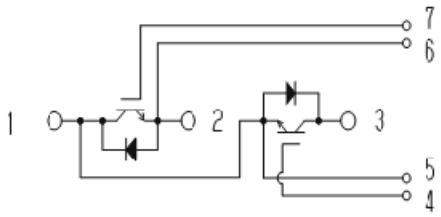
KYOCERA

IGBT Module
100A／650V

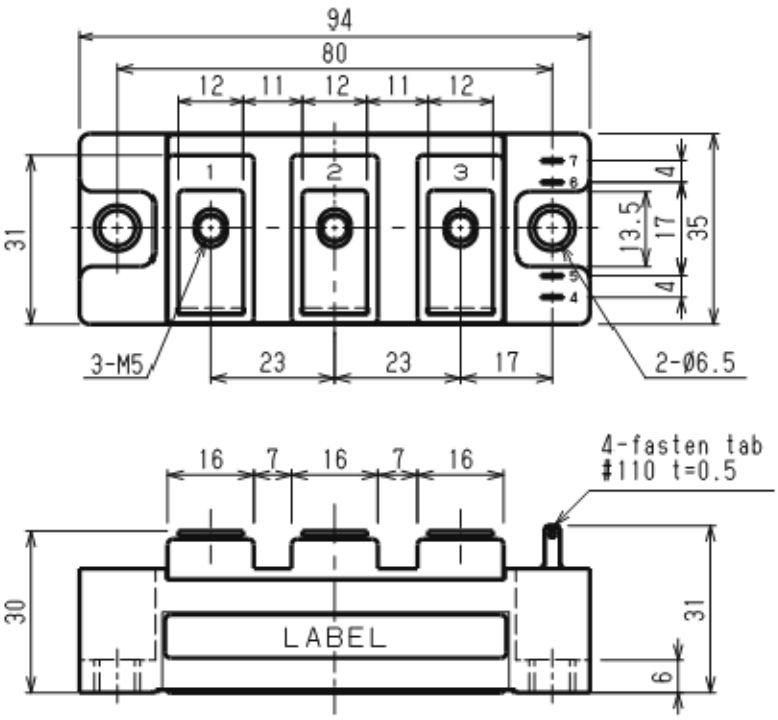
PDMB100W6

□ 回路図 ： *CIRCUIT*



□ 概略図 ： *SCHEMATIC DIAGRAM*

Dimension: [mm]



□ 最大定格 ： *MAXIMUM RATINGS* (at Tc=25℃ unless otherwise specified)

	Item		Symbol	Condition	Rated Value	Unit
IGBT	コレクタ・エミッタ間電圧 Collector-Emitter Voltage		V_{CES}	G-E Short	650	V
	ゲート・エミッタ間電圧 Gate-Emitter Voltage		V_{GES}	C-E Short	±20	V
	コレクタ電流 Collector Current		I_C	DC Tc=85℃	100	A
			I_{CP}	Pulse ≦ 1ms	200	
	コレクタ損失 Collector Power Dissipation		P_C	Tj=175℃	385	W
				Tj=150℃	320	
FWD	繰り返しピーク逆電圧 Repetitive peak reverse voltage		V_{RRM}		650	V
	順電流 Forward Current		I_F		100	A
			I_{FM}	Pulse ≦ 1ms	200	
最大接合温度 Maximum Junction Temperature			T_{jMAX}	瞬時動作(過負荷) Instantaneous Overload	175	℃
接合温度 Junction Temperature Range			T_j		−40～+150	℃
保存温度 Storage Temperature Range			Tstg		−40～+125	℃
絶縁耐圧 Isolation Voltage			V_{ISO}	Terminal to Base AC,1minute	2,500	V (RMS)
締め付けトルク Mounting Torque	Module Base to Heatsink		Ftor	M6	3	N・m
	Busbar to Main Terminal			M5	2	

□ 電気的特性 ： *ELECTRICAL CHARACTERISTICS* (at T_j=25℃ unless otherwise specified)

	Characteristic		Symbol	Test Condition		Min.	Typ.	Max.	Unit
IGBT	コレクタ遮断電流 Collector-Emitter Cut-Off Current		ICES	VCE= 650V,VGE= 0V		－	－	１．０	ｍA
	ゲート漏れ電流 Gate-Emitter Leakage Current		IGES	VGE= ±20V,VCE= 0V		－	－	１．０	μA
	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage		VCE(sat.)	IC= 100A,VGE= 15V (chip level)	Tj=25℃	－	１．４５	１．９５	V
					Tj=125℃	－	１．６５	－	
					Tj=150℃	－	１．７０	－	
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage		VGE(th.)	VCE= 10V,IC= 2mA		４．８	－	７．０	V
	入力容量 Input Capacitance		Cies	VCE= 25V,VGE= 0V,f= 1MHz		－	８．５	－	ｎF
	出力容量 Output Capacitance		Coes			－	０．４	－	
	帰還容量 Reverse Transfer Capacitance		Cres			－	０．３	－	
	ゲート電荷量 Gate Charge		Qg	Vcc=300V, Ic=100A, VGE=-15～+15V		－	８５０	－	ｎC
	スイッチング時間 Switching Time	上昇時間 Rise Time	tr	Vcc= 300V Ls=38nH Ic= 100A Inductive Load RG= 8.2Ω VGE= ±15V Tj= 150℃		－	７１	－	ｎs
		ターンオン遅延時間 Turn-on Delay Time	td(on)			－	１１８	－	
		下降時間 Fall Time	tf			－	７０	－	
		ターンオフ遅延時間 Turn-off Delay Time	td(off)			－	３１０	－	
FWD	順電圧 Peak Forward Voltage		VF	IF= 100A,VGE=0V (chip level)	Tj=25℃	－	１．７０	２．２０	V
					Tj=125℃	－	１．６０	－	
					Tj=150℃	－	１．５５	－	
	逆回復時間 Reverse Recovery Time		trr	Vcc= 300V Ls=38nH Ic= 100A Inductive Load RG= 8.2Ω VGE= ±15V Tj= 150℃		－	１４０	－	ｎs
内部配線抵抗 Internal Lead Resistance			RCC'+EE'	主端子—チップ間 ／ 1素子 Main Terminal - Chip / Per 1 Arm		－	－	１	ｍΩ
内部インダクタンス Stray Inductance			LsCE	メイン端子３－２間 Main Terminal３ - Main Terminal２		－	３０	－	nH

□ 熱的特性 ： *THERMAL CHARACTERISTICS*

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Resistance	IGBT	Rth(j-c)	Junction to Case Per 1 Arm （Tc測定点:チップ直下）	－	－	０．３９	℃／W
	FWD			－	－	０．９６	
接触熱抵抗 Thermal Resistance	IGBT	Rth(c-f)	Case to heatsink Per 1 Arm Paste=1W/(m･℃)	－	０．１０	－	
	FWD			－	０．１７	－	

☐ 特性図 ：*CHARACTERISTICS CURVES*

Fig.1- Output Characteristics (Typical)

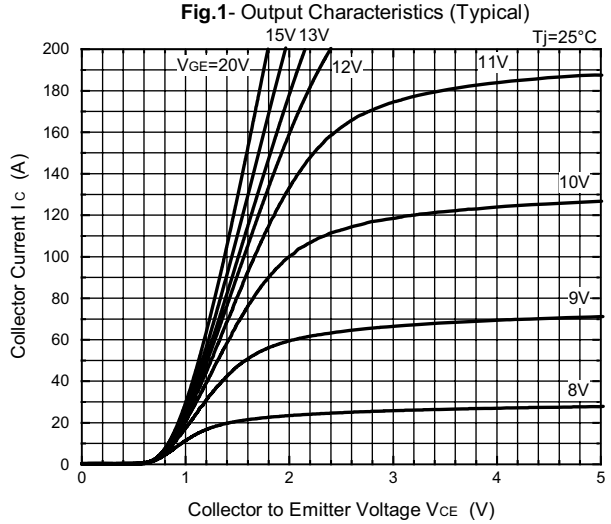


Fig.2- Saturation Voltage Characteristics (Typical)

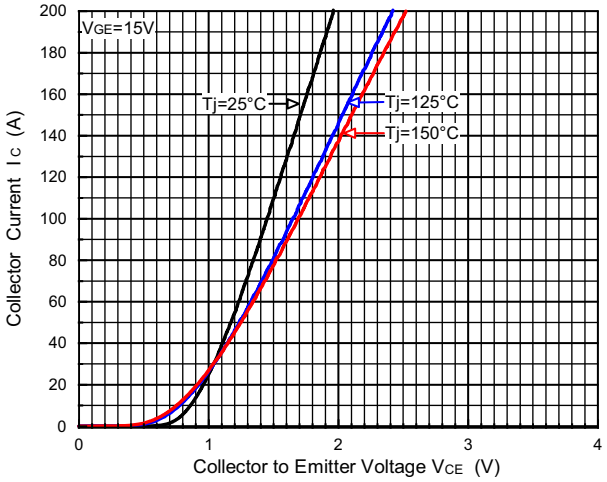


Fig.3- Transfer Characteristics (Typical)

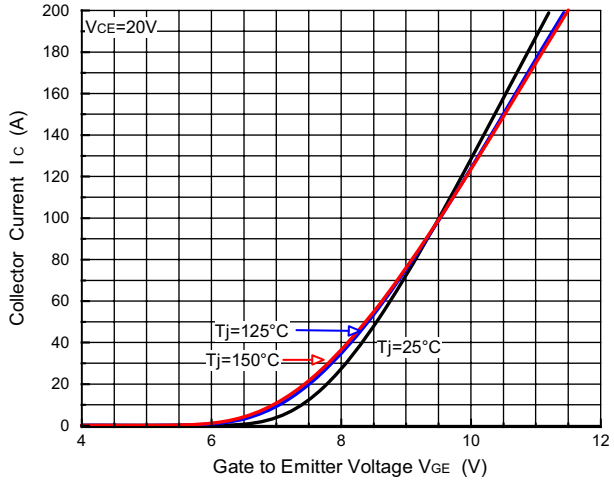


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

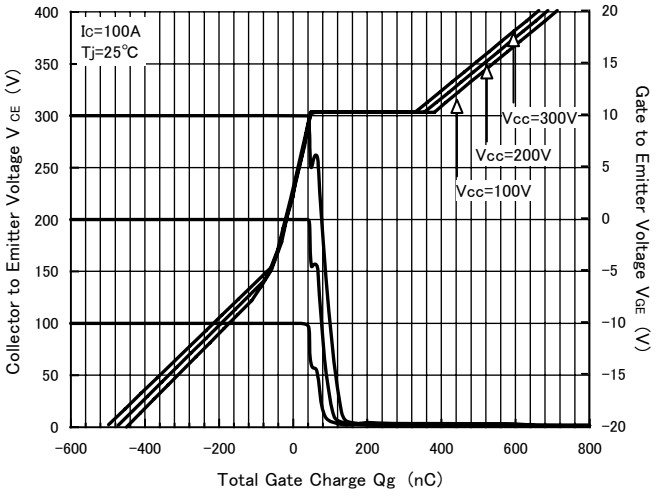


Fig.5- Collector Current vs. Switching Time (Typical)

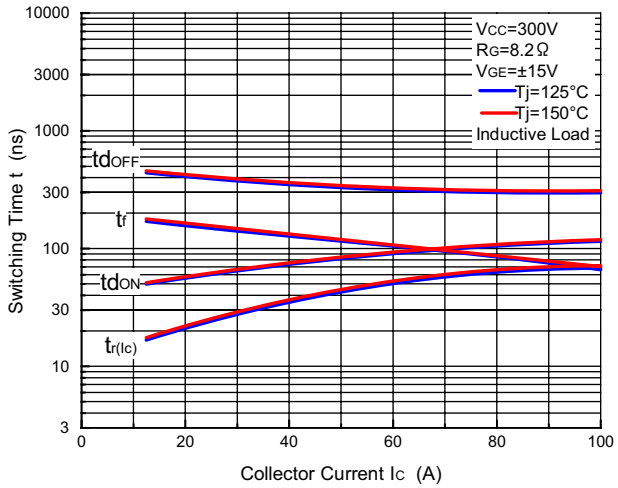
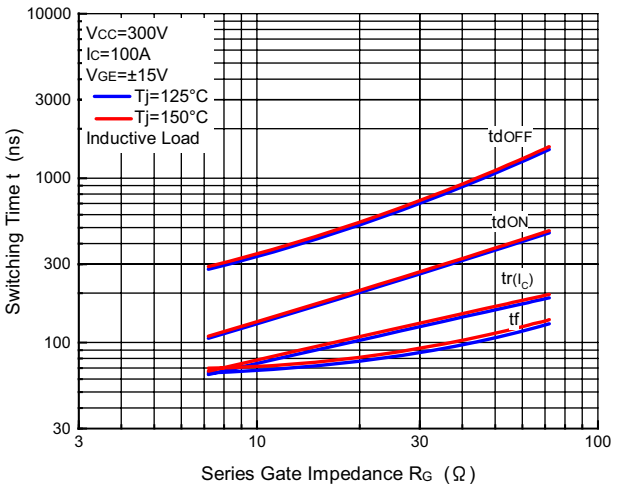


Fig.6- Series Gate Impedance vs. Switching Time (Typical)



□ 特性図 ：*CHARACTERISTICS CURVES*

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

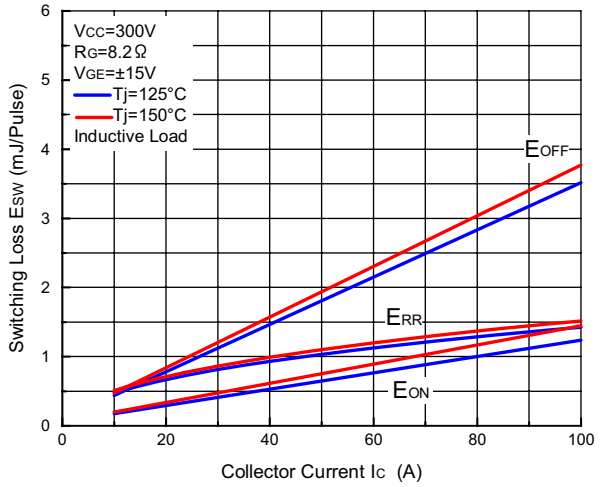


Fig.8- Series Gate Impedance vs. Switching Loss (Typical)

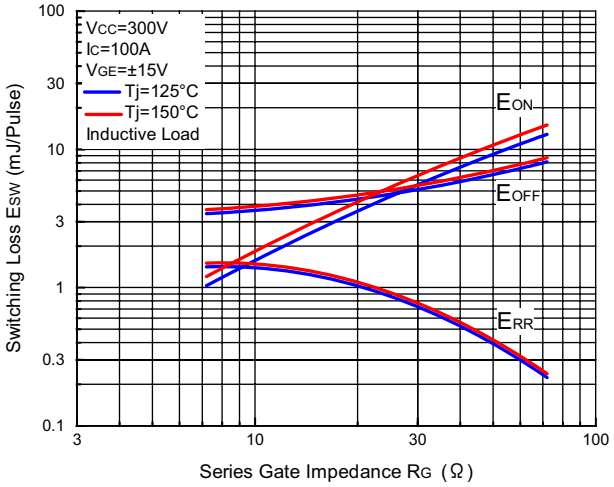


Fig.9- Forward Characteristics of Free Wheeling Diode (Typical)

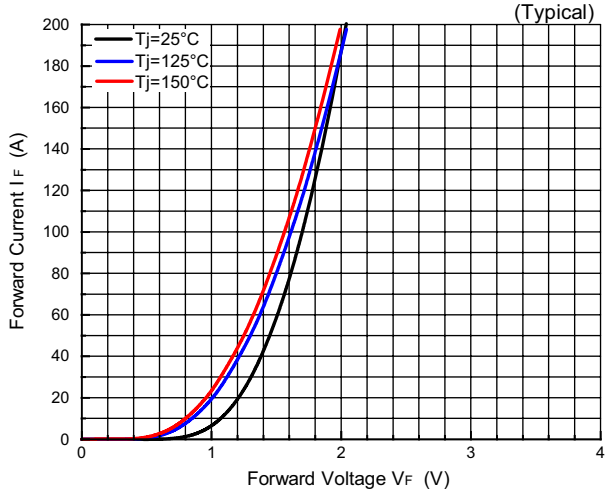


Fig.10- FWD Reverse Recovery Characteristics (Typical)

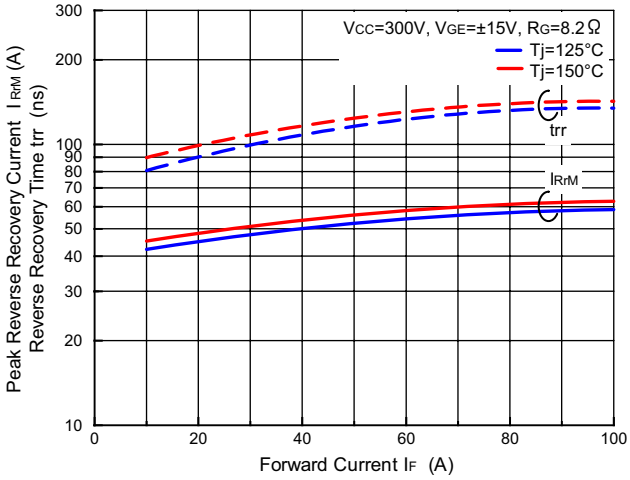


Fig.11- Reverse Bias Safe Operating Area

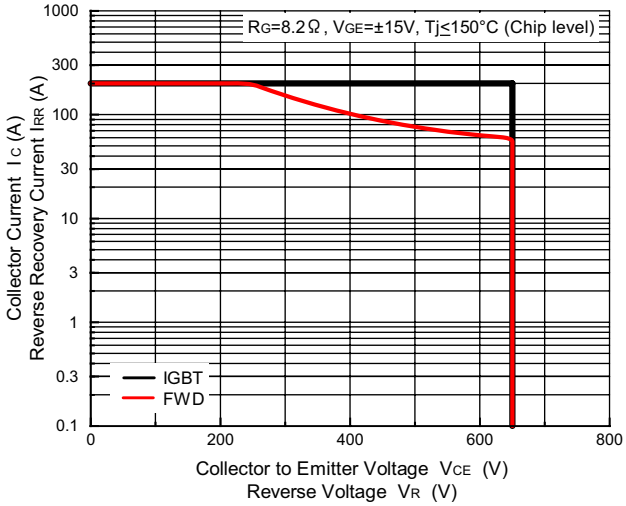


Fig.12- Transient Thermal Impedance