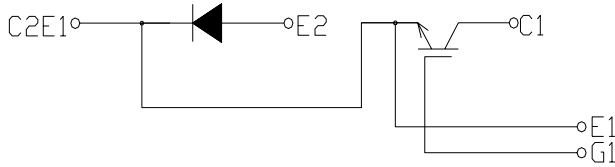


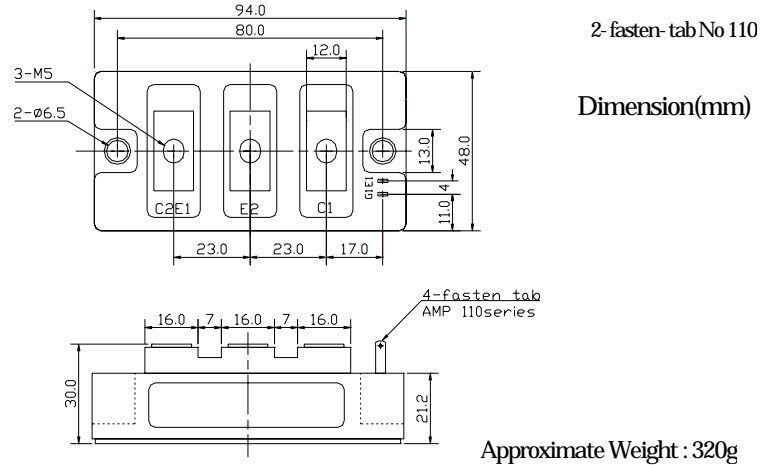
IGBT MODULE Chopper 200A 600V

PCHMB200A6

CIRCUIT



OUTLINE DRAWING



MAXMUM RATINGS (Tc=25°C)

Item	Symbol	PCHMB200A6	Unit
Collector-Emitter Voltage	V_{CES}	600	V
Gate - Emitter Voltage	V_{GES}	+/- 20	V
Collector Current	DC	I_C	200
		1 ms	400
Collector Power Dissipation	P_C	780	W
Junction Temperature Range	T_j	-40 to +150	°C
Storage Temperature Range	T_{sg}	-40 to +125	°C
Isolation Voltage (Terminal to Base AC, 1 min.)	V_{ISO}	2500	V
Mounting Torque	Module Base to Heat sink	3.06	N·m
	Bus Bar to Main Terminals	2.04	

ELECTRICAL CHARACTERISTICS (Tc=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Collector-Emitter Cut-Off Current	I_{CES}	$V_{CE}=600V, V_{GE}=0V$	-	-	2.0	mA	
Gate-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 20V, V_{CE}=0V$	-	-	1.0	μA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=200A, V_{GE}=15V$	-	2.1	2.6	V	
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE}=5V, I_C=200mA$	4.0	-	8.0	V	
Input Capacitance	C_{ies}	$V_{CE}=10V, V_{GE}=0V, f=1MHz$	-	20000	-	pF	
Switching Time	Rise Time	t_r	$V_{CC}=300V$	-	0.15	0.3	μs
	Turn-on Time	t_{on}	$R_L=3\text{ ohm}$	-	0.25	0.4	
	Fall Time	t_f	$R_G=3.6\text{ ohm}$	-	0.2	0.35	
	Turn-off Time	t_{off}	$V_{GE}=\pm 15V$	-	0.45	0.7	

FREE WHEELING DIODES RATINGS & CHARACTERISTICS (Tc=25°C)

Item	Symbol	Rated Value	Unit
Forward Current	DC	I_F	200
	1 ms	I_{FM}	400

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak Forward Voltage	V_F	$I_F=200A, V_{GE}=0V$	-	1.9	2.4	V
Reverse Recovery Time	t_{rr}	$I_F=200A, V_{GE}=-10V, di/dt=200A/\mu s$	-	0.15	0.25	μs

THERMAL CHARACTERISTICS

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Thermal Impedance	IGBT	$R_{th(j-c)}$ Junction to Case	-	-	0.16	°C/W
	DIODE		-	-	0.38	

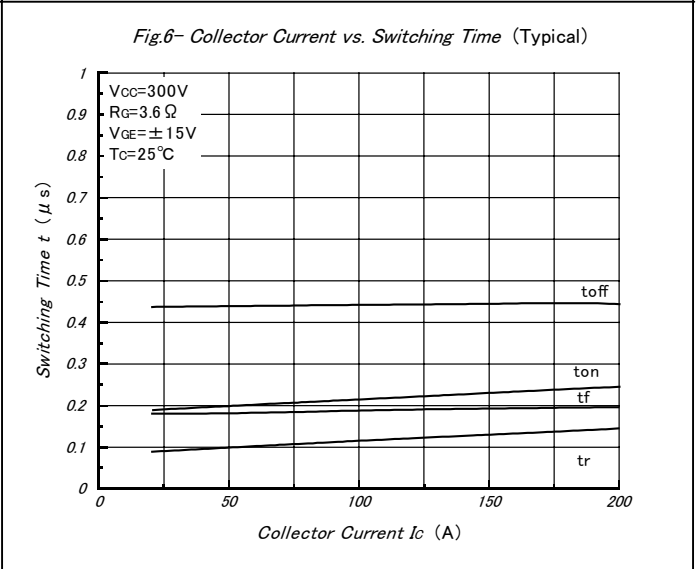
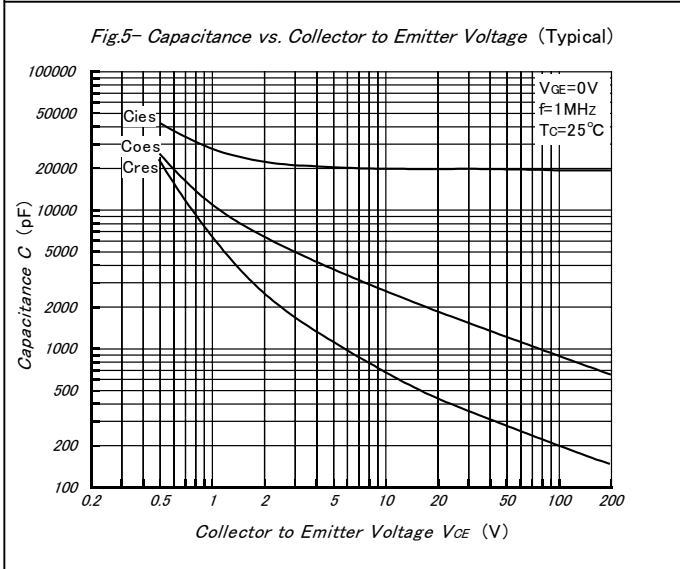
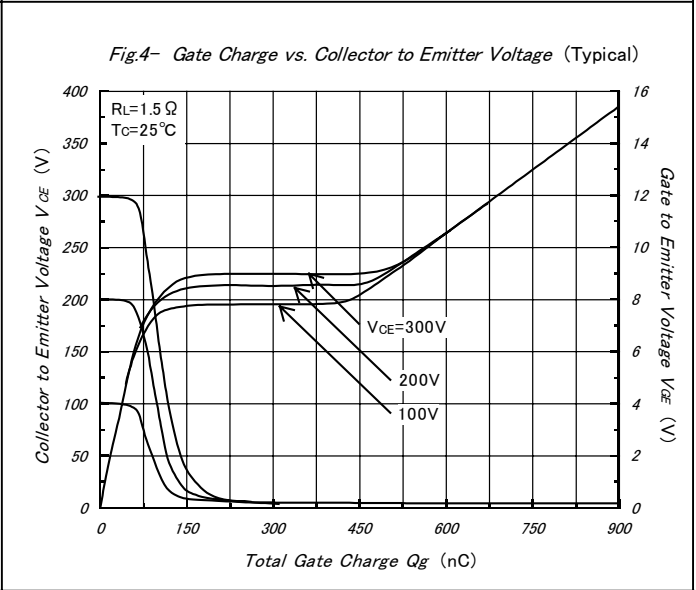
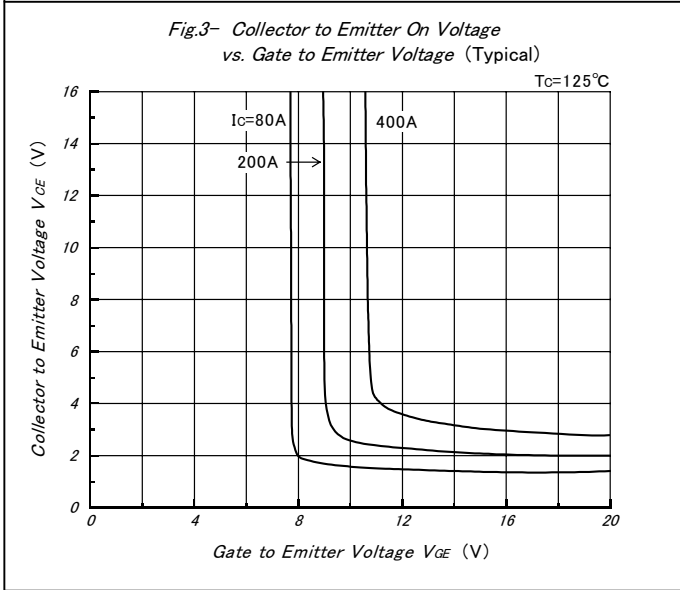
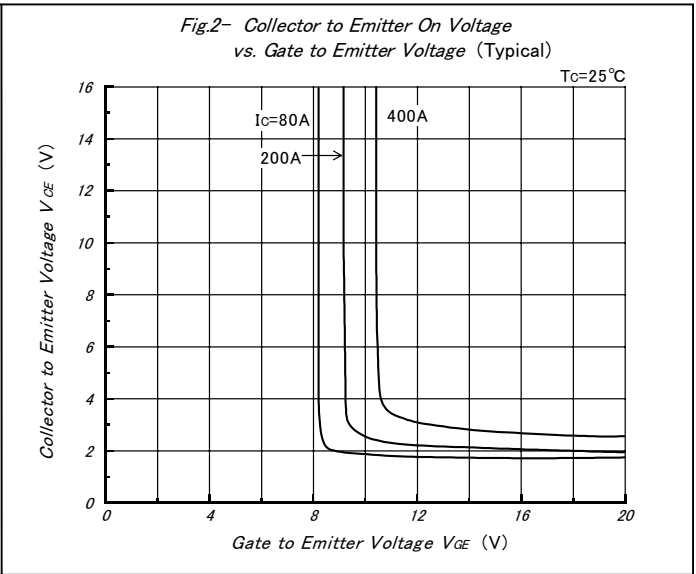
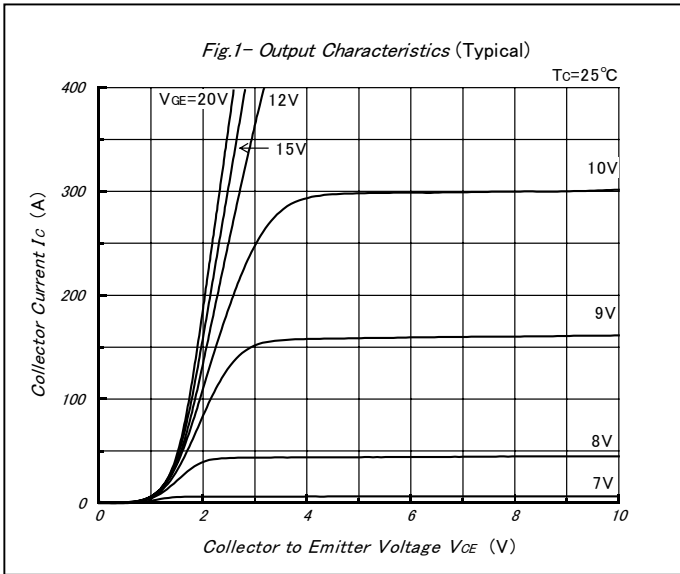


Fig.7- Series Gate Impedance vs. Switching Time (Typical)

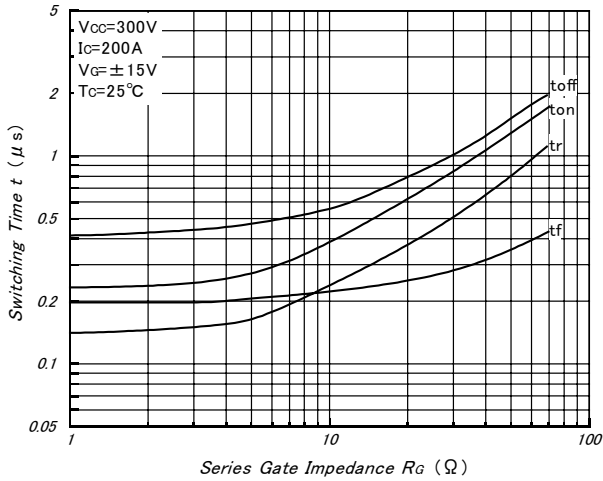


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

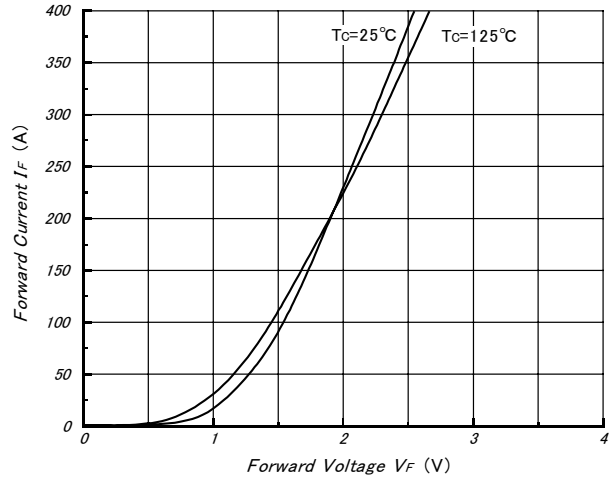


Fig.9- Reverse Recovery Characteristics (Typical)

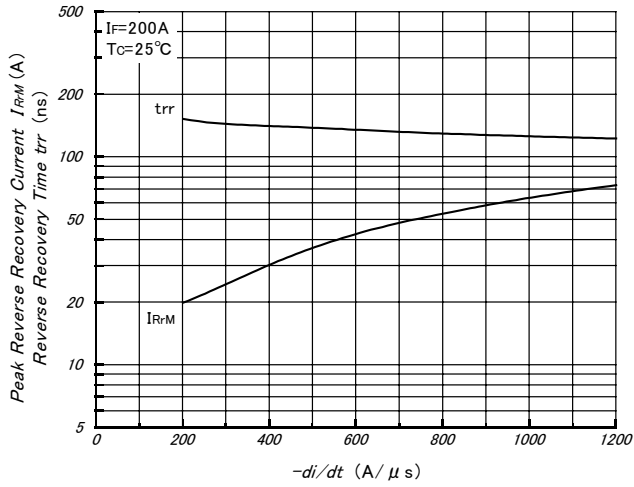


Fig.10- Reverse Bias Safe Operating Area (Typical)

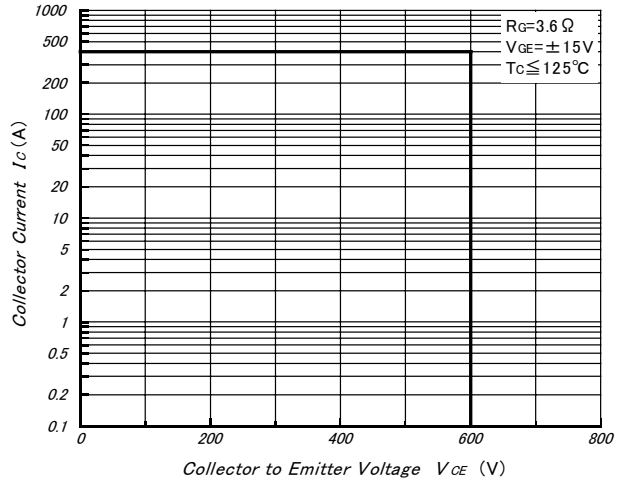


Fig.11- Transient Thermal Impedance

