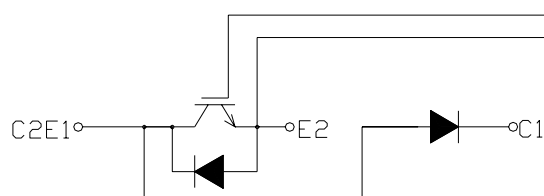


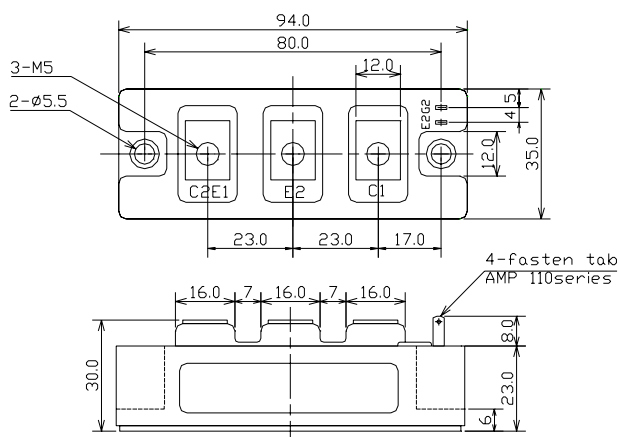
# IGBT MODULE Chopper 50A 600V

## PRHMB50A6A

### CIRCUIT



### OUTLINE DRAWING



2- fasten- tab No 110

Dimension(mm)

Approximate Weight : 220g

### MAXMUM RATINGS (Tc=25°C)

Item	Symbol	PRHMB50A6A	Unit
Collector-Emitter Voltage	$V_{CES}$	600	V
Gate - Emitter Voltage	$V_{GES}$	+/- 20	V
Collector Current	DC	$I_C$	A
	1 ms	$I_C$	
Collector Power Dissipation	$P_C$	250	W
Junction Temperature Range	$T_j$	-40 to +150	°C
Storage Temperature Range	$T_{stg}$	-40 to +125	°C
Isolation Voltage (Terminal to Base AC, 1 min.)	$V_{ISO}$	2500	V
Mounting Torque	Module Base to Heat sink	$F_{TOR}$	N•m
	Bus Bar to Main Terminals		

### ELECTRICAL CHARACTERISTICS (Tc=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter Cut-Off Current	$I_{CES}$	$V_{CE}=600V, V_{GE}=0V$	-	-	1.0	mA
Gate-Emitter Leakage Current	$I_{GES}$	$V_{GE}=+/- 20V, V_{CE}=0V$	-	-	1.0	μA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50A, V_{GE}=15V$	-	2.0	2.5	V
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE}=5V, I_C=50mA$	4.0	-	8.0	V
Input Capacitance	$C_{ies}$	$V_{CE}=10V, V_{GE}=0V, f=1MHz$	-	5000	-	pF
Switching Time	Rise Time	$V_{CC}=300V$ $R_L=6\text{ ohm}$ $V_{GE}=+/- 15V$	-	0.15	0.3	μs
	Turn-on Time		-	0.25	0.4	
	Fall Time		-	0.2	0.35	
	Turn-off Time		-	0.45	0.7	

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

Item	Symbol	Rated Value	Unit
Forward Current	DC	$I_F$	A
	1 ms	$I_{FM}$	

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak Forward Voltage	$V_F$	$I_F=50A, V_{GE}=0V$	-	1.9	2.4	V
Reverse Recovery Time	$t_{rr}$	$I_F=50A, V_{GE}=-10V, di/dt=50A/\mu s$	-	0.15	0.25	μs

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Thermal Impedance	IGBT	Junction to Case	-	-	0.5	°C/W
	DIODE		-	-	1.0	

Fig.1- Output Characteristics (Typical)

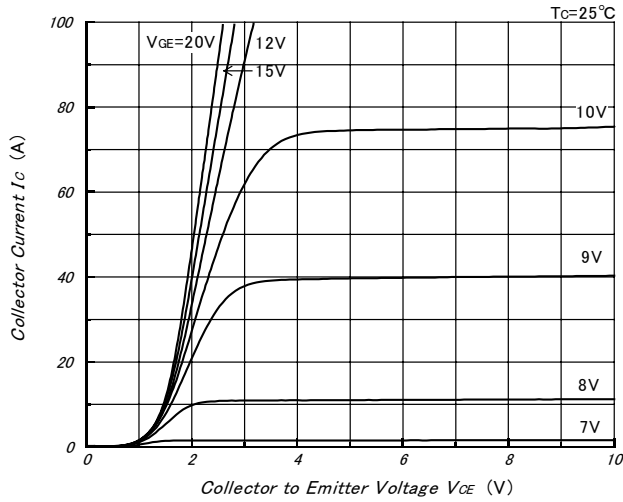


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

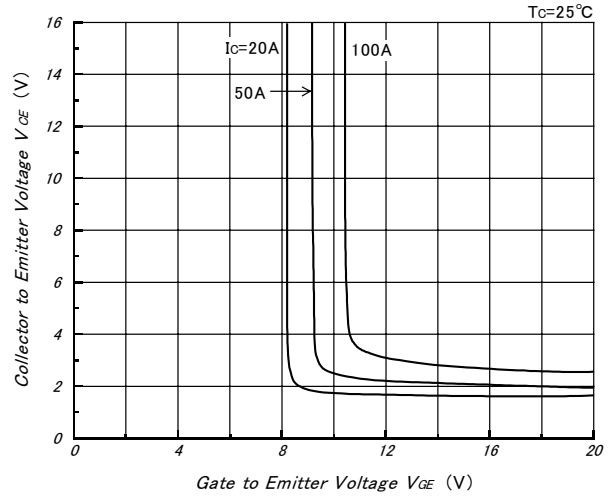


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

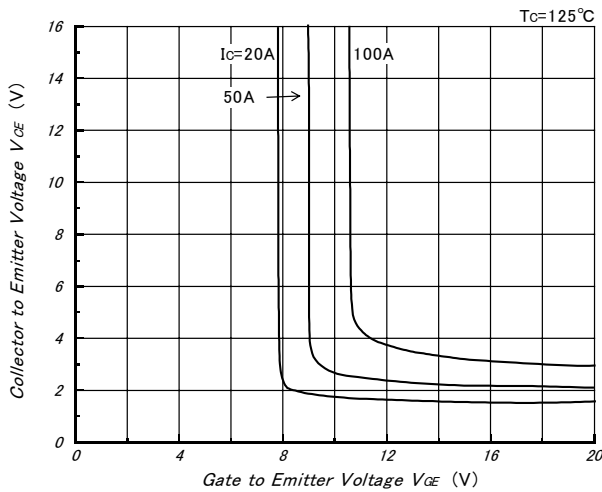


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

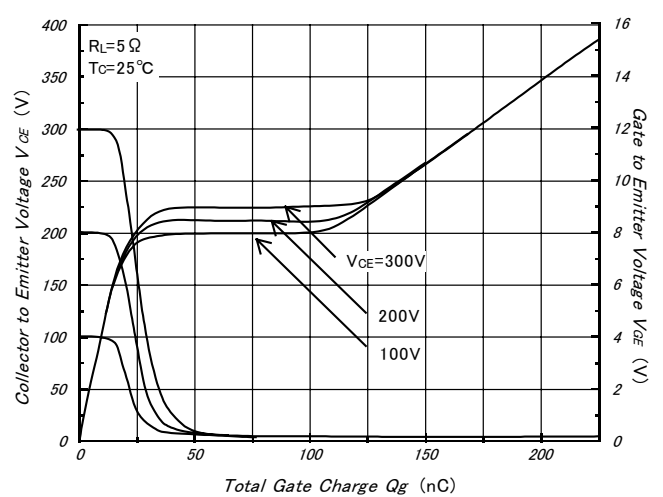


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

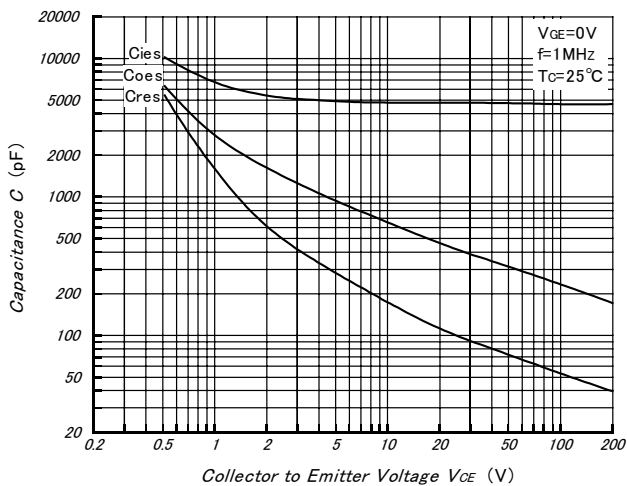


Fig.6- Collector Current vs. Switching Time (Typical)

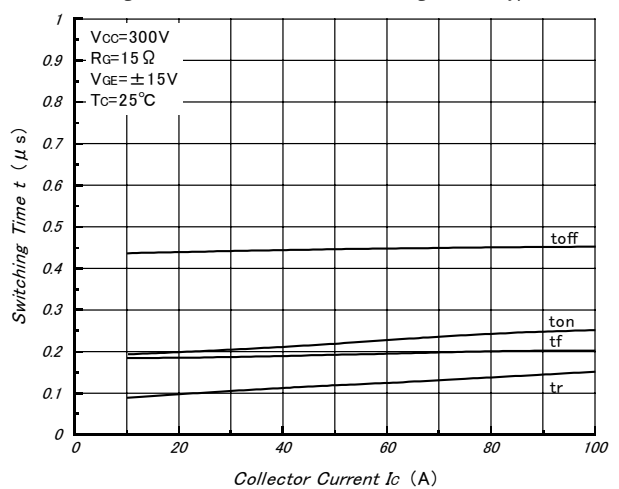


Fig.1- Output Characteristics (Typical)

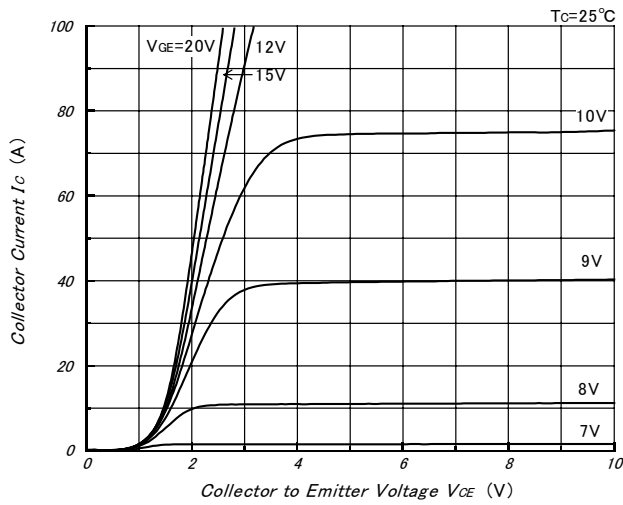


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

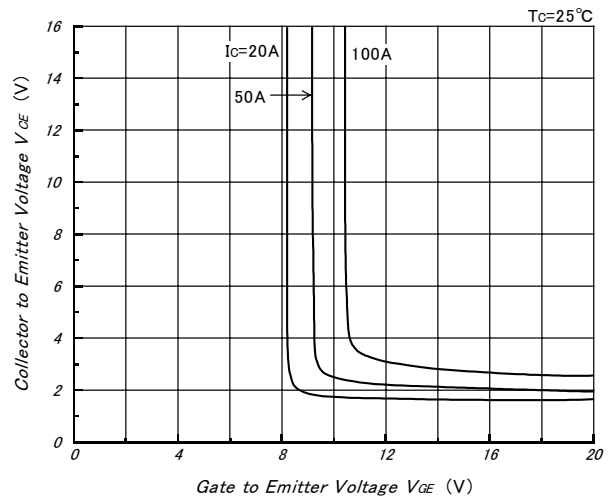


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

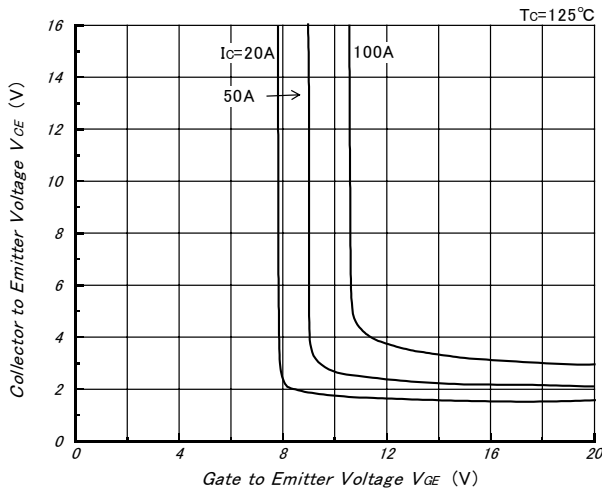


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

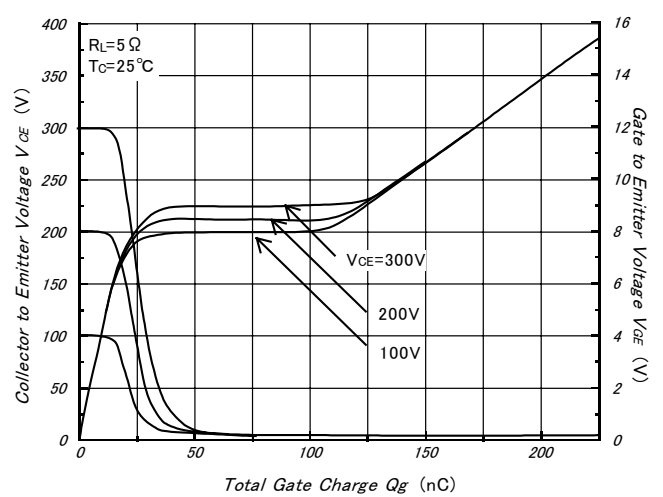


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

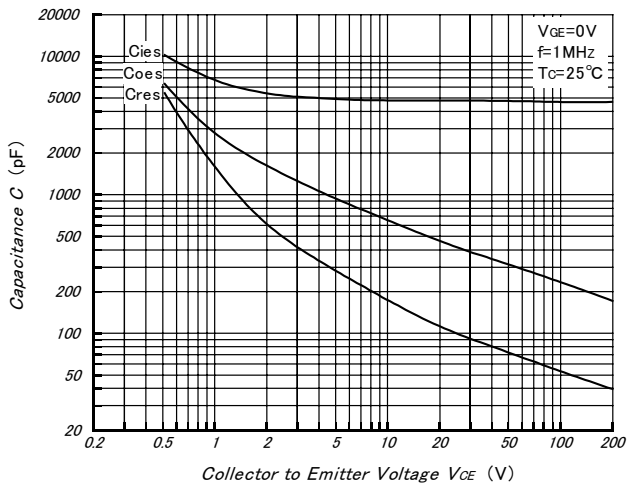


Fig.6- Collector Current vs. Switching Time (Typical)

