

IGBT Module-Dual

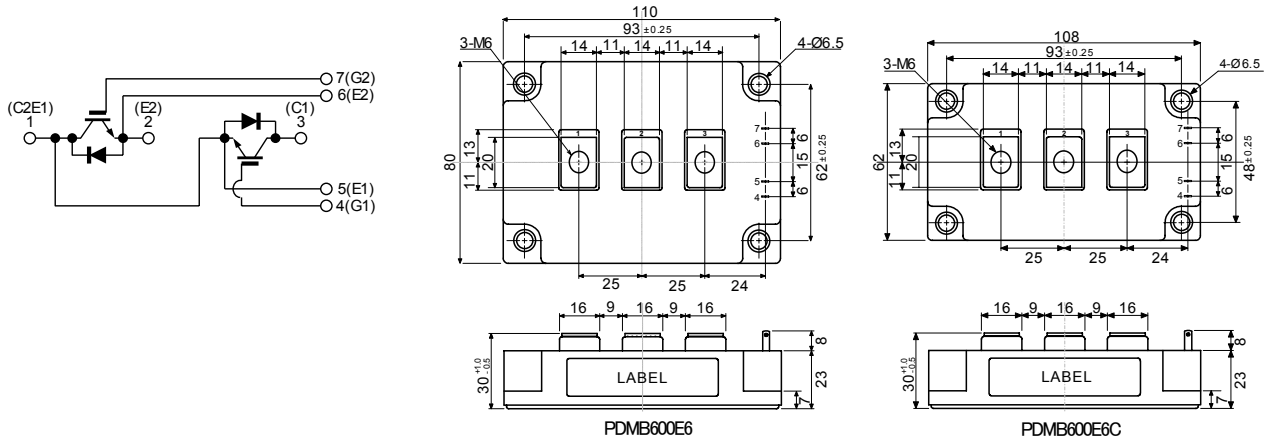
600A, 600V

PDMB600E6

PDMB600E6C

□ 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-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	$I_C$	DC	600
		1ms	1,200
コレクタ損失 Collector Power Dissipation	$P_c$	2,080	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)	$\text{N} \cdot \text{m}$ ( $\text{kgf} \cdot \text{cm}$ )
	Busbar to Main Terminal		

□ 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-Emmitter Cut-Off Current	$I_{CES}$	$V_{CE} = 600\text{V}, V_{GE} = 0\text{V}$	—	—	1.0	mA
ゲート漏れ電流 Gate-Emmitter Leakage Current	$I_{GES}$	$V_{GE} = \pm 20\text{V}, V_{CE} = 0\text{V}$	—	—	1.0	$\mu\text{A}$
コレクタ・エミッタ間飽和電圧 Collector-Emmitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 600\text{A}, V_{GE} = 15\text{V}$	—	2.1	2.6	V
ゲートしきい値電圧 Gate-Emmitter Threshold Voltage	$V_{GE(th)}$	$V_{CE} = 5\text{V}, I_C = 600\text{mA}$	4.0	—	8.0	V
入力容量 Input Capacitance	$C_{ies}$	$V_{CE} = 10\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$	—	30,000	—	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC} = 300\text{V}$ $R_L = 0.5\Omega$ $R_G = 2.0\Omega$ $V_{GE} = \pm 15\text{V}$	—	0.15	0.35	$\mu\text{s}$
	ターンオン時間 Turn-on Time		—	0.30	0.85	
	下降時間 Fall Time		—	0.10	0.25	
	ターンオフ時間 Turn-off Time		—	0.40	0.80	

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

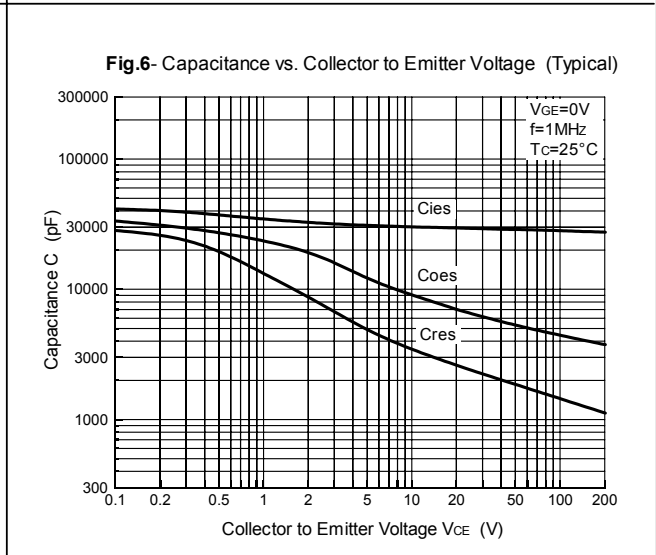
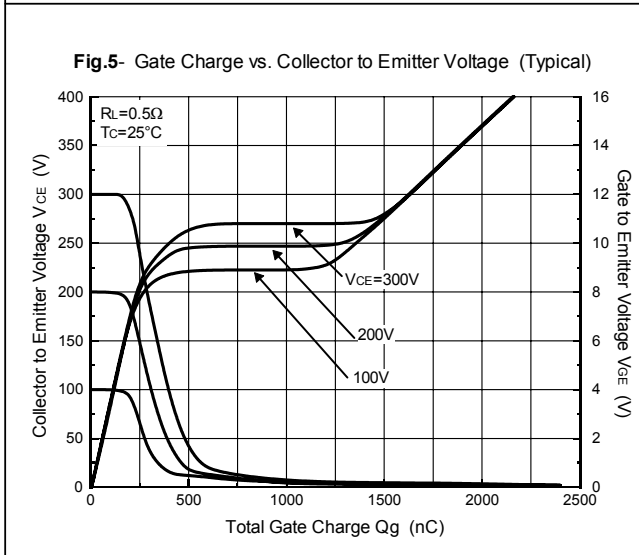
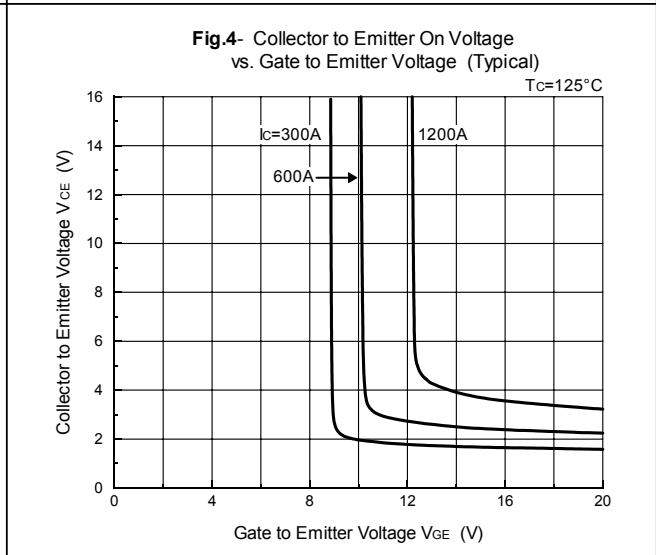
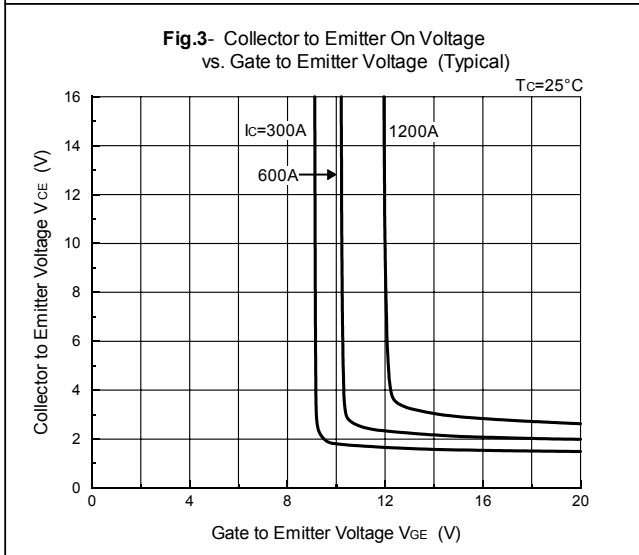
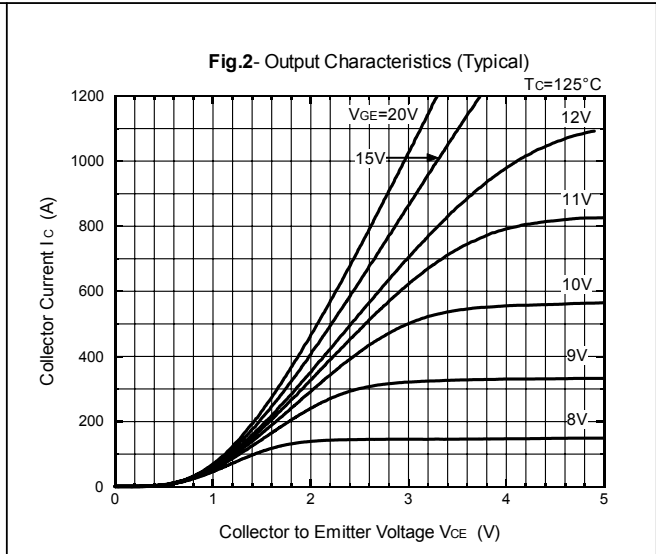
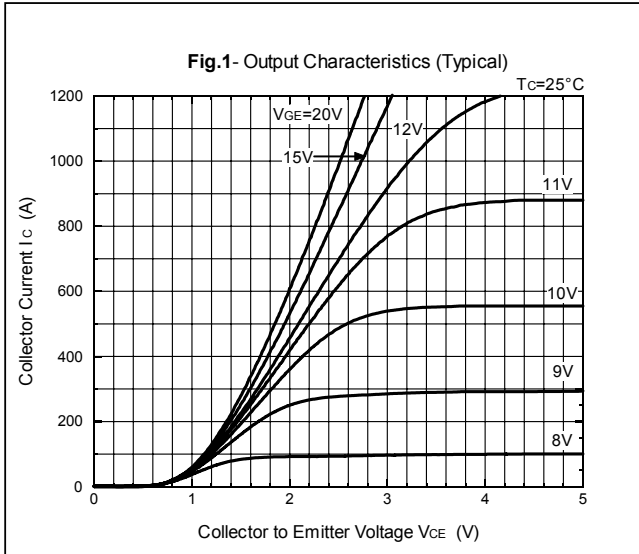
Item	Symbol	Rated Value	Unit
順電流 Forward Current	DC	600	A
	1ms	1,200	

Characteristic	Symbol	Test Condition	Min.	Tvp.	Max.	Unit
順電圧 Peak Forward Voltage	$V_F$	$I_F = 600\text{A}, V_{GE} = 0\text{V}$	—	1.9	2.4	V
逆回復時間 Reverse Recovery Time	$t_{rr}$	$I_F = 600\text{A}, V_{GE} = -10\text{V}$ $di/dt = 1200\text{A}/\mu\text{s}$	—	0.15	0.25	$\mu\text{s}$

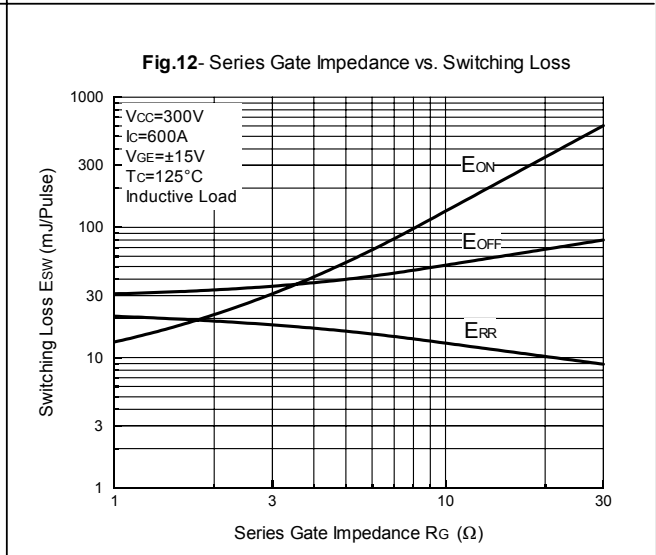
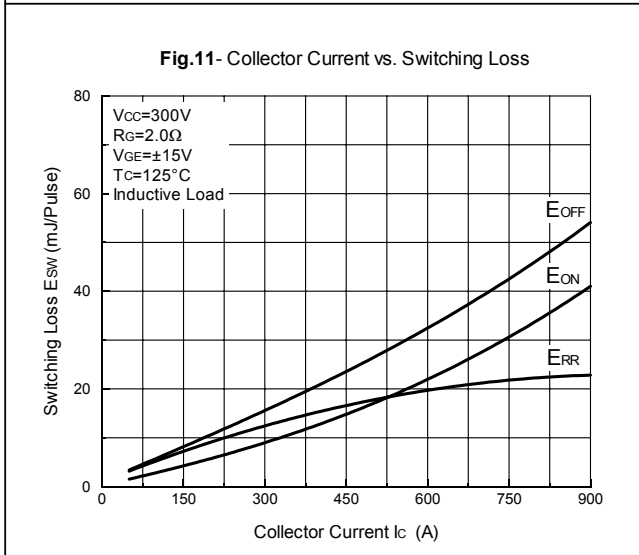
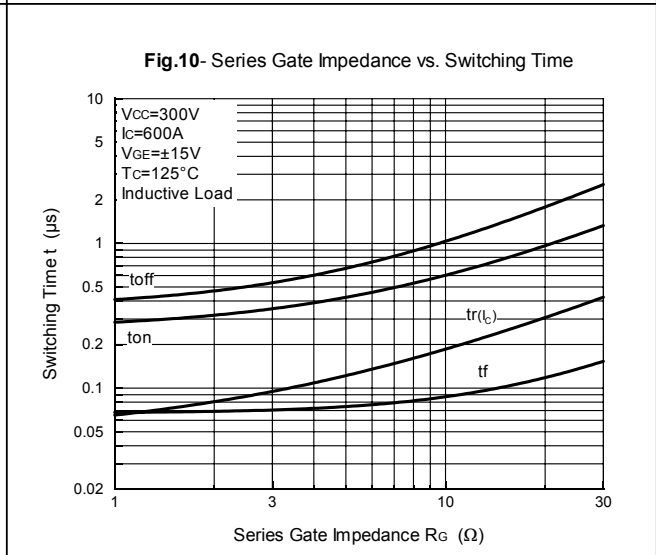
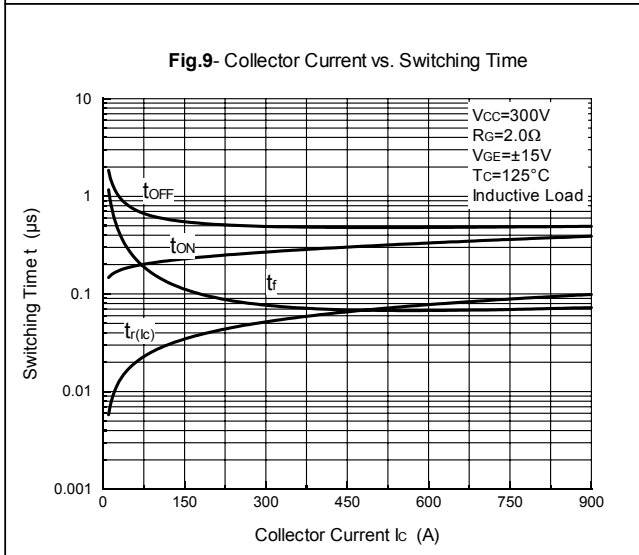
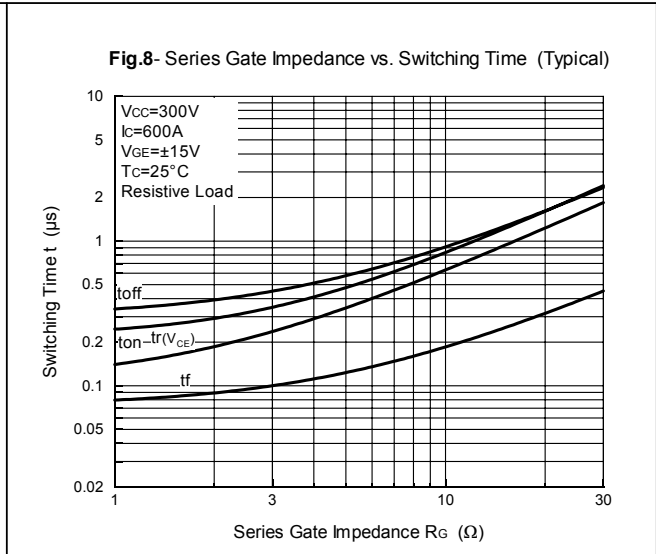
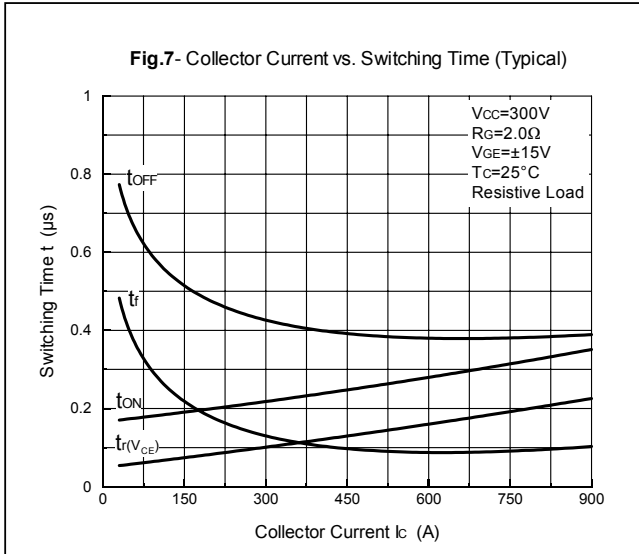
□ 熱的特性 : *THERMAL CHARACTERISTICS*

Characteristic	Symbol	Test Condition	Min.	Tvp.	Max.	Unit
熱抵抗 Thermal Impedance	IGBT	Junction to Case ( $T_c$ 測定点チップ直下)	—	—	0.06	$^\circ\text{C}/\text{W}$
	Diode		—	—	0.14	

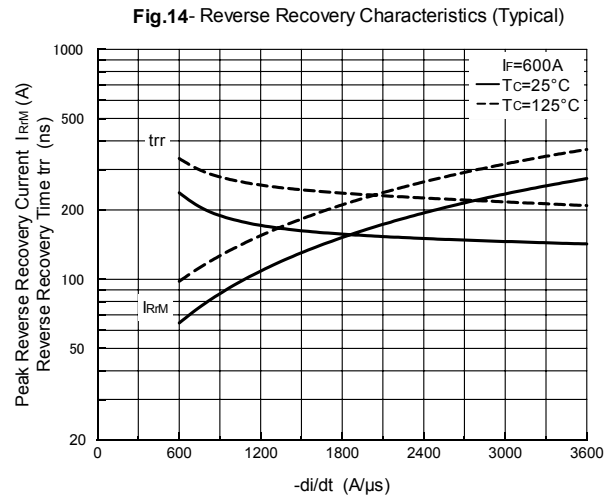
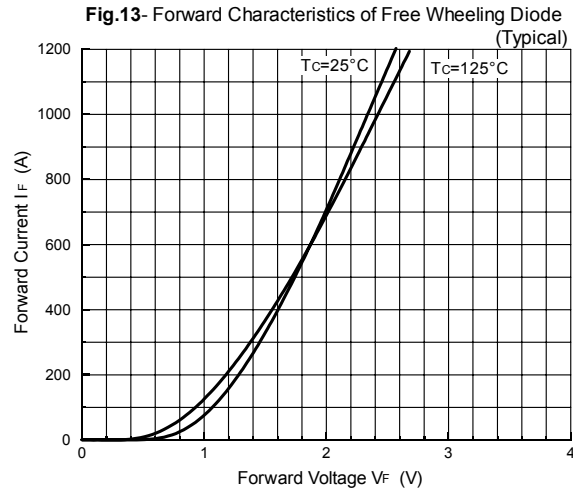
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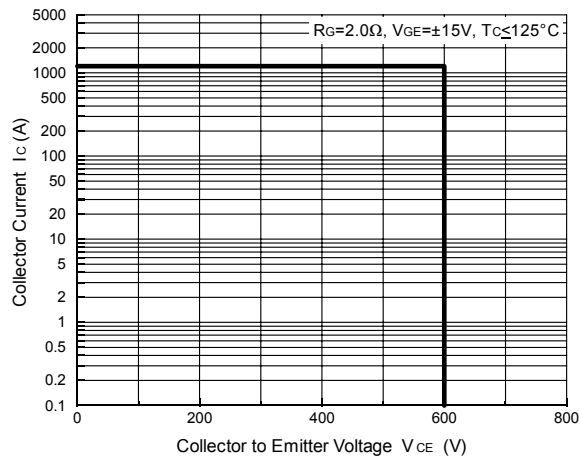
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PDMB600E6C



**Fig.15- Reverse Bias Safe Operating Area**



**Fig.16- Transient Thermal Impedance**

