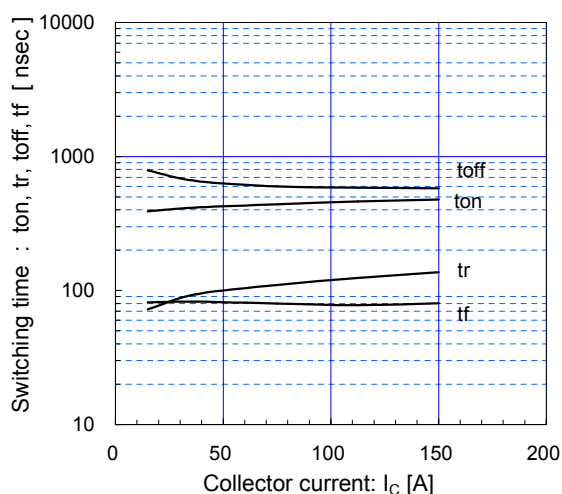
[Inverter]

Dynamic gate charge (typ.)

 $V_{CC} = 600\text{V}$, $I_c = 75\text{A}$, $T_j = 25^\circ\text{C}$ 

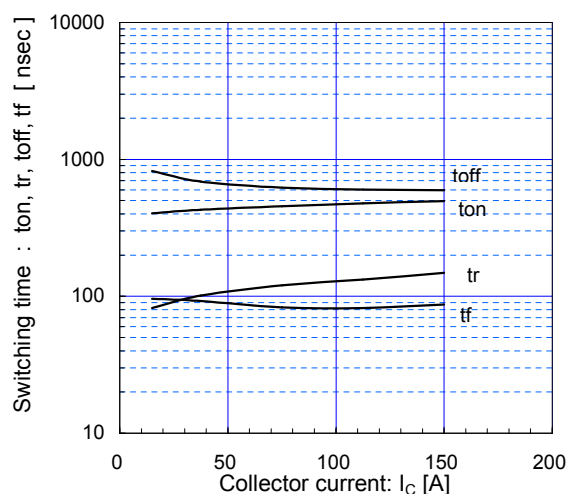
[Inverter]

Switching time vs. Collector current (typ.)
 $V_{cc}=600V$, $V_{GE}=\pm 15V$, $R_g=2.2\Omega$, $T_j=125^\circ C$



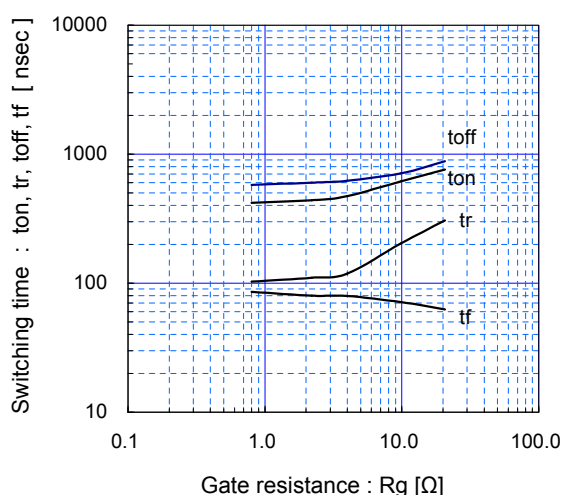
[Inverter]

Switching time vs. Collector current (typ.)
 $V_{cc}=600V$, $V_{GE}=\pm 15V$, $R_g=2.2\Omega$, $T_j=150^\circ C$



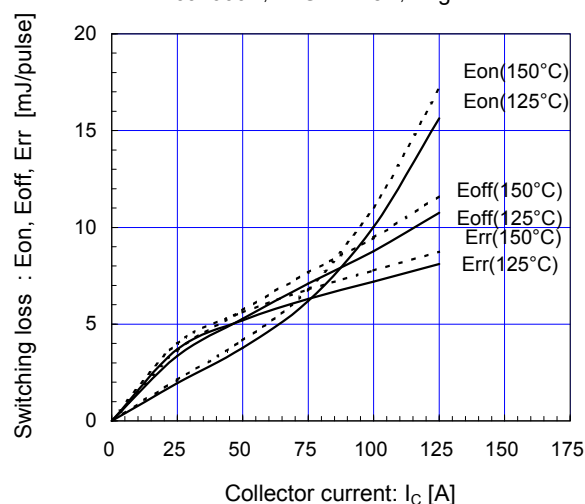
[Inverter]

Switching time vs. gate resistance (typ.)
 $V_{cc}=600V$, $I_C=75A$, $V_{GE}=\pm 15V$, $T_j=125^\circ C$



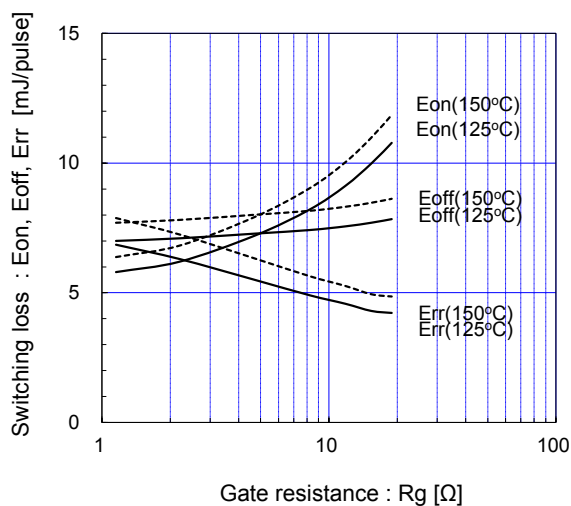
[Inverter]

Switching loss vs. Collector current (typ.)
 $V_{cc}=600V$, $V_{GE}=\pm 15V$, $R_g=2.2\Omega$



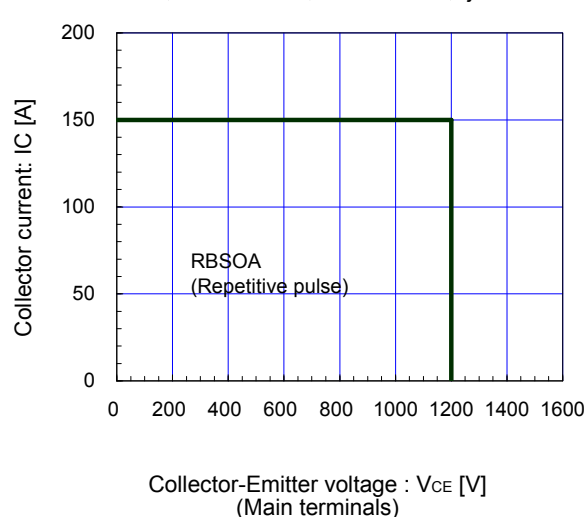
[Inverter]

Switching loss vs. gate resistance (typ.)
 $V_{cc}=600V$, $I_C=75A$, $V_{GE}=\pm 15V$

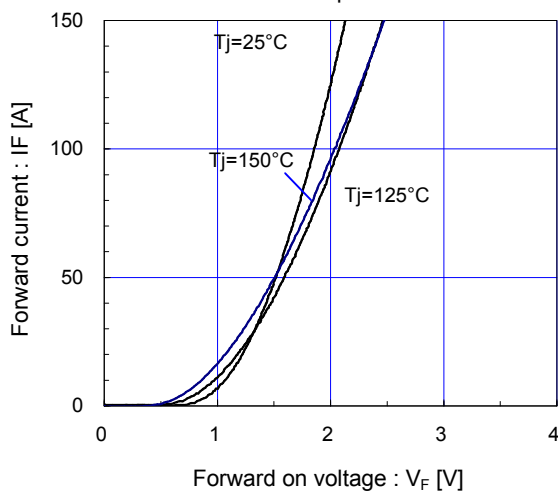


[Inverter]

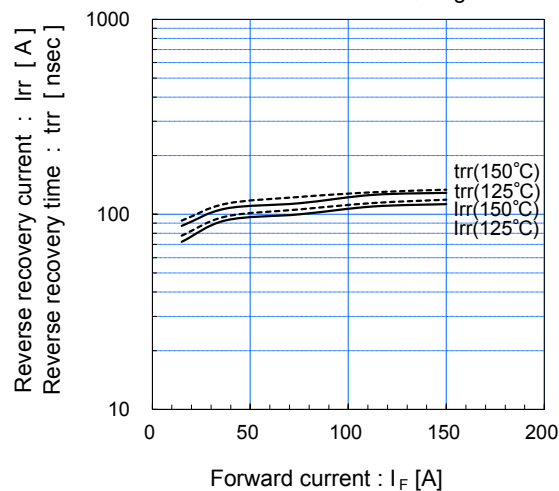
Reverse bias safe operating area (max.)
 $+V_{GE}=15V$, $-V_{GE} \leq 15V$, $R_g \geq 2.2\Omega$, $T_j \leq 150^\circ C$



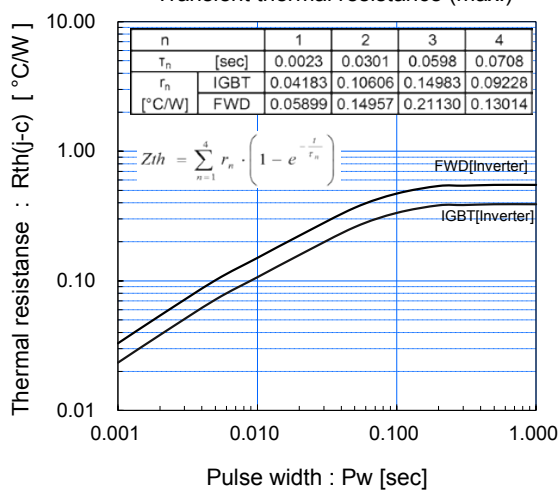
[Inverter]

Forward current vs. forward on voltage (typ.)
chip

[Inverter]

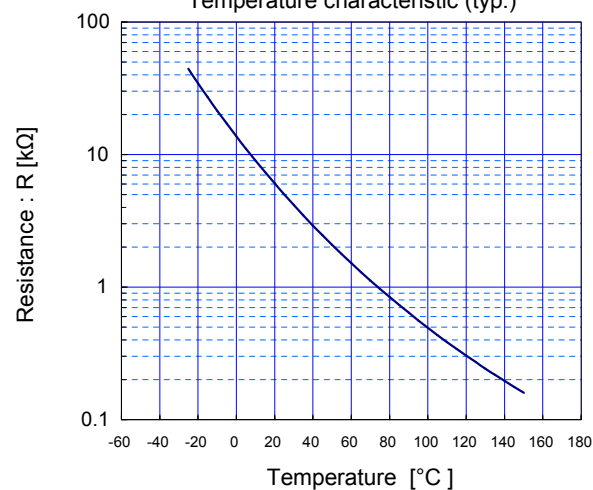
Reverse recovery characteristics (typ.)
V_{CC}=600V, V_{GE}=±15V, R_g=2.2Ω

Transient thermal resistance (max.)

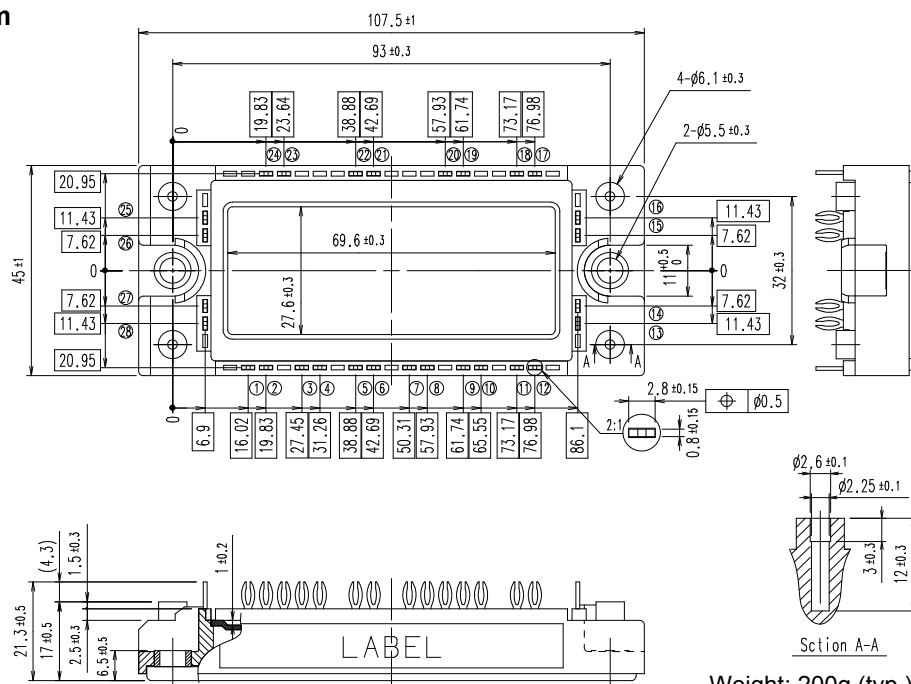


[Thermistor]

Temperature characteristic (typ.)



Outline Drawings, mm



Weight: 200g (typ.)

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IGBT Modules

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