

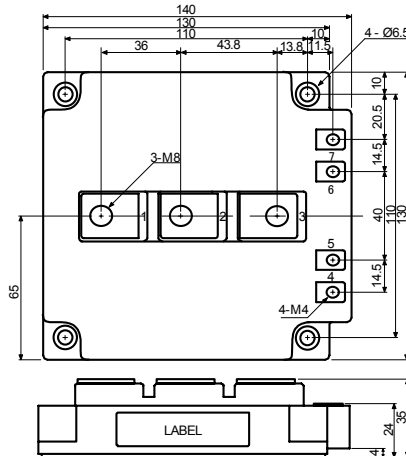
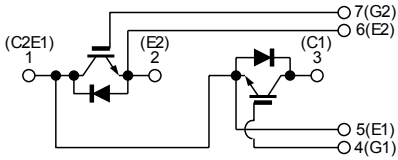
I G B T Module-Dual

6 0 0 A, 1 2 0 0 V

P D M B 6 0 0 B S 1 2

□ 回路図 : *CIRCUIT*

□ 外形寸法図 : *OUTLINE DRAWING*



Dimension: [mm]

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

Item	Symbol	Rated Value	Unit	
コレクタ・エミッタ間電圧 Collector-Emittter Voltage	V_{CES}	1, 200	V	
ゲート・エミッタ間電圧 Gate-Emittter Voltage	V_{GES}	± 20	V	
コレクタ電流 Collector Current	DC	600	A	
	1ms	1, 200		
コレクタ損失 Collector Power Dissipation	P_C	3, 600	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	3 (30.6)	N·m (kgf·cm)	
	Busbar to Main Terminal	M4		1.4 (14.3)
		M8		10.5 (107)

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

Characteristic	Symbol	Test Condition	Min.	Tvp.	Max.	Unit
コレクタ遮断電流 Collector-Emittter Cut-Off Current	I_{CES}	$V_{CE} = 1200V, V_{GE} = 0V$	—	—	6.0	mA
ゲート漏れ電流 Gate-Emittter 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-Emittter Saturation Voltage	$V_{CE(sat)}$	$I_C = 600A, V_{GE} = 15V$	—	2.3	2.7	V
ゲートしきい値電圧 Gate-Emittter Threshold Voltage	$V_{GE(th)}$	$V_{CE} = 5V, I_C = 600mA$	4.0	—	8.0	V
入力容量 Input Capacitance	C_{ies}	$V_{CE} = 10V, V_{GE} = 0V, f = 1MHz$	—	37,800	—	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC} = 600V$ $R_f = 1.0\Omega$ $R_g = 2.7\Omega$ $V_{GE} = \pm 15V$	—	0.25	0.45	μs
	ターンオン時間 Turn-on Time		—	0.40	0.70	
	下降時間 Fall Time		—	0.25	0.35	
	ターンオフ時間 Turn-off Time		—	0.80	1.10	

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

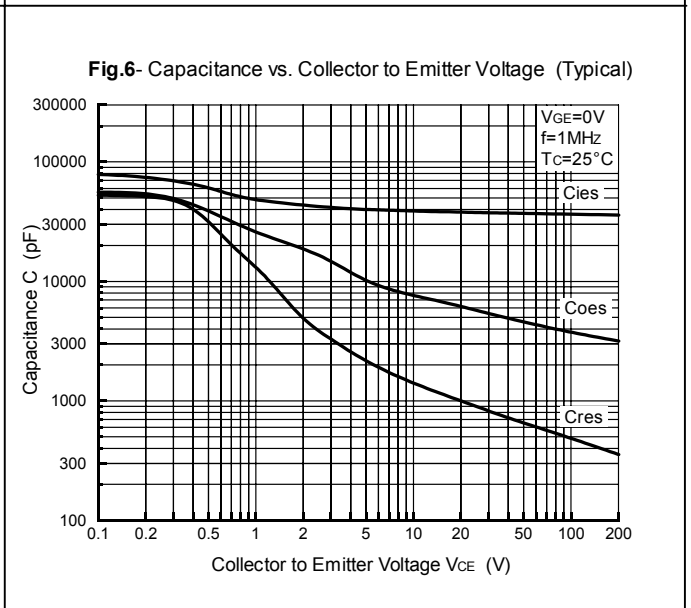
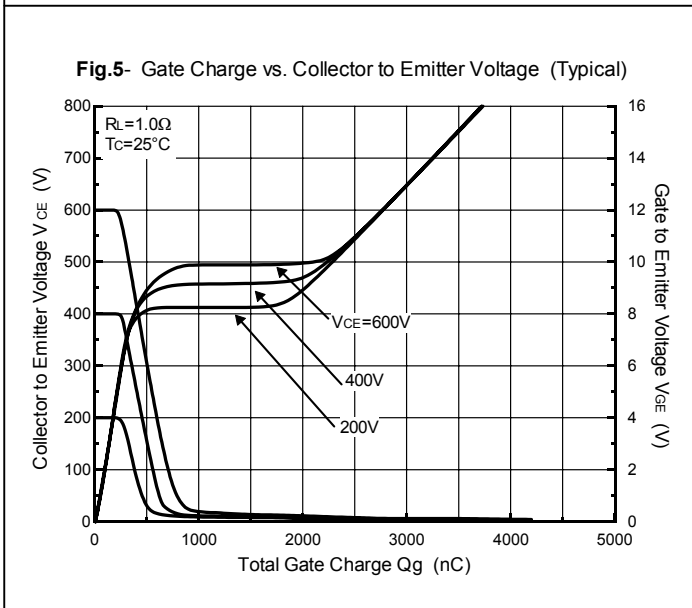
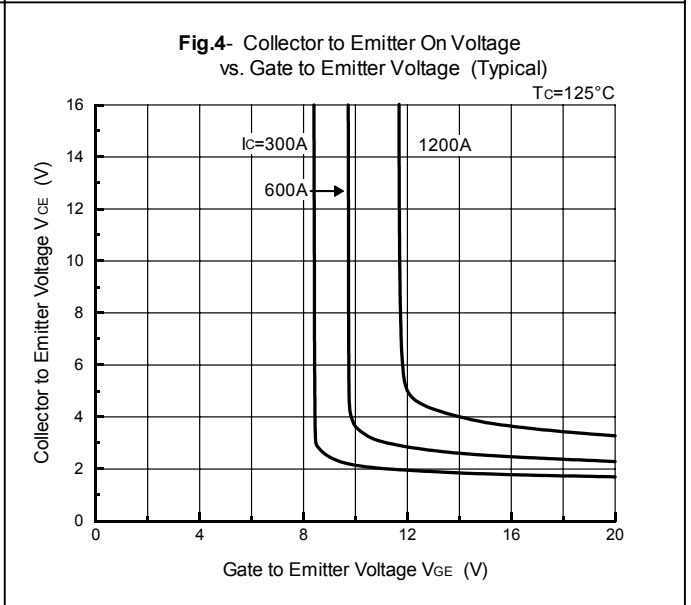
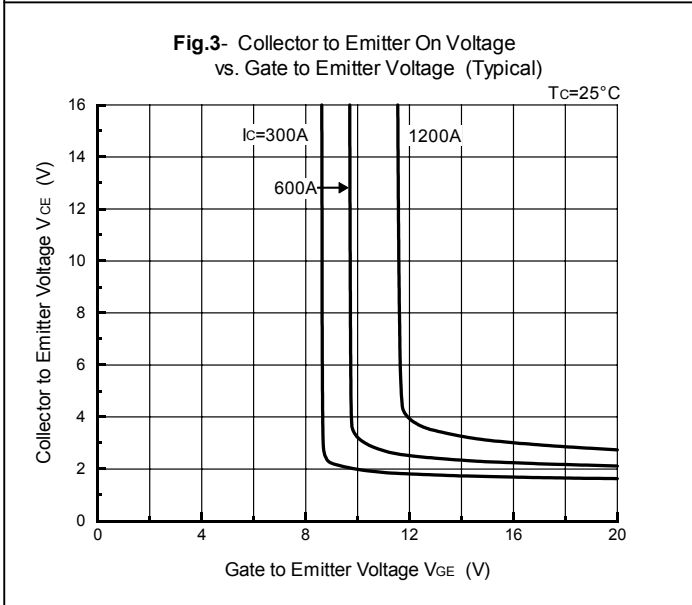
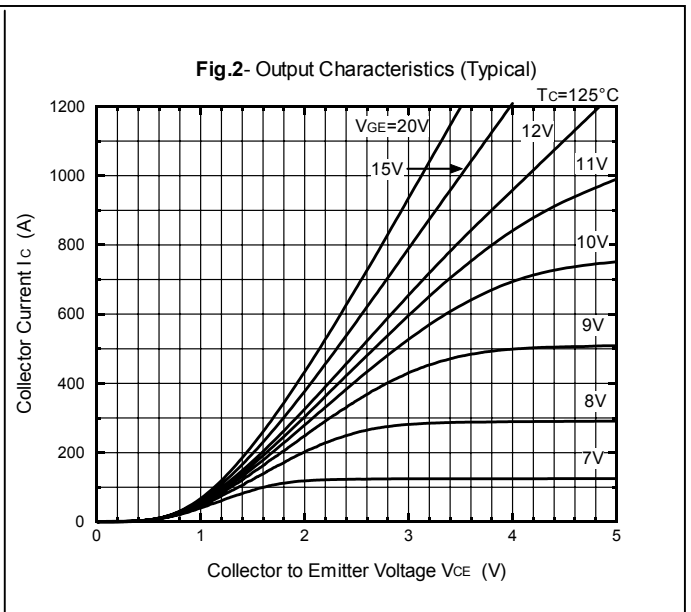
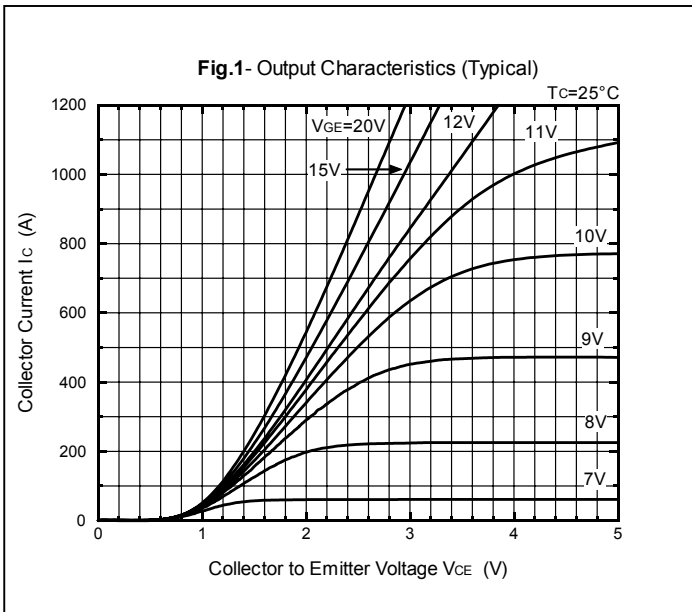
Item	Symbol	Rated Value	Unit
順電流 Forward Current	DC	400	A
	1ms	800	

Characteristic	Symbol	Test Condition	Min.	Tvp.	Max.	Unit
順電圧 Peak Forward Voltage	V_F	$I_F = 600A, V_{GE} = 0V$	—	2.2	2.6	V
逆回復時間 Reverse Recovery Time	t_{rr}	$I_F = 600A, V_{GE} = -10V$ $di/dt = 1200A/\mu\text{s}$	—	0.2	0.3	μs

□ 熱的特性 : *THERMAL CHARACTERISTICS*

Characteristic	Symbol	Test Condition	Min.	Tvp.	Max.	Unit
熱抵抗 Thermal Impedance	IGBT	Junction to Case	—	—	0.035	$^\circ\text{C}/\text{W}$
	Diode		—	—	0.071	

PDMB 600BS12



PDMB 600BS12

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

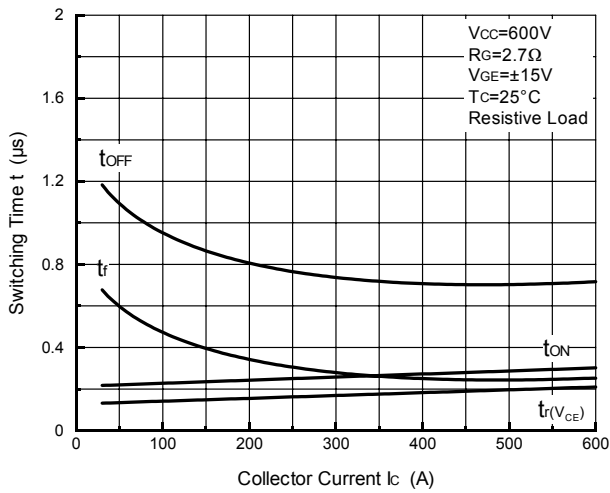


Fig.8- Series Gate Impedance vs. Switching Time (Typical)

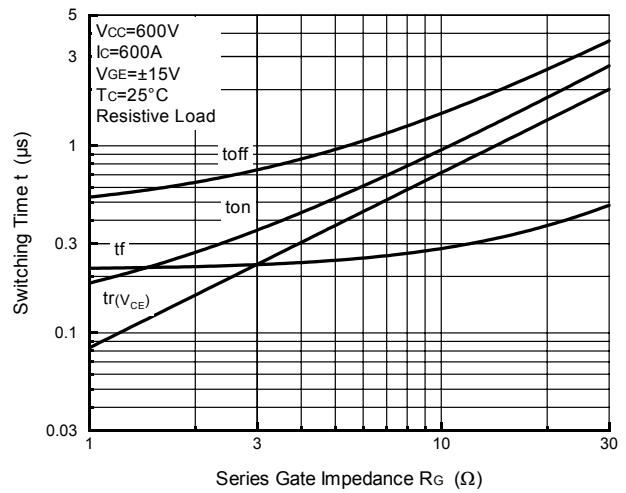


Fig.9- Collector Current vs. Switching Time

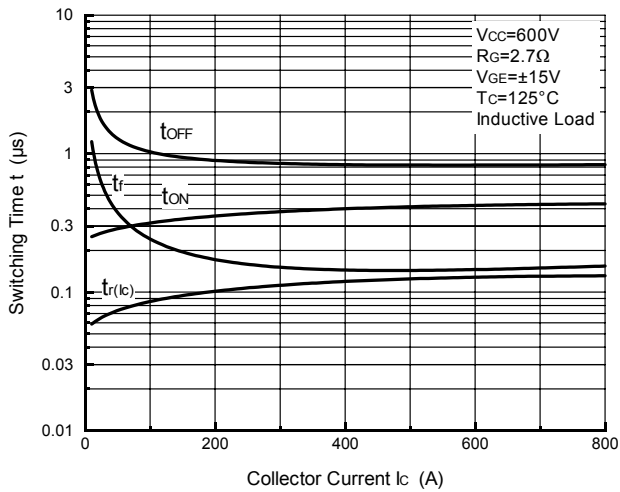


Fig.10- Series Gate Impedance vs. Switching Time

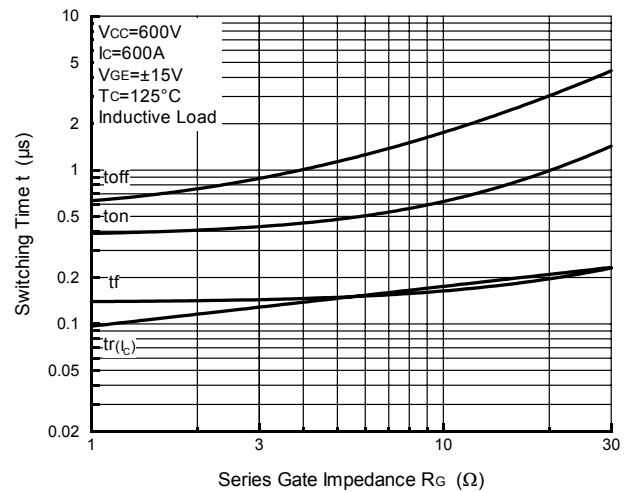


Fig.11- Collector Current vs. Switching Loss

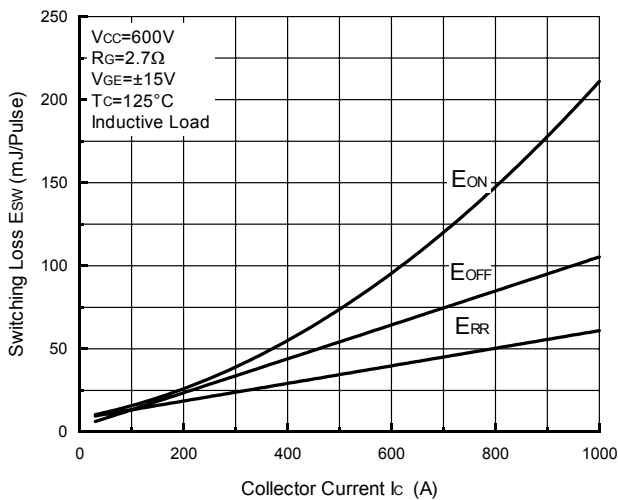
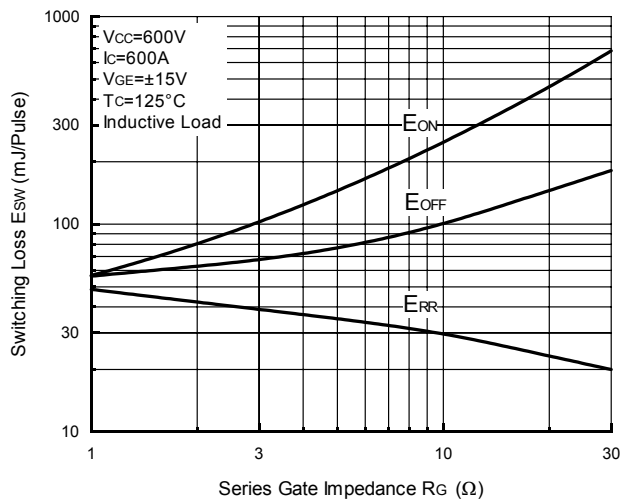


Fig.12- Series Gate Impedance vs. Switching Loss



PDMB 600BS12

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

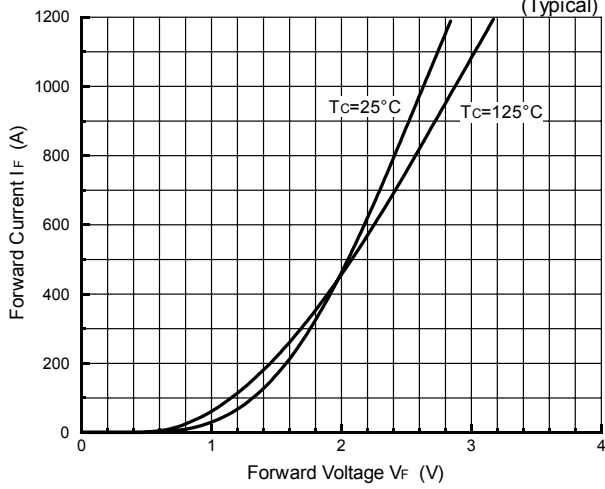


Fig.14- Reverse Recovery Characteristics (Typical)

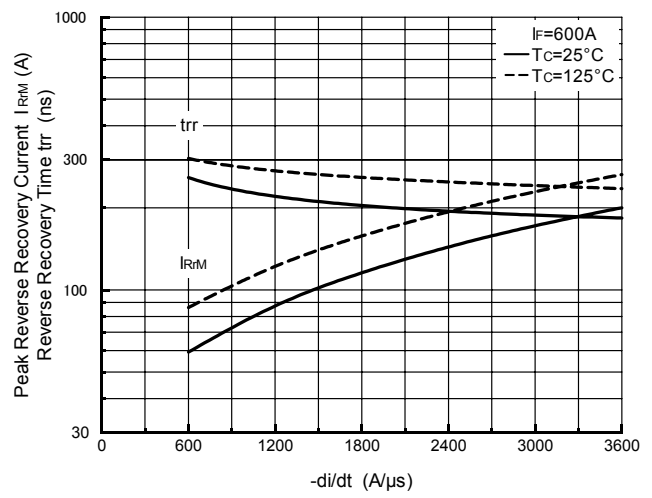


Fig.15- Reverse Bias Safe Operating Area

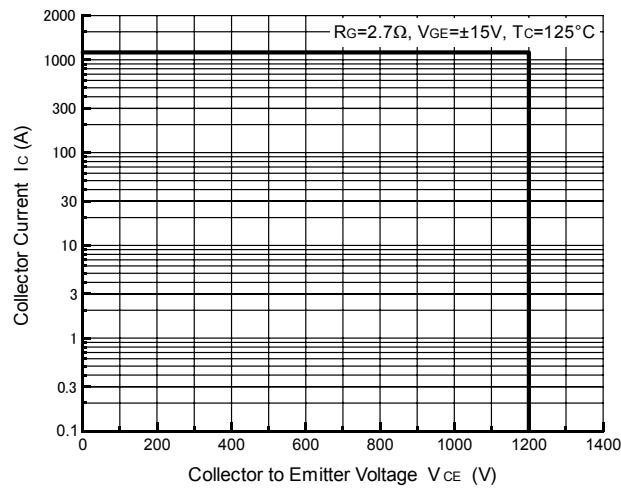


Fig.16- Transient Thermal Impedance

