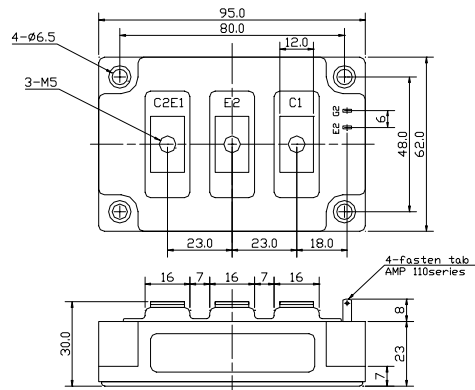
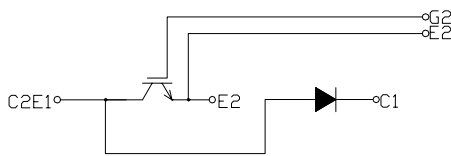


I G B T Module-Chopper

300 A, 600V

PRHMB300A6

☐ 回路図 : *CIRCUIT*
☐ 外形寸法図 : *OUTLINE DRAWING*


Dimension: [mm]

☐ 最大定格 : *MAXIMUM RATINGS* ($T_c = 25^\circ\text{C}$)

重量: 430g

Item	Symbol	Rated Value		Unit
コレクタ・エミッタ間電圧 Collector-Emitter Voltage	V_{CES}	600		V
ゲート・エミッタ間電圧 Gate-Emitter Voltage	V_{GES}	± 20		V
コレクタ電流 Collector Current	DC	I_C	300	A
	1ms	I_{CP}	600	
コレクタ損失 Collector Power Dissipation	P_C	1,040		W
接合温度 Junction Temperature Range	T_j	$-40 \sim +150$		$^\circ\text{C}$
保存温度 Storage Temperature Range	T_{stg}	$-40 \sim +125$		$^\circ\text{C}$
絶縁耐圧(Terminal to Base AC,1minute) Isolation Voltage	V_{iso}	2,500		$V_{(RMS)}$
締め付けトルク Mounting Torque	Module Base to Heatsink	F_{tor}	PCHMB300A6 2 (20.4)	$\text{N} \cdot \text{m}$ ($\text{kgf} \cdot \text{cm}$)
	Bushar to Main Terminal		PCHMB300A6C 3 (30.6)	

☐ 電気的特性 : *ELECTRICAL CHARACTERISTICS* ($T_c = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
コレクタ遮断電流 Collector-Emitter Cut-Off Current	I_{CES}	$V_{CE} = 600\text{V}, V_{GE} = 0\text{V}$	—	—	3.0	mA
ゲート漏れ電流 Gate-Emitter Leakage Current	I_{GES}	$V_{GE} = \pm 20\text{V}, V_{CE} = 0\text{V}$	—	—	1.0	μA
コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 300\text{A}, V_{GE} = 15\text{V}$	—	2.1	2.6	V
ゲートしきい値電圧 Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE} = 5\text{V}, I_C = 300\text{mA}$	4.0	—	8.0	V
入力容量 Input Capacitance	C_{ies}	$V_{CES} = 10\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$	—	30,000	—	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC} = 300\text{V}$ $R_L = 1\Omega$ $R_G = 2.0\Omega$ $V_{GE} = \pm 15\text{V}$	—	0.20	0.40	μs
	ターンオン時間 Turn-on Time		—	0.40	0.75	
	下降時間 Fall Time		—	0.20	0.35	
	ターンオフ時間 Turn-off Time		—	0.60	0.80	

☐ フリーホイーリングダイオードの特性 : *FREE WHEELING DIODE RATINGS & CHARACTERISTICS* ($T_c = 25^\circ\text{C}$)

Item	Symbol	Rated Value		Unit
順電流 Forward Current	DC	I_F	300	A
	1ms	I_{FM}	600	

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
順電圧 Peak Forward Voltage	V_F	$I_F = 300\text{A}, V_{GE} = 0\text{V}$	—	1.9	2.4	V
逆回復時間 Reverse Recovery Time	t_{rr}	$I_F = 300\text{A}, V_{GE} = -10\text{V}$ $di/dt = 300\text{A}/\mu\text{s}$	—	0.15	0.25	μs

☐ 熱的特性 : *THERMAL CHARACTERISTICS*

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Impedance	$R_{th(j-c)}$	Junction to Case	—	—	0.12	$^\circ\text{C}/\text{W}$
			—	—	0.24	

PRHMB300A6

Fig.1- Output Characteristics (Typical)

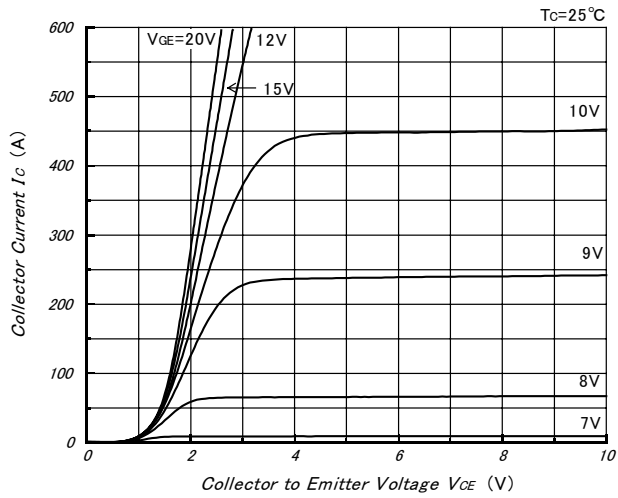


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

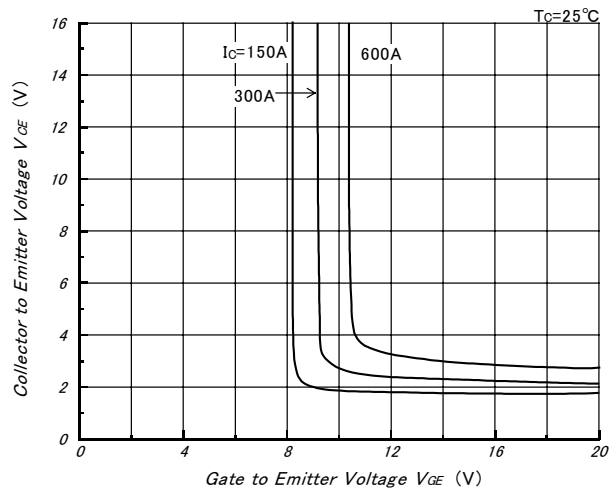


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

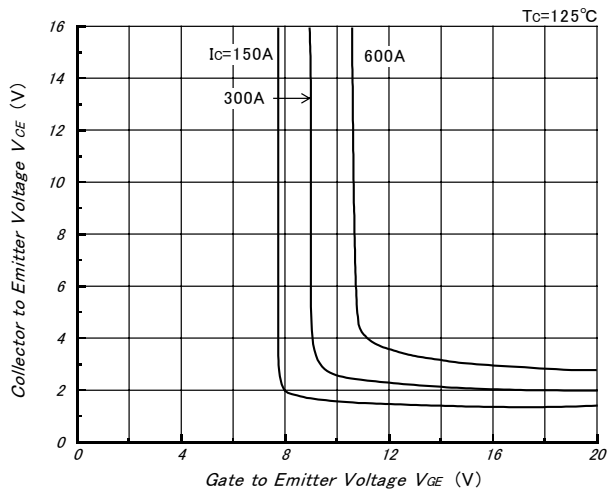


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

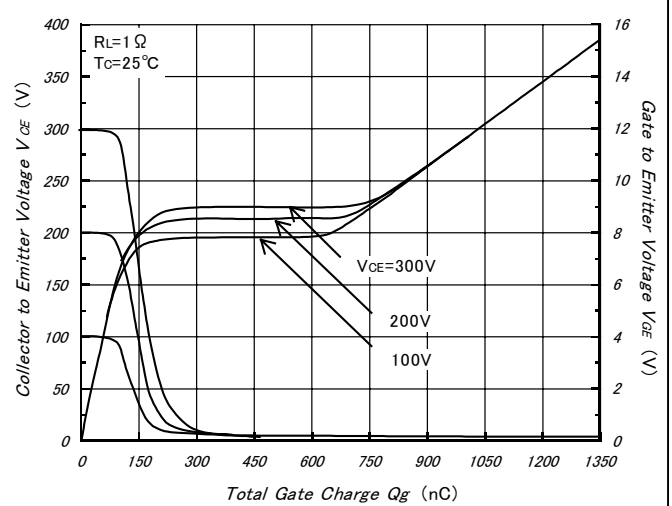


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

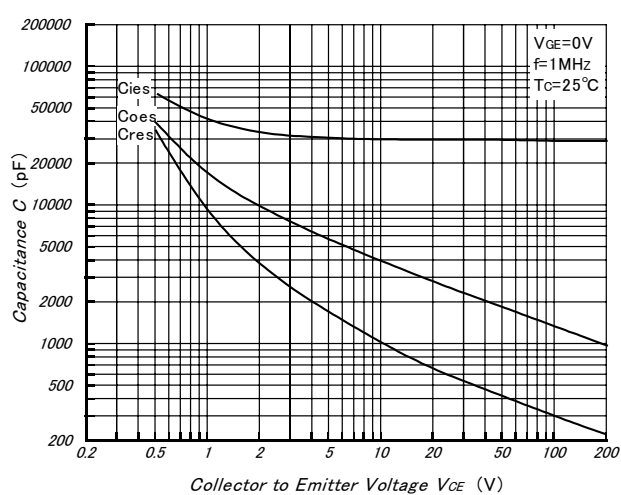
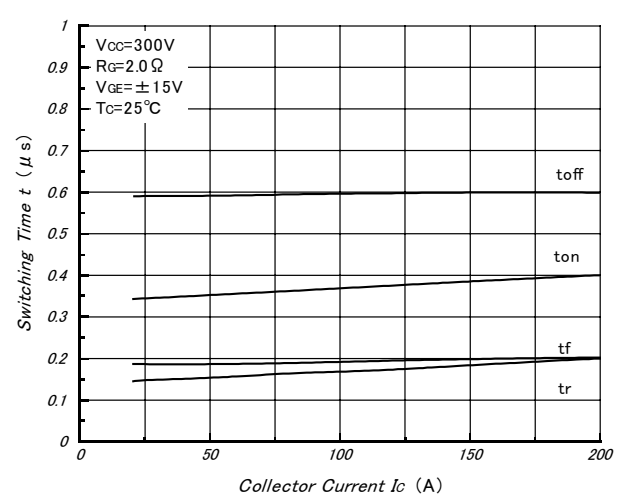


Fig.6- Collector Current vs. Switching Time (Typical)



PRHMB300A6

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

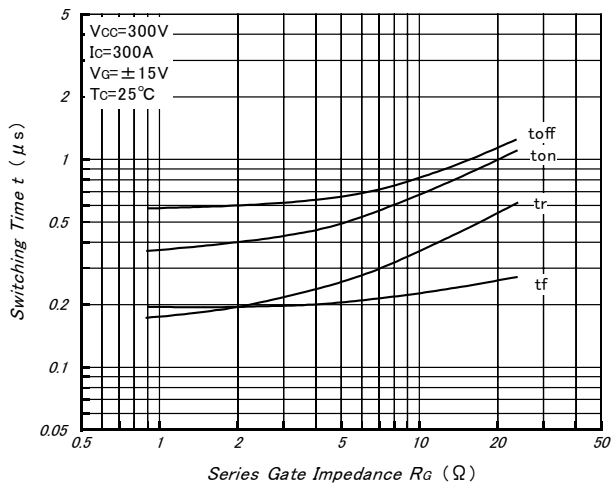


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

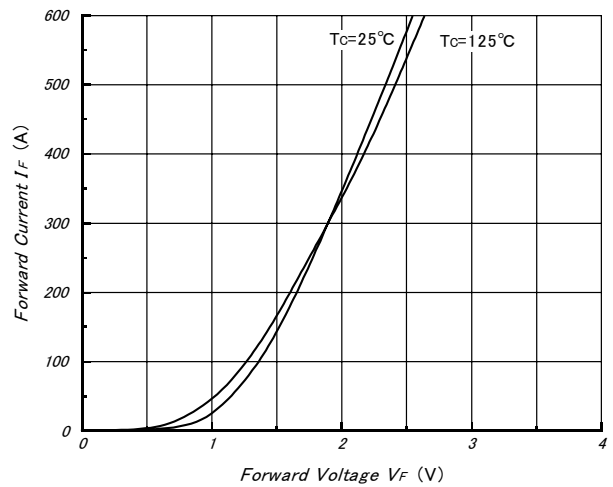


Fig.9- Reverse Recovery Characteristics (Typical)

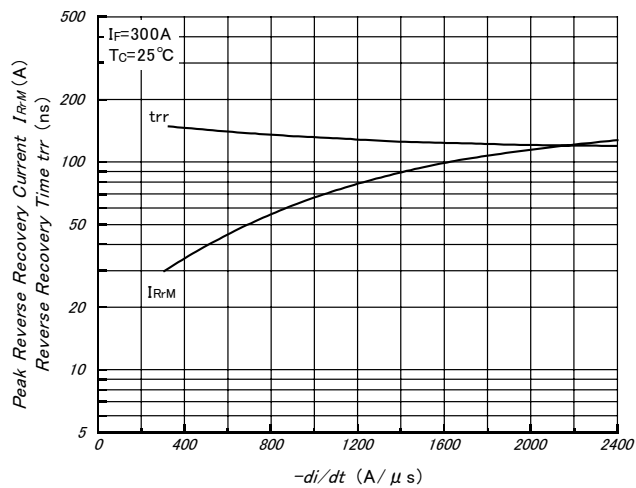


Fig.10- Reverse Bias Safe Operating Area (Typical)

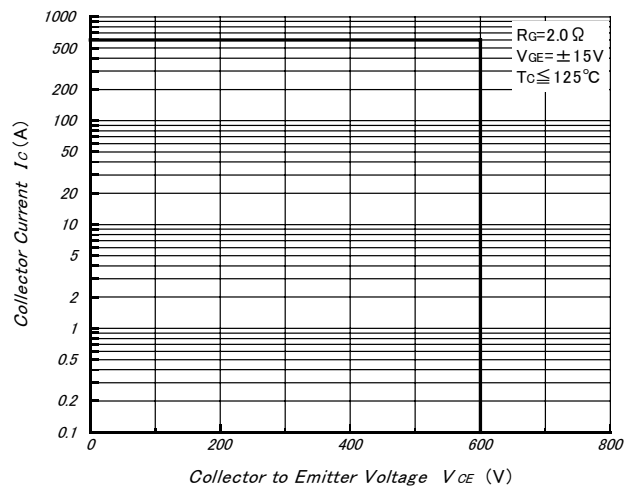


Fig.11- Transient Thermal Impedance

