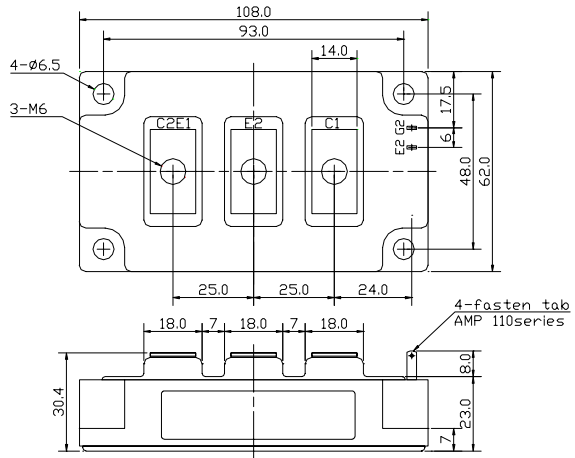
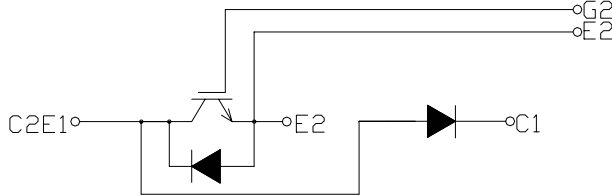


回路図 : **CIRCUIT**

外形寸法図 : **OUTLINE DRAWING**



Dimension: [ mm ]

**最大定格 : MAXIMUM RATINGS** (  $T_c = 25$  )

重量 : 500g

Item	Symbol	Rated Value	Unit
コレクタ・エミッタ間電圧 Collector-Emmitter Voltage	$V_{CES}$	600	V
ゲート・エミッタ間電圧 Gate-Emmitter Voltage	$V_{GES}$	$\pm 20$	V
コレクタ電流 Collector Current	DC	400	A
	1ms	800	
コレクタ損失 Collector Power Dissipation	$P_C$	1,470	W
接合温度 Junction Temperature Range	$T_j$	-40 ~ +150	
保存温度 Storage Temperature Range	$T_{stg}$	-40 ~ +125	
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	3 (30.6)	N · m (kgf · cm)
	Busbar to Main Terminal		

**電気的特性 : ELECTRICAL CHARACTERISTICS** (  $T_c = 25$  )

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
コレクタ遮断電流 Collector-Emmitter Cut-Off Current	$I_{CES}$	$V_{CE} = 600V, V_{GE} = 0V$	-	-	4.0	mA
ゲート漏れ電流 Gate-Emmitter Leakage Current	$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0V$	-	-	1.0	$\mu A$
コレクタ・エミッタ間飽和電圧 Collector-Emmitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 400A, V_{GE} = 15V$	-	2.1	2.6	V
ゲートしきい値電圧 Gate-Emmitter Threshold Voltage	$V_{GE(th)}$	$V_{CE} = 5V, I_C = 400mA$	4.0	-	8.0	V
入力容量 Input Capacitance	$C_{ies}$	$V_{CES} = 10V, V_{GE} = 0V, f = 1MHz$	-	40,000	-	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC} = 300V$ $R_L = 0.75\Omega$ $R_G = 1.6\Omega$ $V_{GE} = \pm 15V$	-	0.25	0.45	$\mu s$
	ターンオン時間 Turn-on Time		-	0.45	0.85	
	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** (  $T_c = 25$  )

Item	Symbol	Rated Value	Unit
順電流 Forward Current	DC	400	A
	1ms	800	

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
順電圧 Peak Forward Voltage	$V_F$	$I_F = 400A, V_{GE} = 0V$	-	1.9	2.4	V
逆回復時間 Reverse Recovery Time	$t_{rr}$	$I_F = 400A, V_{GE} = -10V$ $di/dt = 400A/\mu s$	-	0.15	0.25	$\mu s$

**熱的特性 : THERMAL CHARACTERISTICS**

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Impedance	IGBT	Junction to Case	-	-	0.085	/W
	Diode		-	-	0.20	

PRHMB400A6A

Fig.1- Output Characteristics (Typical)

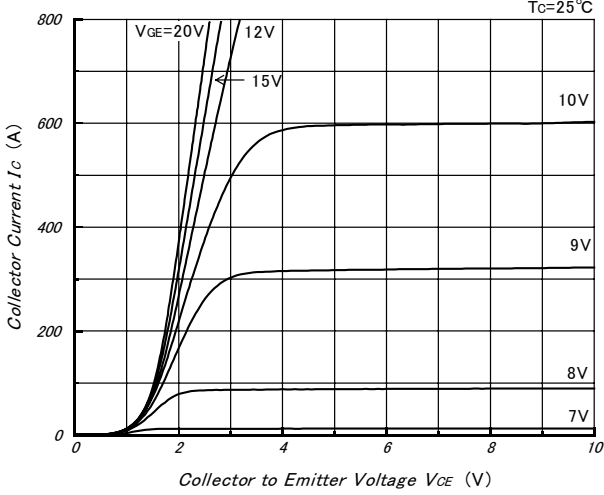


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

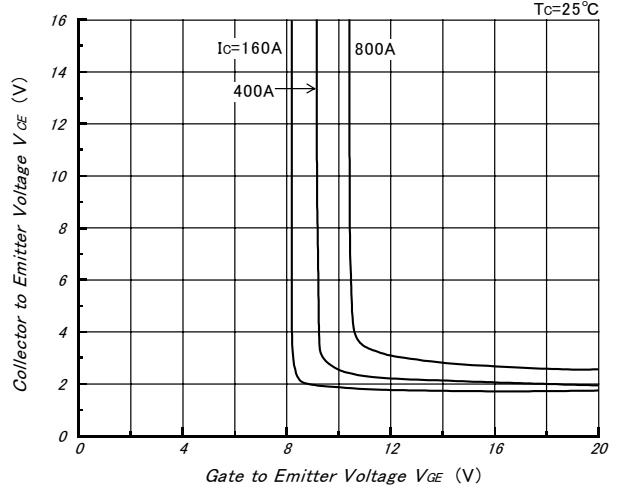


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

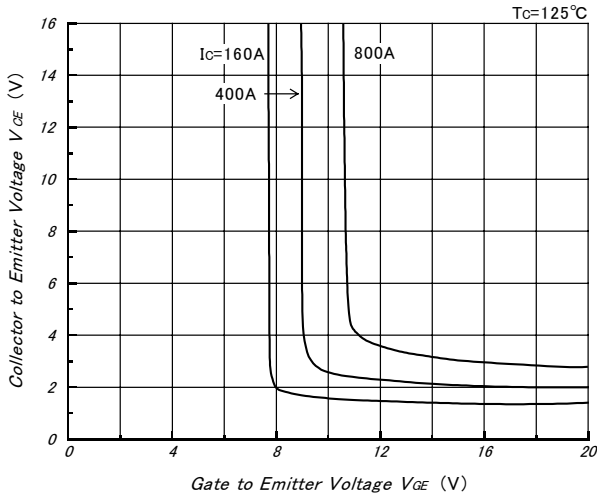


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

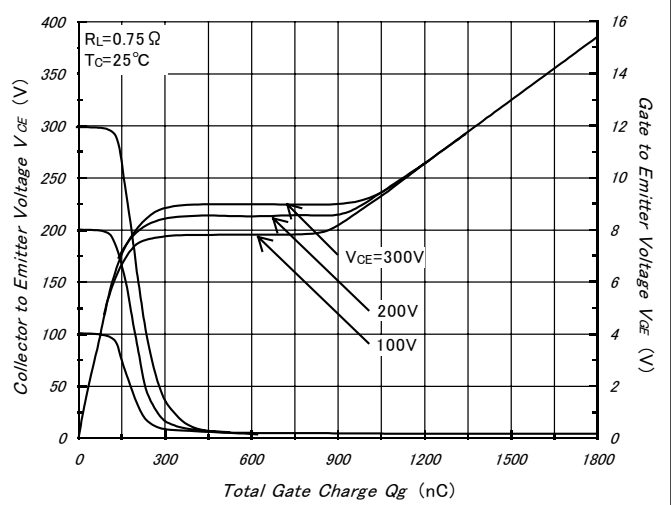


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

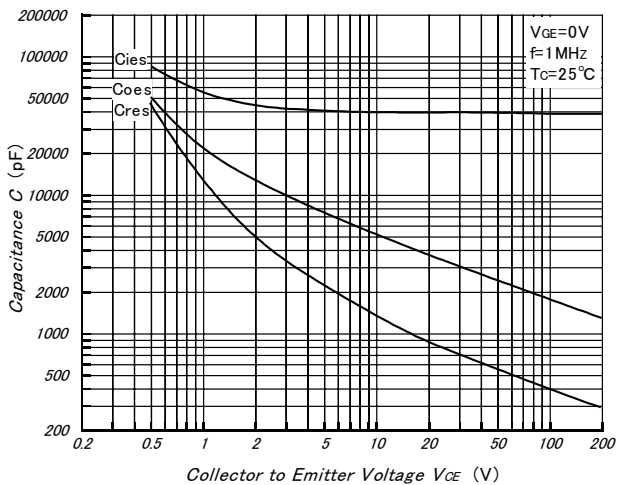
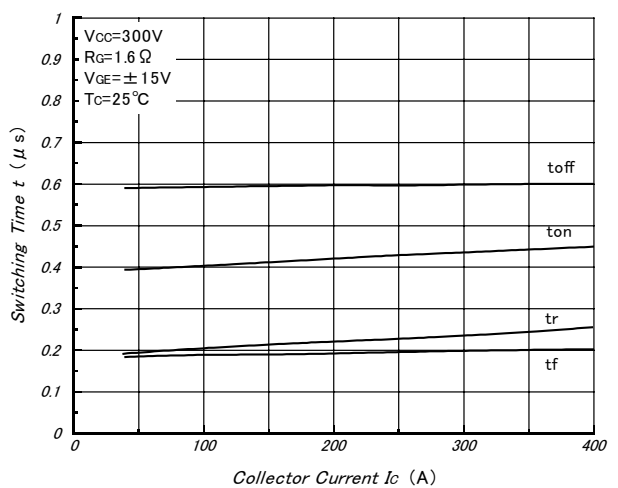


Fig.6- Collector Current vs. Switching Time (Typical)



PRHMB400A6A

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

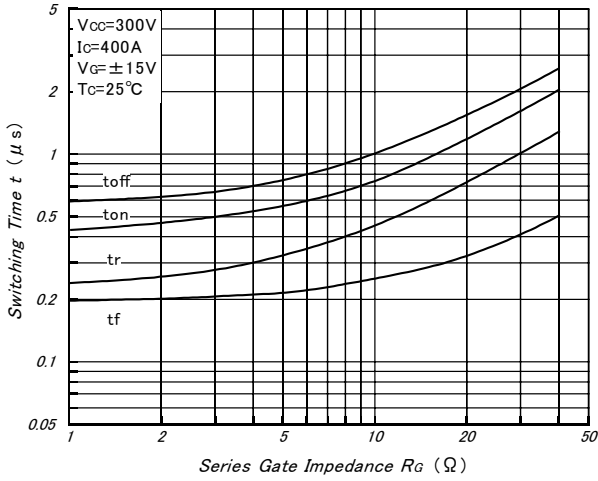


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

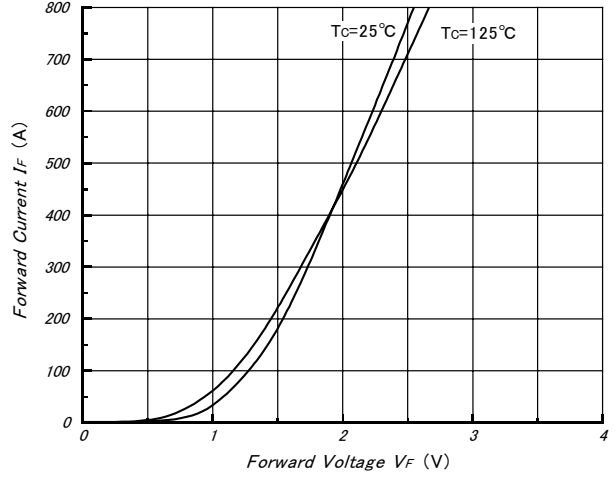


Fig.9- Reverse Recovery Characteristics (Typical)

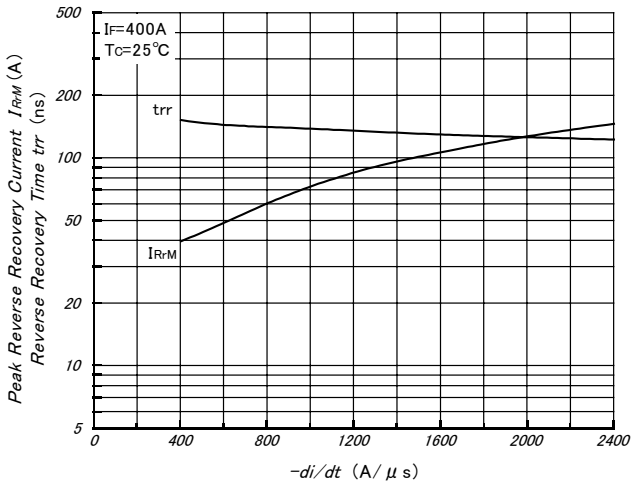


Fig.10- Reverse Bias Safe Operating Area (Typical)

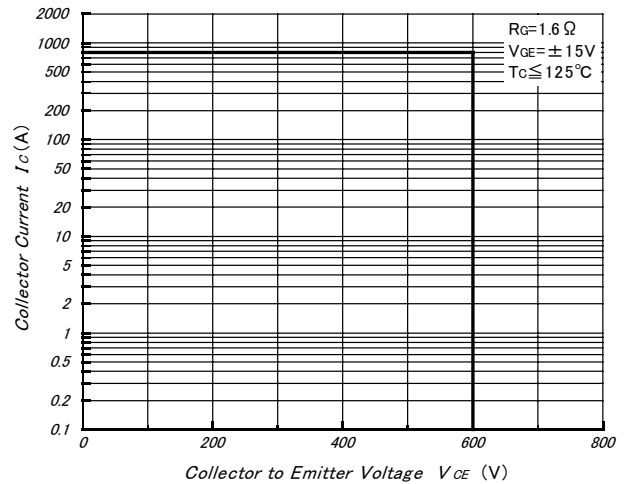


Fig.11- Transient Thermal Impedance

