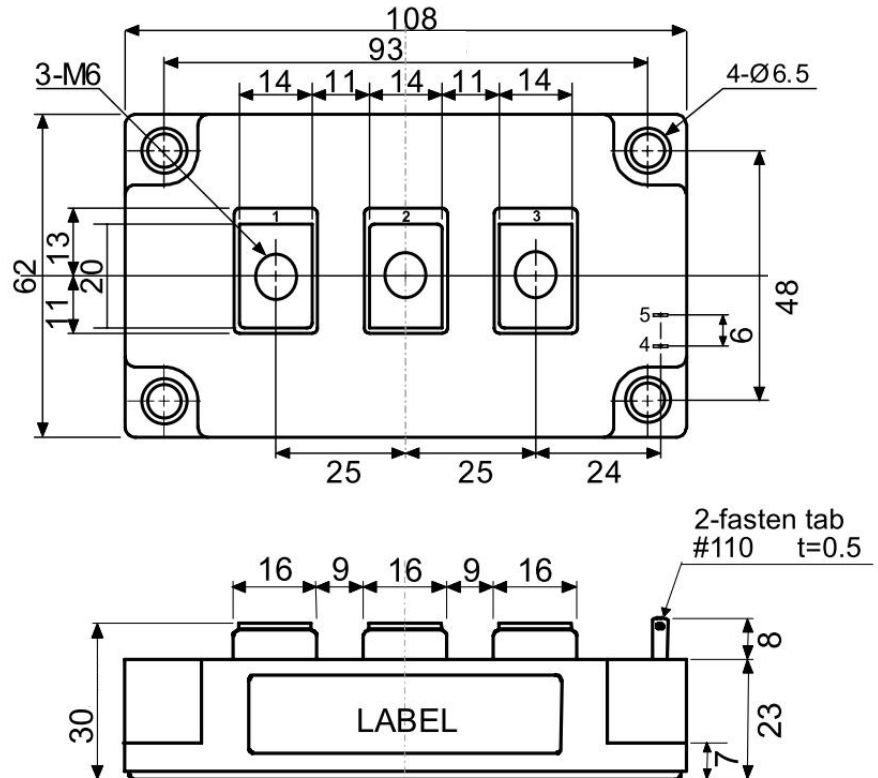
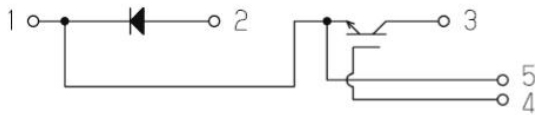


□ 回路図 : *CIRCUIT*

□ 概略図 : *SCHEMATIC DIAGRAM*

Dimension: [mm]


□ 最大定格 : **MAXIMUM RATINGS** (at $T_c=25^{\circ}\text{C}$ 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	1200	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 $T_c=85^{\circ}\text{C}$	400	A
		I_{CP}	Pulse $\leq 1\text{ms}$	800	
Diode	繰り返しピーク逆電圧 Repetitive peak reverse voltage	V_{RRM}	$T_j=175^{\circ}\text{C}$	2307	W
			$T_j=150^{\circ}\text{C}$	1923	
	順電流 Forward Current	I_F		400	A
		I_{FM}	Pulse $\leq 1\text{ms}$	800	
最大接合温度 Maximum Junction Temperature		T_{jMAX}	瞬時動作(過負荷) Instantaneous Overload	175	$^{\circ}\text{C}$
接合温度範囲 Junction Temperature Range		T_j		$-40 \sim +150$	$^{\circ}\text{C}$
保存温度範囲 Storage Temperature Range		T_{stg}		$-40 \sim +125$	$^{\circ}\text{C}$
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	F_{tor}	M6	3	N · m
	Busbar to Main Terminal		M6	3	

□ 電 氣 的 特 性 : **ELECTRICAL CHARACTERISTICS** (at $T_J=25^\circ\text{C}$ 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= 1200V,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= 400A,VGE= 15V (chip level)	Tj=25°C	—	1.50	2.00	V
				Tj=125°C	—	1.70	—		
				Tj=150°C	—	1.80	—		
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage		VGE(th.)	VCE= 10V,Ic= 13.4mA		4.8	—	7.0	V
	入力容量 Input Capacitance		Cies	VCE= 25V,VGE= 0V,f= 1MHz		—	38.0	—	nF
	出力容量 Output Capacitance		Coes			—	1.12	—	
	帰還容量 Reverse Transfer Capacitance		Cres			—	0.90	—	
	ゲート電荷量 Gate Charge		Qg	Vcc=600V, Ic=400A, VGE=-15~+15V		—	4400	—	nC
スイッチング時間 Switching Time	上昇時間 Rise Time	tr	VCC= 600V Inductive Load Ic= 400A RG= 2.0Ω VGE= ±15V Tj= 150°C		—	90	—	ns	
	ターンオン遅延時間 Turn-on Delay Time	td(on)			—	220	—		
	下降時間 Fall Time	tf			—	290	—		
	ターンオフ遅延時間 Turn-off Delay Time	td(off)			—	800	—		
Diode	順電圧 Peak Forward Voltage		VF	Ic= 400A,VGE=0V (chip level)	Tj=25°C	—	2.00	2.60	V
				Tj=125°C	—	1.98	—		
				Tj=150°C	—	1.95	—		
逆回復時間 Reverse Recovery Time		trr	VCC= 600V Inductive Load If= 400A RG= 2.0Ω VGE= ±15V Tj= 150°C		—	250	—	ns	

□ 熱 的 特 性 : **THERMAL CHARACTERISTICS**

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱 抵 抗 Thermal Resistance	IGBT	$R_{th(j-c)}$	Junction to Case	—	—	0.065	$^\circ\text{C}/\text{W}$
	Diode		Per 1 Arm (Tc測定点:チップ直下)	—	—	0.105	

特性图 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

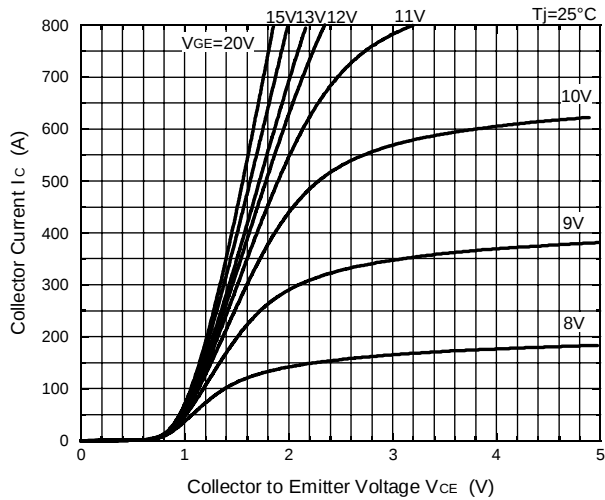


Fig.2- Saturation Voltage Characteristics (Typical)

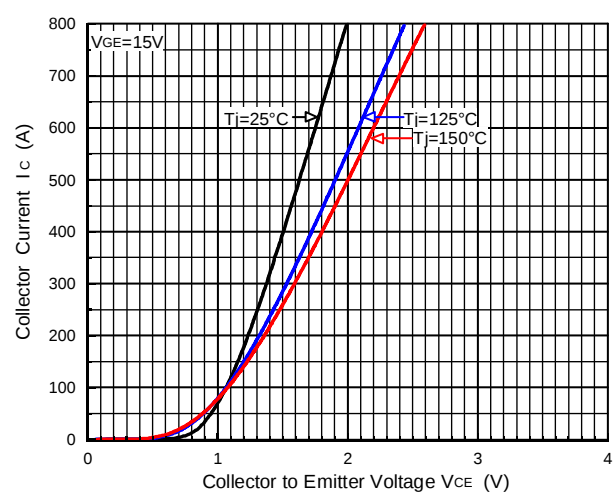


Fig.3- Transfer Characteristics (Typical)

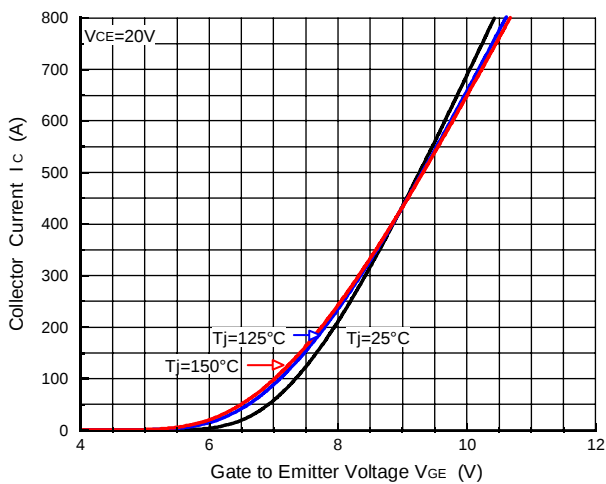


Fig.4 - Gate Charge vs. Collector to Emitter Voltage (Typical)

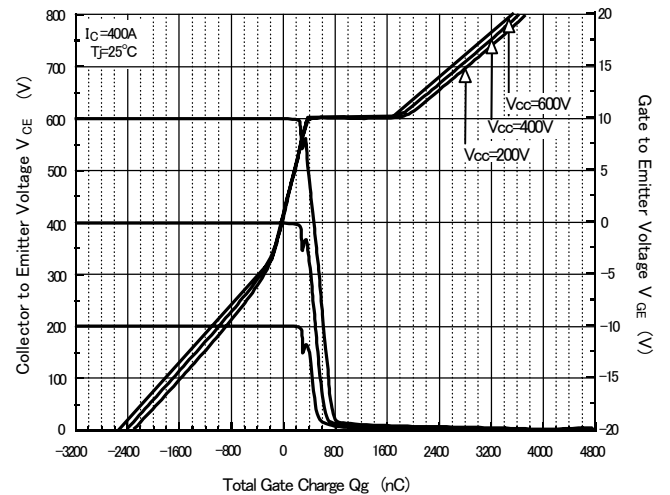


Fig.5- Collector Current vs. Switching Time

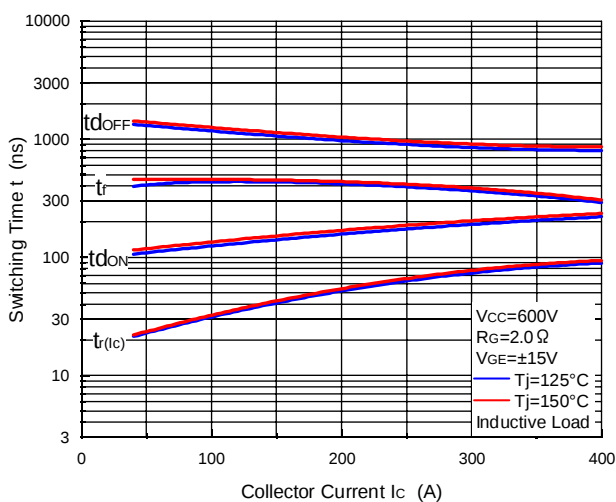
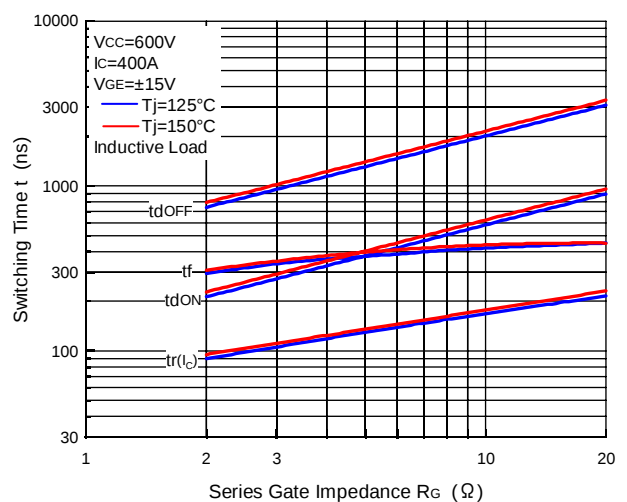


Fig.6- Series Gate Impedance vs. Switching Time



特性図 : CHARACTERISTICS CURVES

Fig.7- Collector Current vs. Switching Loss

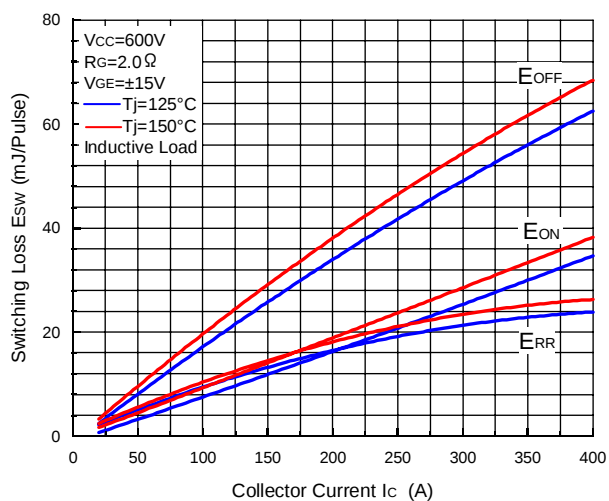


Fig.8- Series Gate Impedance vs. Switching Loss

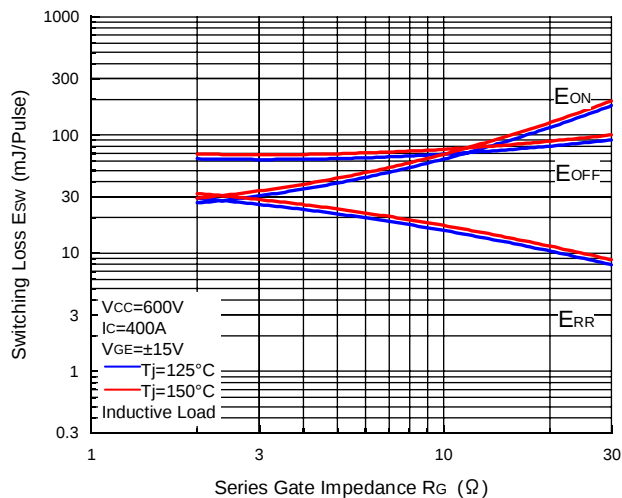


Fig.9- Forward Characteristics of FWD (Typical)

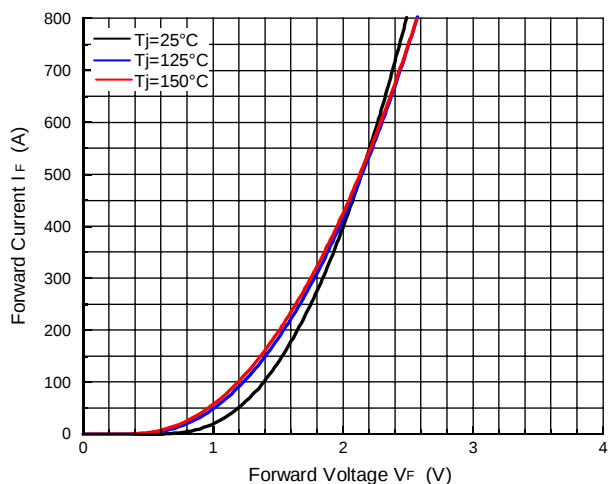


Fig.10- FWD Reverse Recovery Characteristics (Typical)

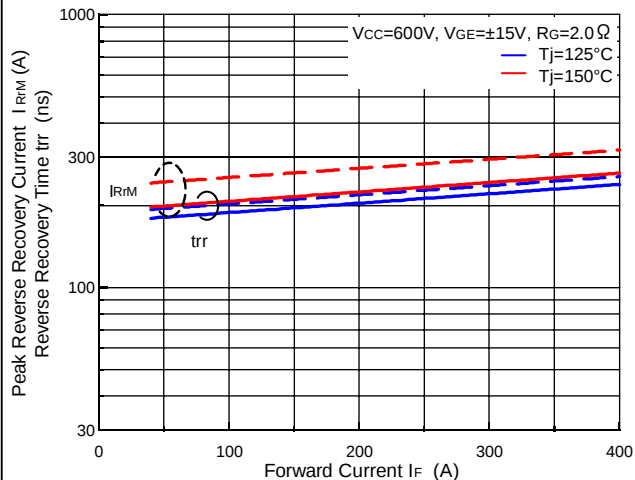


Fig.11- Reverse Bias Safe Operating Area

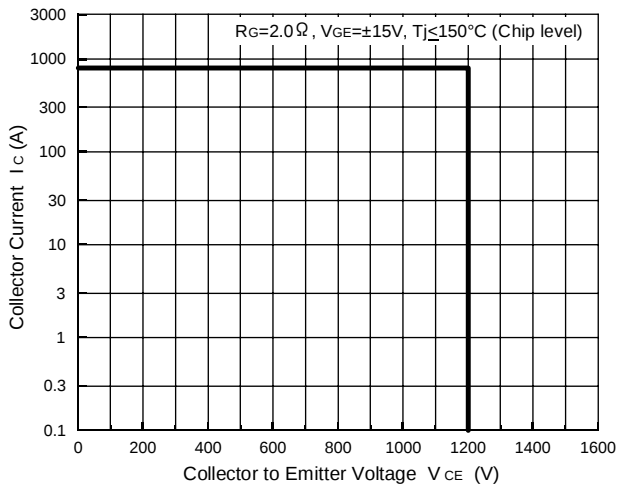
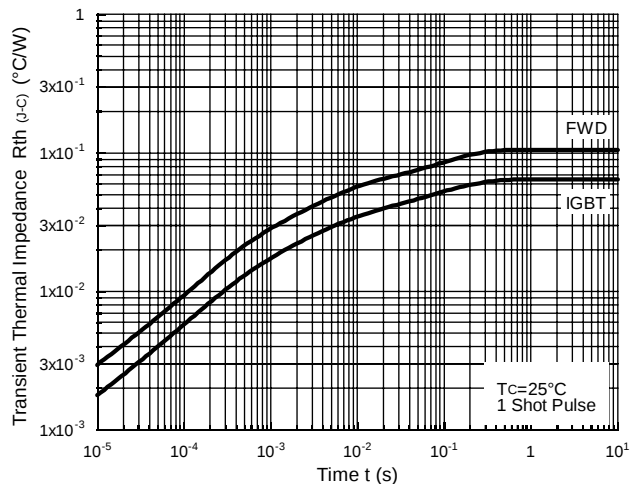


Fig.12- Transient Thermal Impedance



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