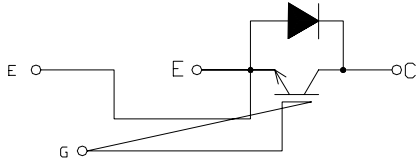
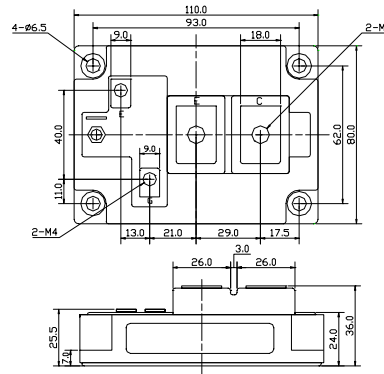


CIRCUIT



OUTLINE DRAWING



Dimension(mm)

Approximate Weight : 650g

MAXIMUM RATINGS (T_c=25°C)

Item	Symbol	PHMB600B12		Unit	
Collector-Emitter Voltage	V _{CEs}	1200		V	
Gate - Emitter Voltage	V _{GEs}	+/- 20		V	
Collector Current	I _C	DC	600	A	
		1 ms	1200		
Collector Power Dissipation	P _C	2770		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	F _{TOR}	Module Base to Heatsink	3	N•m	
		Bus Bar to Main Terminals	M4		1.4
			M8		10.5

ELECTRICAL CHARACTERISTICS (T_c=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Emitter Cut-Off Current	I _{CEs}	V _{CE} =1200V, V _{GE} =0V	-	-	12.0	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 =600A, V _{GE} =15V	-	1.9	2.4	V
Gate-Emitter Threshold Voltage	V _{GE(th)}	V _{CE} =5V, I _C =600mA	4.0	-	8.0	V
Input Capacitance	C _{ies}	V _{CE} =10V, V _{GE} =0V, f=1MHz	-	33000	-	pF
Switching Time	Rise Time	V _{CC} = 600V R _L = 1.0 ohm R _C = 1.0 ohm V _{GE} = +/- 15V	-	0.25	0.45	µs
	Turn-on Time		-	0.40	0.70	
	Fall Time		-	0.25	0.35	
	Turn-off Time		-	0.80	1.10	

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

Item	Symbol	Rated Value		Unit
Forward Current	I _F	DC	600	A
		1 ms	1200	

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak Forward Voltage	V _F	I _F =600A, V _{GE} =0V	-	1.9	2.4	V
Reverse Recovery Time	t _{rr}	I _F =600A, V _{GE} =-10V, di/dt=1200A/µs	-	0.25	0.35	µs

THERMAL CHARACTERISTICS

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Thermal Impedance	R _{th(j-ø)}	Junction to Case	-	-	0.044	°C/W
			-	-	0.085	

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Fig.1- Output Characteristics (Typical)

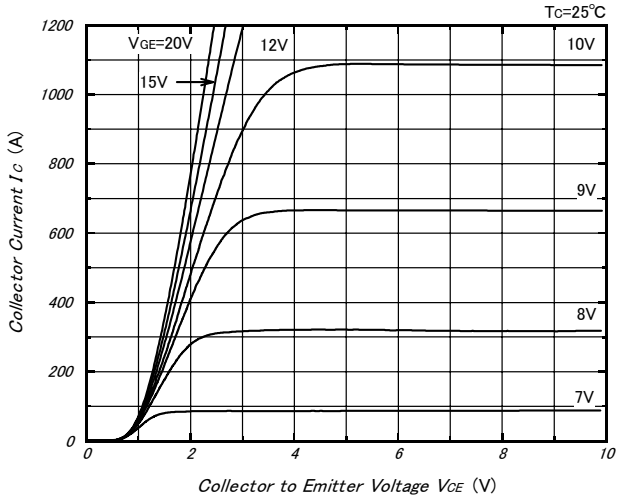


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

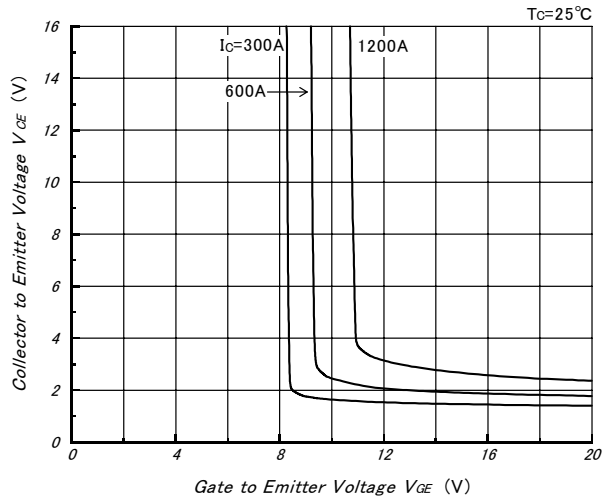


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

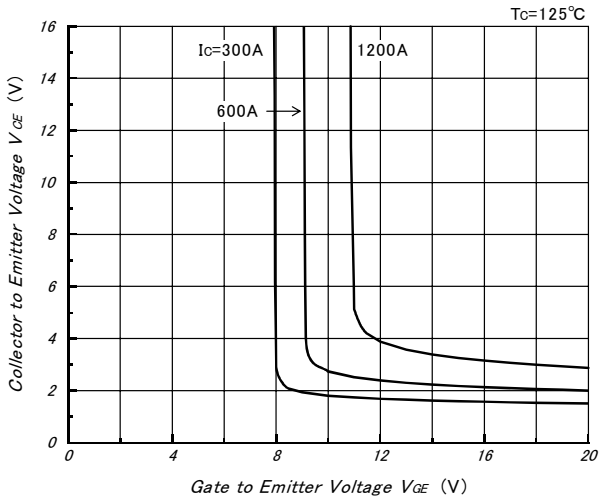


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

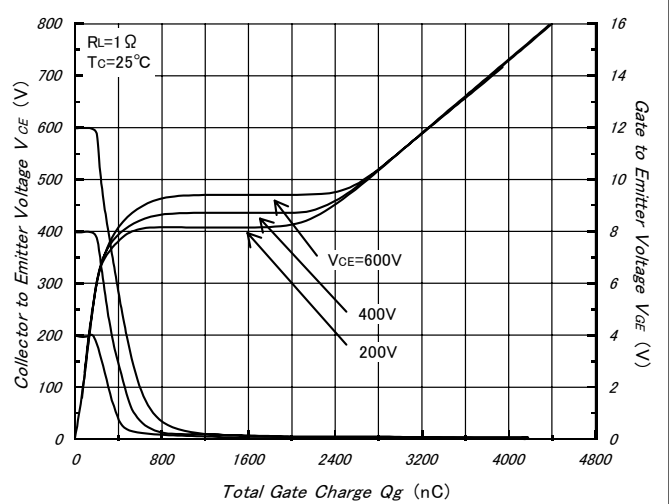


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

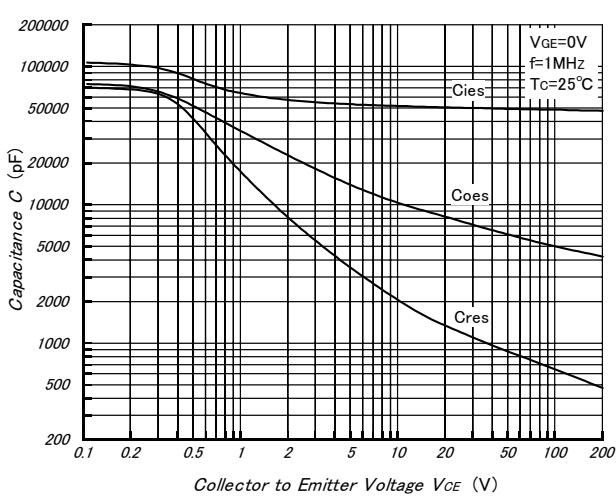
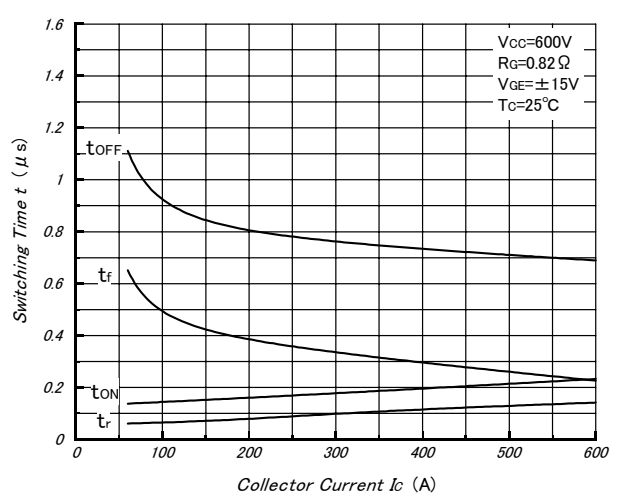


Fig.6- Collector Current vs. Switching Time (Typical)



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

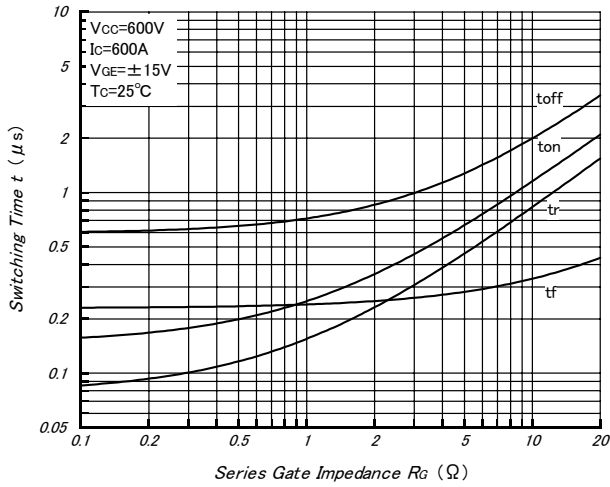


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

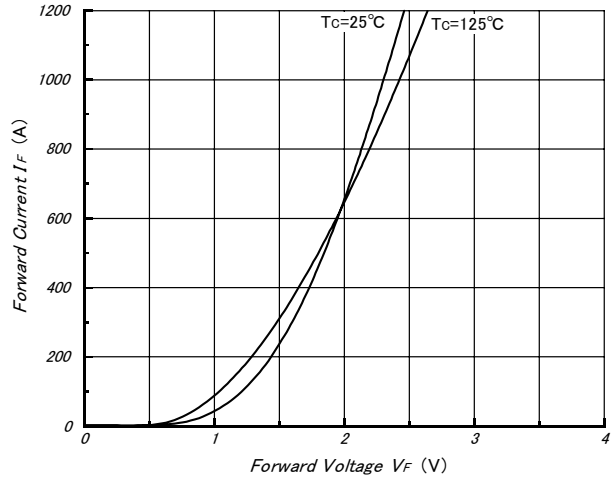


Fig.9- Reverse Recovery Characteristics (Typical)

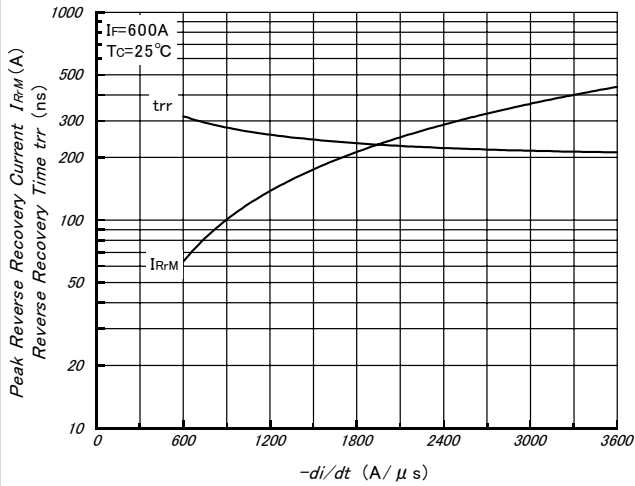


Fig.10- Reverse Bias Safe Operating Area (Typical)

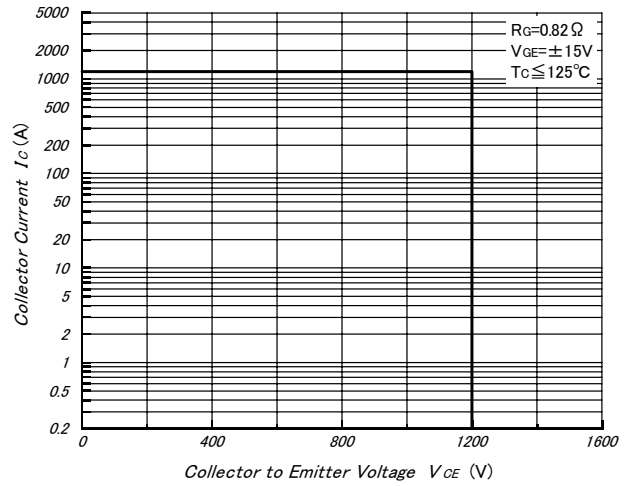


fig11-Transient Thermal Impedance

