

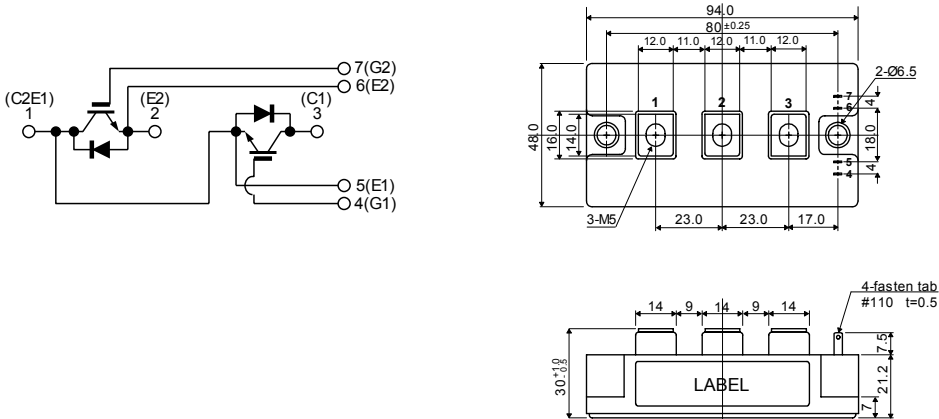
IGBT Module-Dual

200A, 600V

PDMB200E6

☐ 回路図 : CIRCUIT

☐ 外形寸法図 : OUTLINE DRAWING



Dimension: [mm]

☐ 最大定格 : MAXIMUM RATINGS (T_c = 25℃)

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	200	A
	1ms	I _{CP}	400	
コレクタ損失 Collector Power Dissipation		P _C	780	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, 1 minute) Isolation Voltage		V _{ISO}	2,500	V (RMS)
締め付けトルク Mounting Torque	Module Base to Heatsink	F _{tor}	3 (30.6)	N・m (kgf・cm)
	Busbar to Main Terminal		2 (20.4)	

☐ 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} = ±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 = 200A, V _{GE} = 15V	—	2.1	2.6	V
ゲートしきい値電圧 Gate-Emitter Threshold Voltage		V _{GE(th)}	V _{CE} = 5V, I _C = 200mA	4.0	—	8.0	V
入力容量 Input Capacitance		C _{ies}	V _{CE} = 10V, V _{GE} = 0V, f = 1MHz	—	10,000	—	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	t _r	V _{CC} = 300V R _L = 1.5Ω R _G = 3.6Ω V _{GE} = ±15V	—	0.15	0.30	μs
	ターンオン時間 Turn-on Time	t _{on}		—	0.25	0.40	
	下降時間 Fall Time	t _f		—	0.10	0.35	
	ターンオフ時間 Turn-off Time	t _{off}		—	0.35	0.70	

☐ 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	I _F	200	A
	1ms	I _{FM}	400	

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
順電圧 Peak Forward Voltage		V _F	I _F = 200A, V _{GE} = 0V	—	1.9	2.4	V
逆回復時間 Reverse Recovery Time		t _{rr}	I _F = 200A, V _{GE} = -10V di/dt = 400A/μs	—	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	R _{th(j-c)}	Junction to Case (T _c 測定点チップ直下)	—	—	0.16	℃/W
	Diode			—	—	0.38	

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Fig.1- Output Characteristics (Typical)

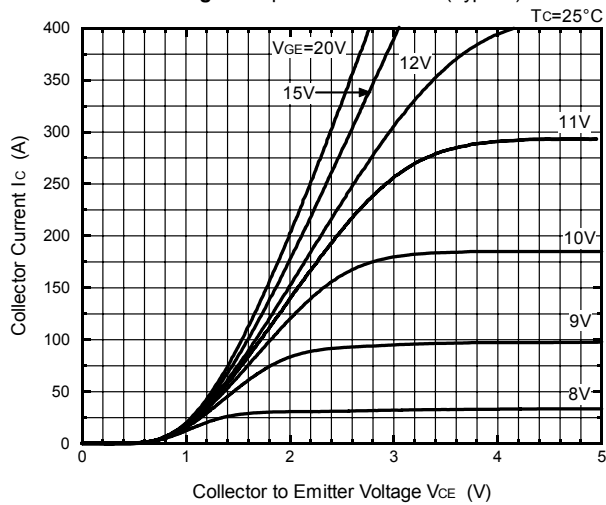


Fig.2- Output Characteristics (Typical)

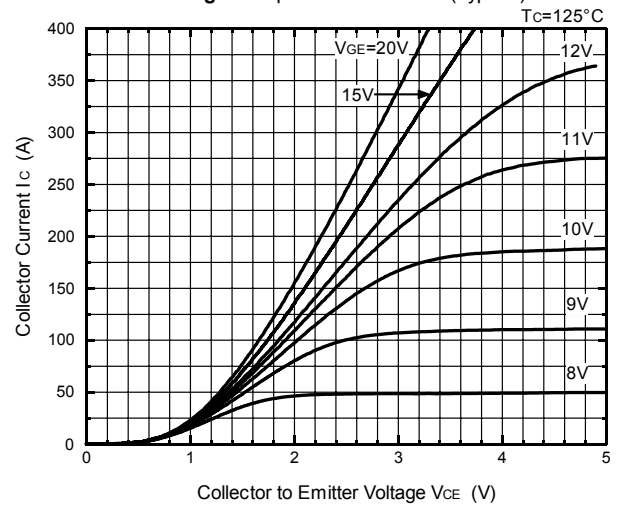


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

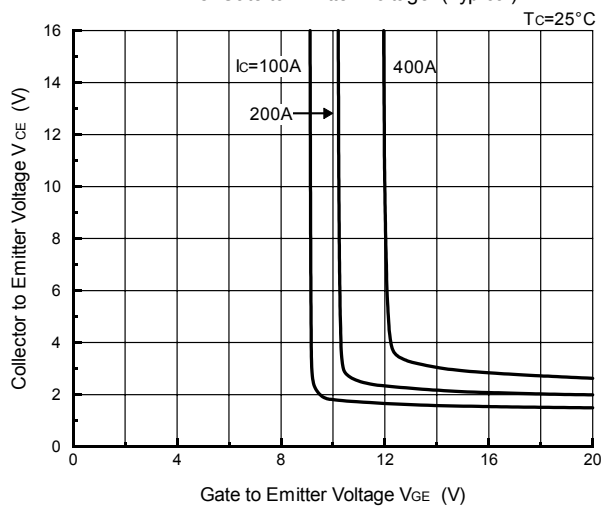


Fig.4- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

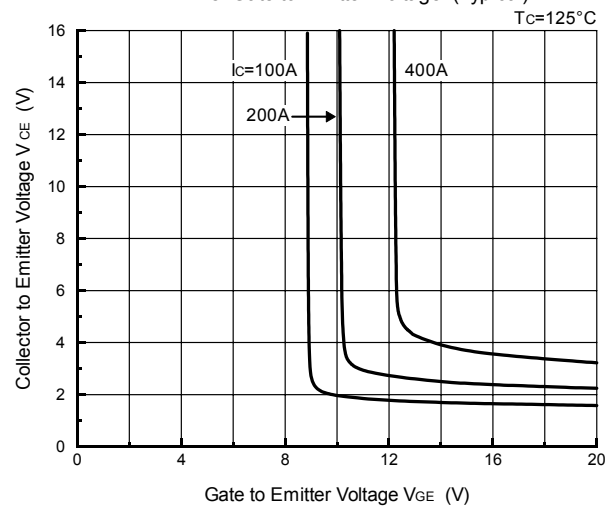


Fig.5- Gate Charge vs. Collector to Emitter Voltage (Typical)

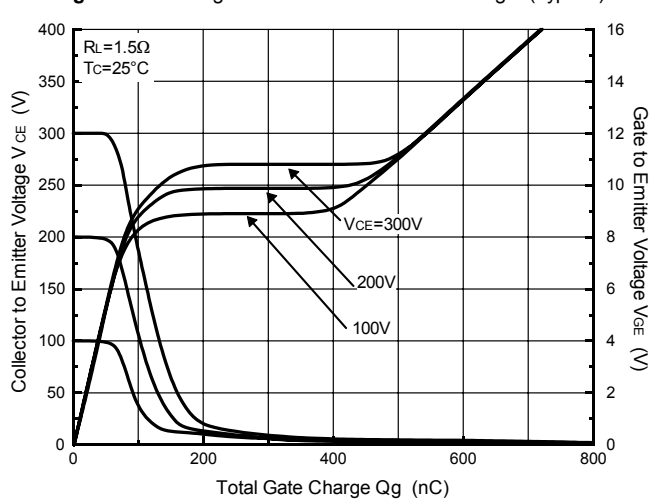
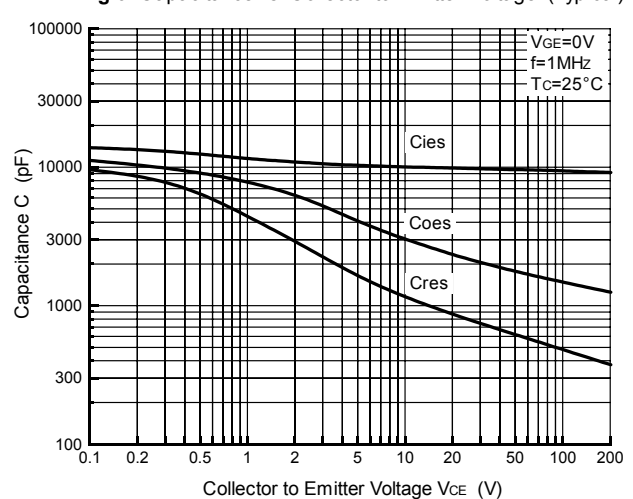


Fig.6- Capacitance vs. Collector to Emitter Voltage (Typical)



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Fig.7- Collector Current vs. Switching Time (Typical)

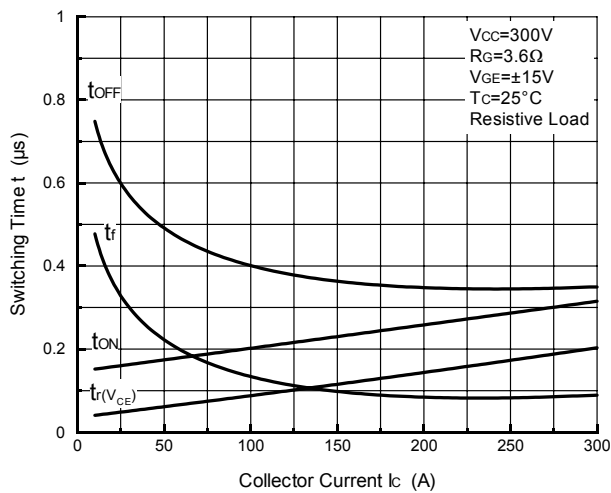


Fig.8- Series Gate Impedance vs. Switching Time (Typical)

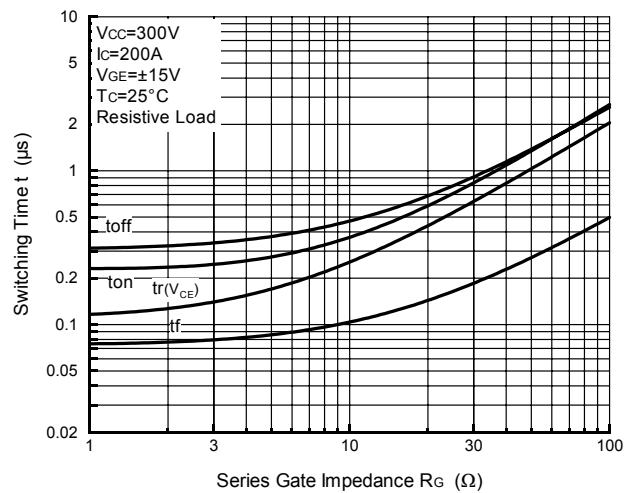


Fig.9- Collector Current vs. Switching Time

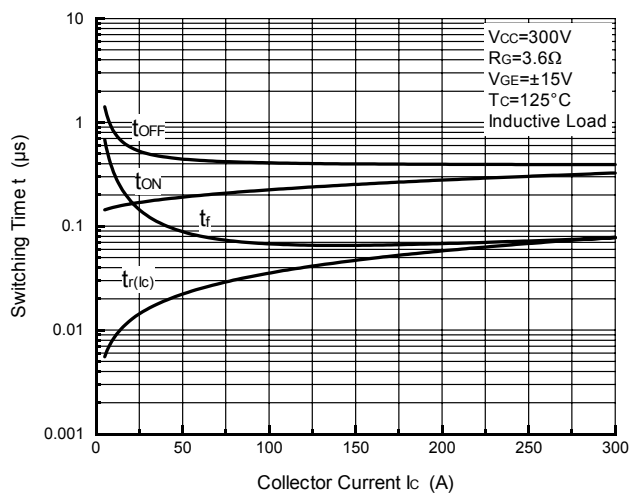


Fig.10- Series Gate Impedance vs. Switching Time

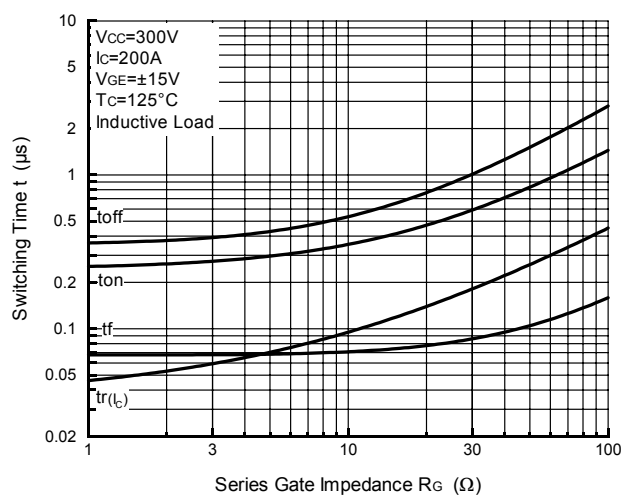


Fig.11- Collector Current vs. Switching Loss

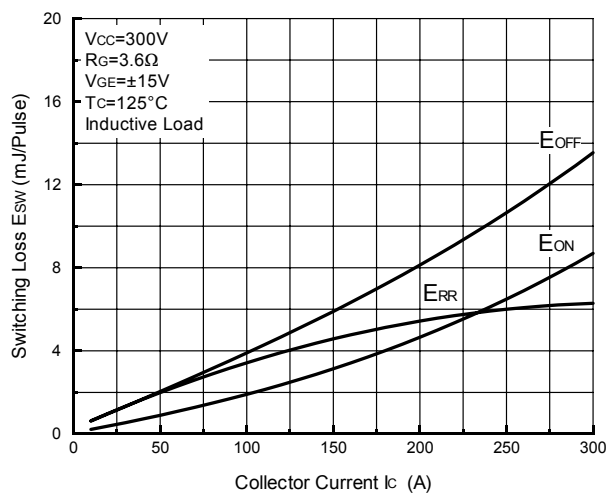
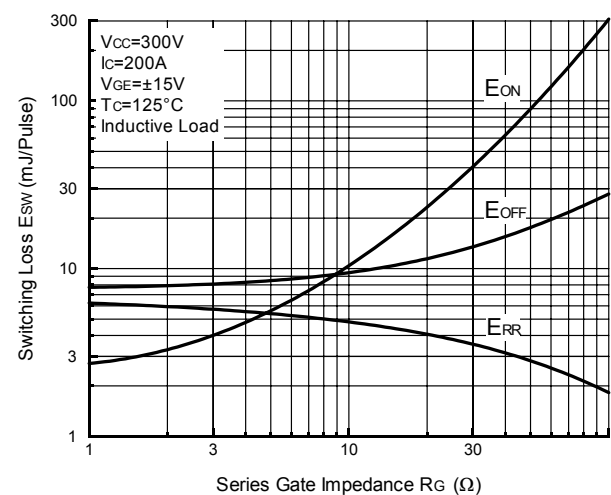


Fig.12- Series Gate Impedance vs. Switching Loss



P D M B 2 0 0 E 6

Fig.13- Forward Characteristics of Free Wheeling Diode (Typical)

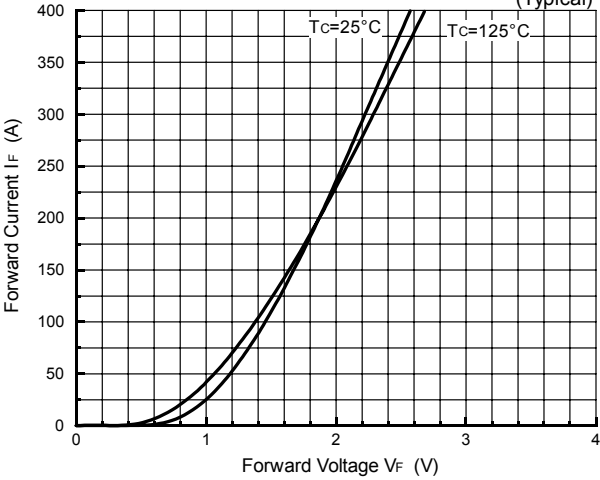


Fig.14- Reverse Recovery Characteristics (Typical)

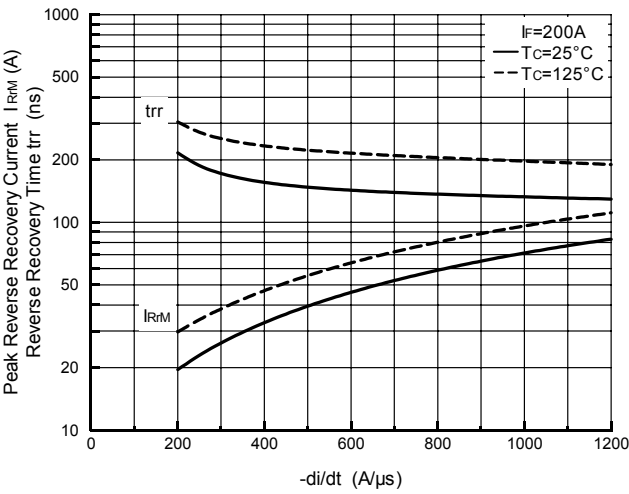


Fig.15- Reverse Bias Safe Operating Area

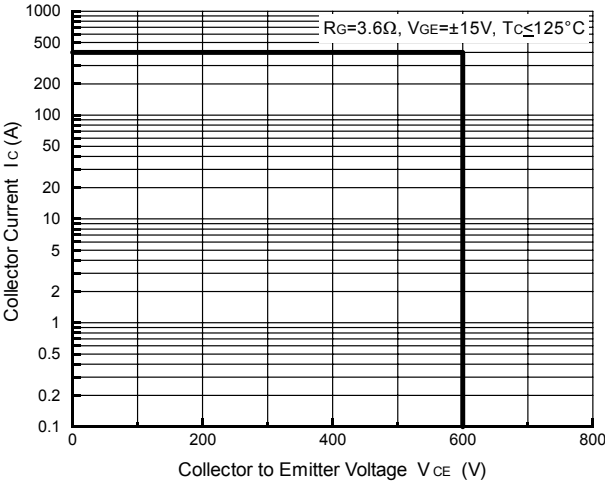


Fig.16- Transient Thermal Impedance

