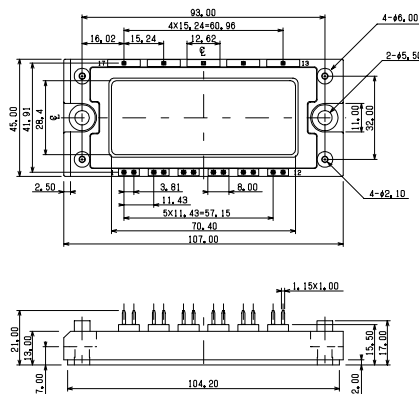
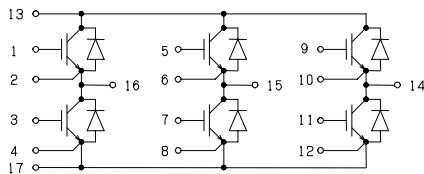


IGBT Module -Six-Pack 50A,600V

PTMB50A6C

□ 回路図 : **CIRCUIT**

□ 外形寸法図 : **OUTLINE DRAWING**



Dimension: [mm]

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

重量 : 190 g

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	50	A
	1ms I_{CP}	100	
コレクタ損失 Collector Power Dissipation	P_C	190	W
接合温度 Junction Temperature Range	T_J	$-40 \sim +150$	
保存温度 Storage Temperature Range	T_{stg}	$-40 \sim +125$	
絶縁耐圧 (Terminal to Base AC, 1 minute) Isolation Voltage	V_{ISO}	2500	$V_{(RMS)}$
締め付けトルク Mounting Torque	Module Base to Heatsink F_{tor}	2 (20.4)	N・m (kgf・cm)

□ 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-Emitter Cut-Off Current	I_{CES}	$V_{CE} = 600V, V_{GE} = 0V$	-	-	1.0	mA
ゲート漏れ電流 Gate-Emitter Leakage Current	I_{GES}	$V_{GE} = \pm 20V, V_{CE} = 0V$	-	-	1.0	μA
コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50A, V_{GE} = 15V$	-	2.0	2.5	V
ゲートしきい値電圧 Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{CE} = 5V, I_C = 50mA$	4.0	-	8.0	V
入力容量 Input Capacitance	C_{ies}	$V_{CE} = 10V, V_{GE} = 0V, f = 1MHz$	-	5000	-	pF
スイッチング時間 Switching Time	上昇時間 Rise Time t_r	$V_{CC} = 300V, R_L = 6\Omega, R_G = 15\Omega, V_{GE} = \pm 15V$	-	0.15	0.3	μs
	ターンオン時間 Turn-on Time t_{on}		-	0.25	0.4	
	下降時間 Fall Time t_f		-	0.2	0.35	
	ターンオフ時間 Turn-off Time t_{off}		-	0.45	0.7	

□ フリーホイール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 I_F	50	A
	1ms I_{FM}	100	

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

□ 熱的特性 : **THERMAL CHARACTERISTICS**

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Impedance	IGBT	Junction to Case	-	-	0.65	/W
	Diode		-	-	1.48	

PTMB50A6C

Fig.1- Output Characteristics (Typical)

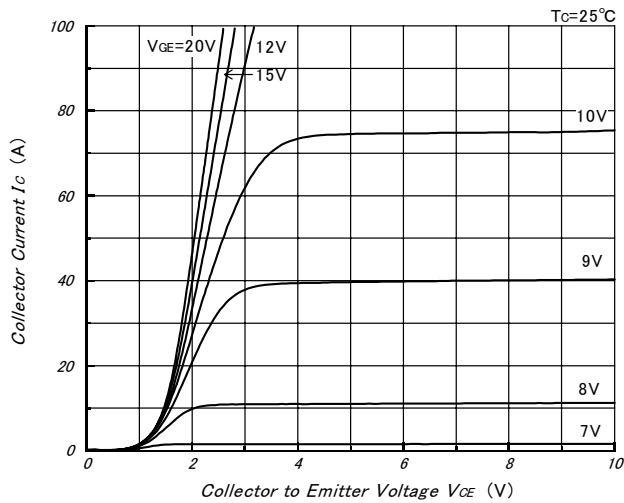


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

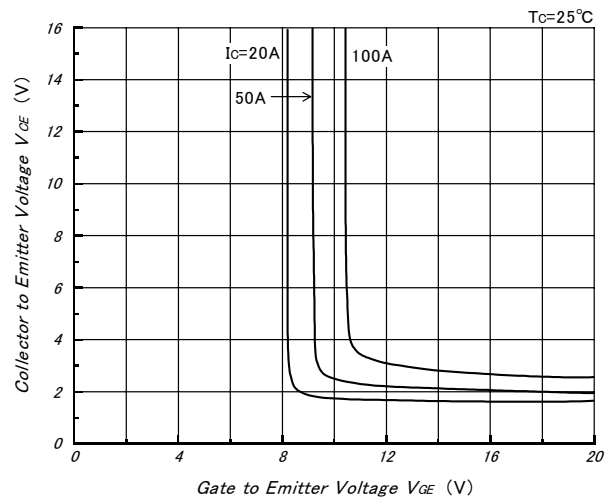


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

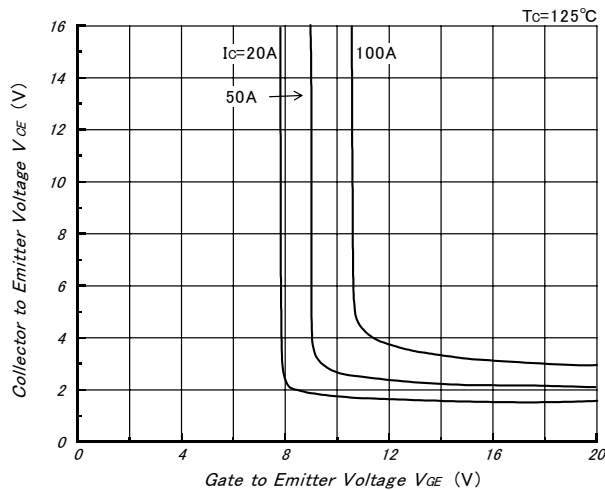


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

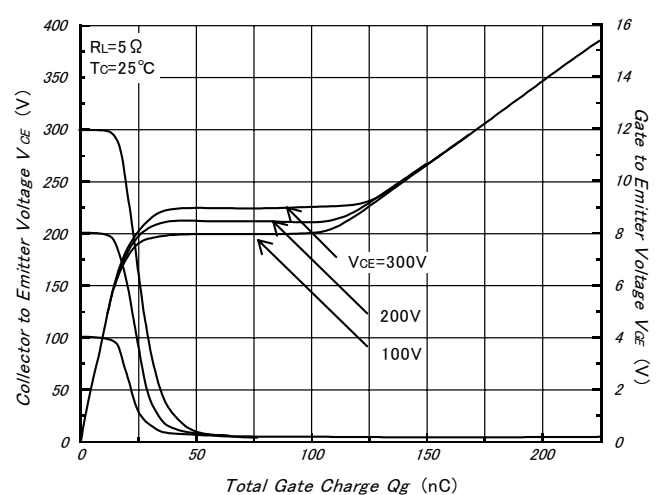


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

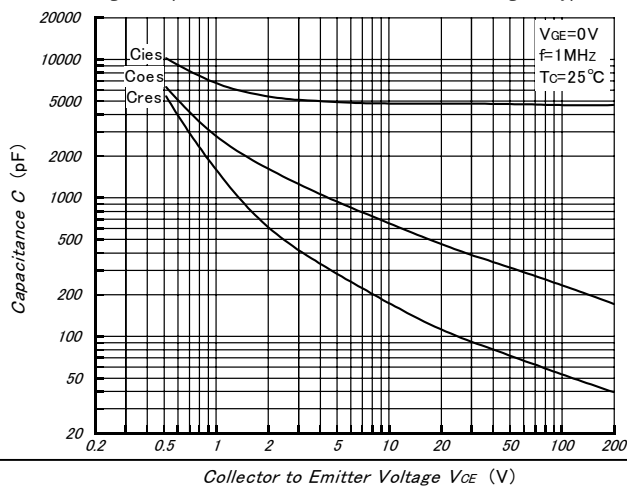
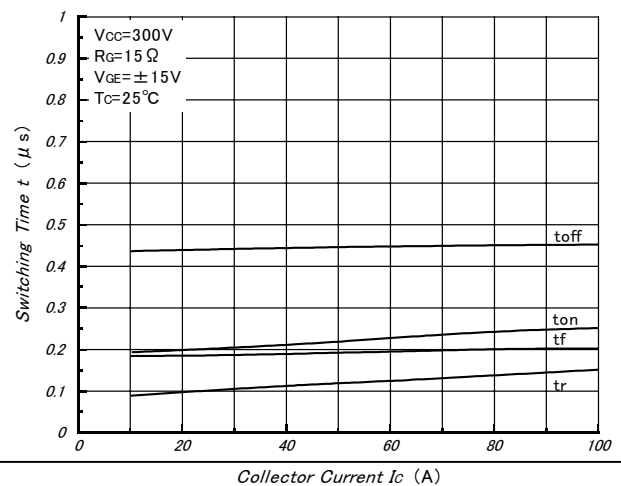


Fig.6- Collector Current vs. Switching Time (Typical)



PTMB50A6C

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

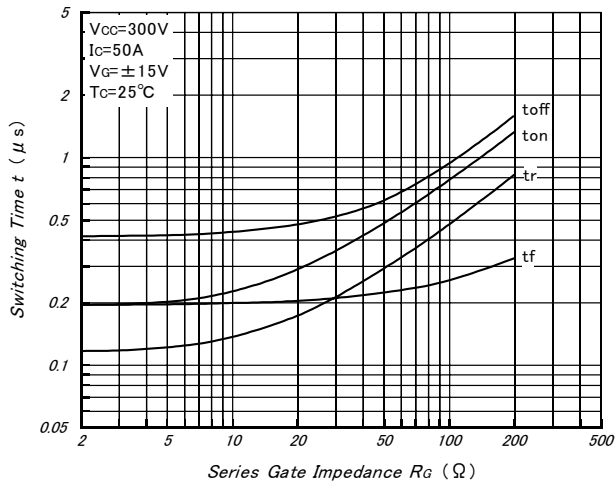


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

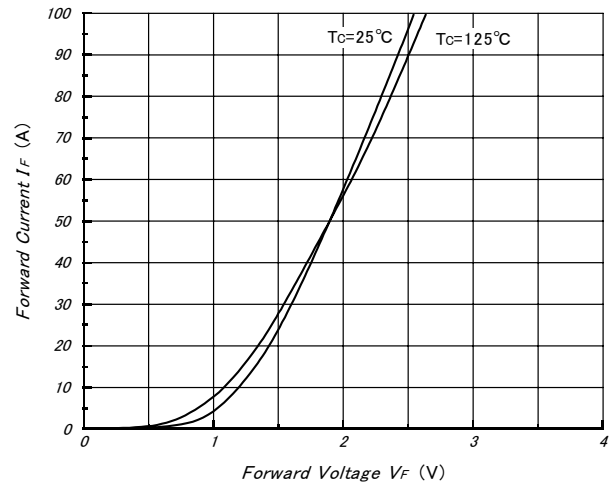


Fig.9- Reverse Recovery Characteristics (Typical)

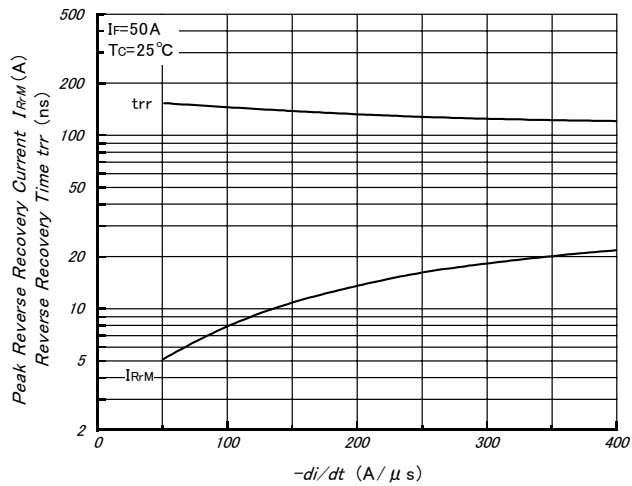


Fig.10- Reverse Bias Safe Operating Area (Typical)

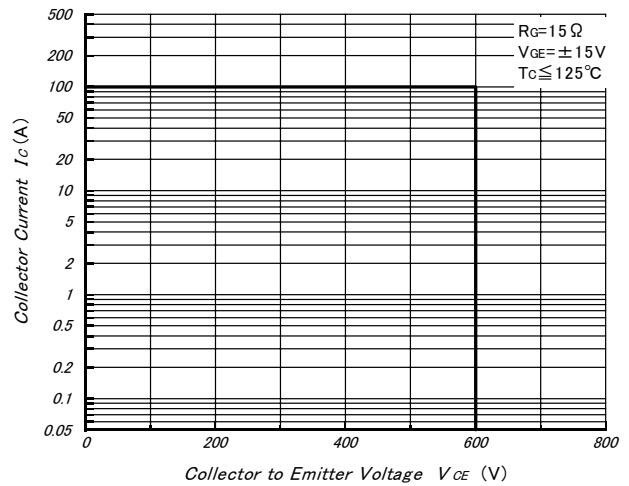


Fig.11- Transient Thermal Impedance

