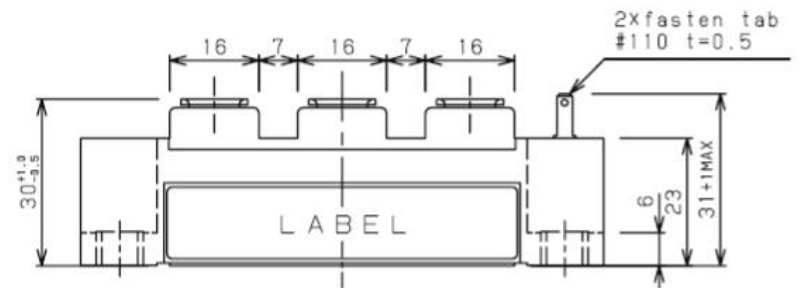
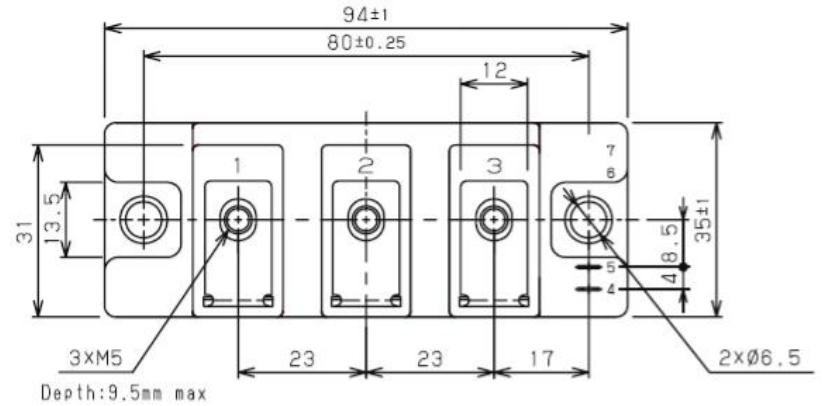
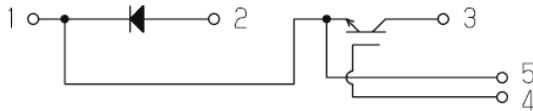


□ 回路図 : **CIRCUIT**

□ 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℃	50	A	
		I _{CP}	Pulse ≤ 1ms	100		
	コ レ ク タ 損 失 Collector Power Dissipation	P _C	T _J =175℃	277	W	
T _J =150℃			231			
Diode	繰 り 返 し ピ ーク 逆 電 圧 Repetitive peak reverse voltage	V _{RRM}		1200	V	
	順 電 流 Forward Current	I _F		50	A	
		I _{FM}	Pulse ≤ 1ms	100		
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		T _{stg}		−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	F _{tor}	M6	3	N・m
		Busbar to Main Terminal		M5	2	

□ 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= 50A,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= 1.7mA		4.8	—	7.0	V
	入力容量 Input Capacitance		Cies	VCE= 25V,VGE= 0V,f= 1MHz		—	5.3	—	nF
	出力容量 Output Capacitance		Coes			—	0.16	—	
	帰還容量 Reverse Transfer Capacitance		Cres			—	0.12	—	
	ゲート電荷量 Gate Charge		Qg	VCC=600V, IC=50A, VGE=-15~+15V		—	550	—	nC
スイッチング時間 Switching Time	上昇時間 Rise Time	tr	VCC= 600V LS=38nH IC= 50A Inductive Load RG= 15Ω VGE= ±15V TJ= 150°C		—	60	—	ns	
	ターンオン遅延時間 Turn-on Delay Time	td(on)			—	110	—		
	下降時間 Fall Time	tf			—	180	—		
	ターンオフ遅延時間 Turn-off Delay Time	td(off)			—	500	—		
Diode	順電圧 Peak Forward Voltage		VF	IF= 50A,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 LS=38nH IC= 50A Inductive Load RG= 15Ω VGE= ±15V TJ= 150°C		—	130	—	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	$R_{th(j-c)}$	Junction to Case Per 1 Arm (Tc測定点:チップ直下)	—	—	0.54	$^\circ\text{C}/W$
	Diode			—	—	0.97	
接触熱抵抗 Thermal Resistance	IGBT	$R_{th(c-f)}$	Case to heatsink Per 1 Arm Paste=1W/(m 2 · $^\circ\text{C}$)	—	0.10	—	
	Diode			—	0.17	—	

特性图 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

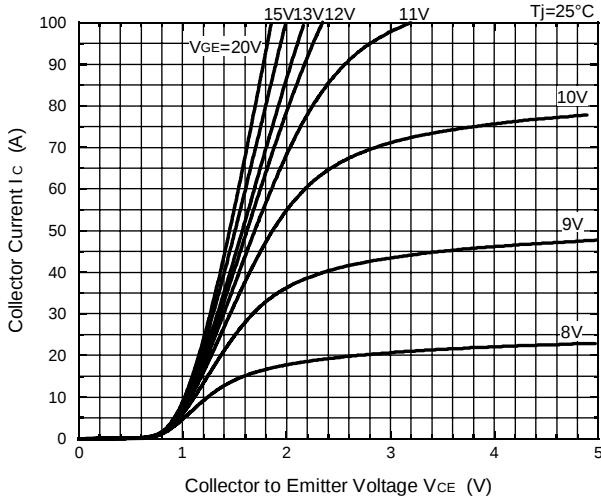


Fig.2- Saturation Voltage Characteristics (Typical)

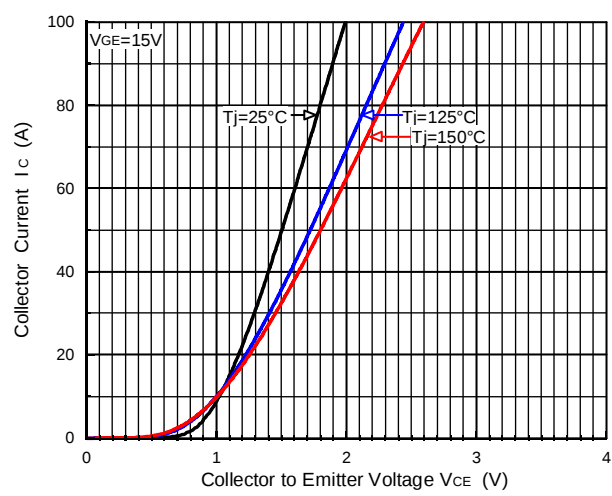


Fig.3- Transfer Characteristics (Typical)

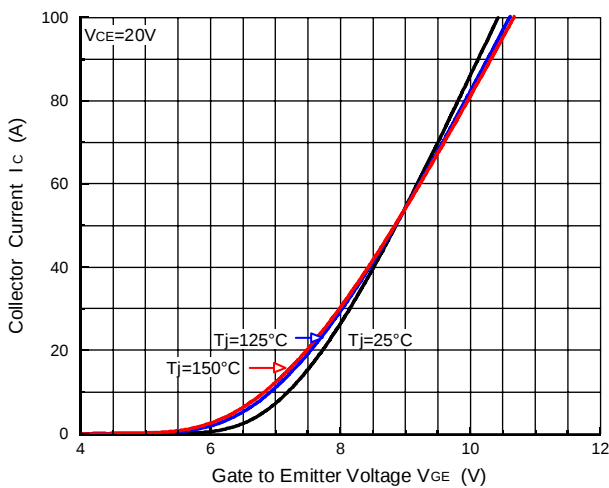


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

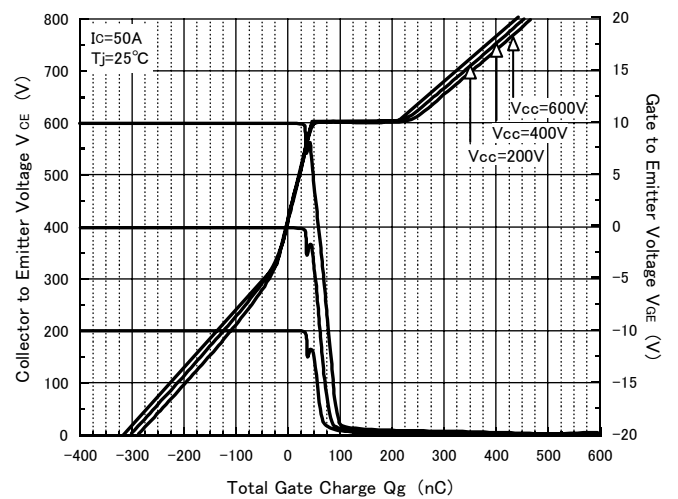


Fig.5- Collector Current vs. Switching Time

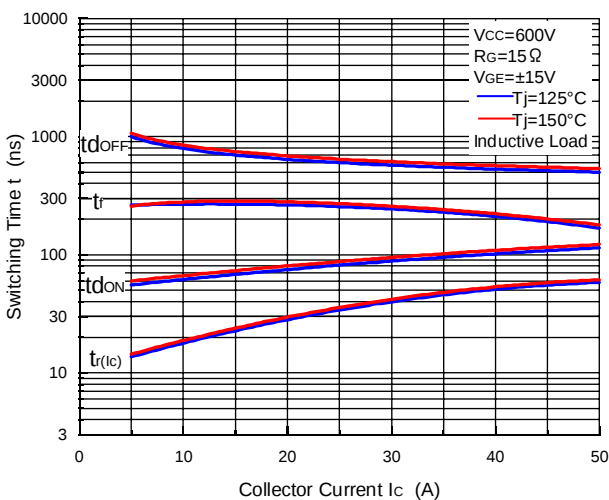
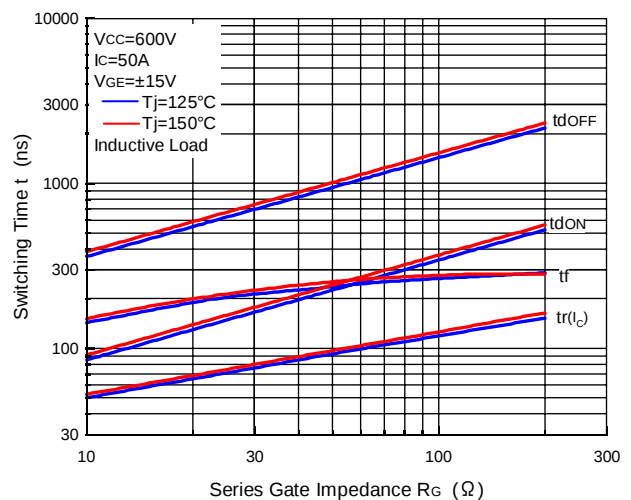


Fig.6- Series Gate Impedance vs. Switching Time



特性図 : CHARACTERISTICS CURVES

Fig.7- Collector Current vs. Switching Loss

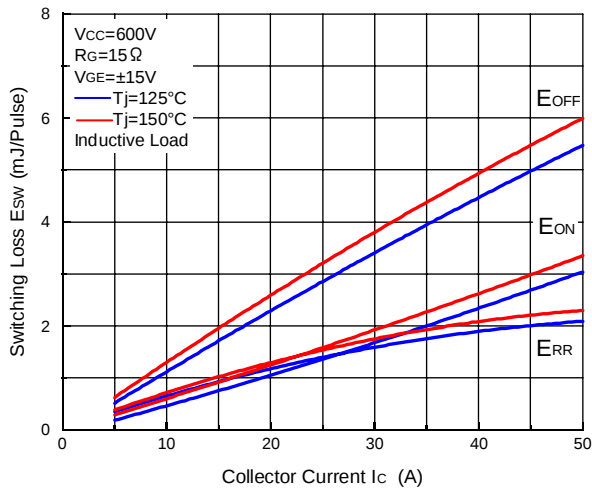


Fig.8- Series Gate Impedance vs. Switching Loss

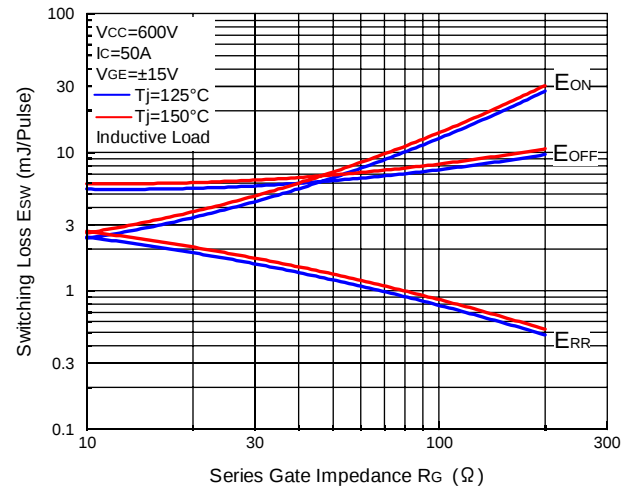


Fig.9 - Forward Characteristics of FWD (Typical)

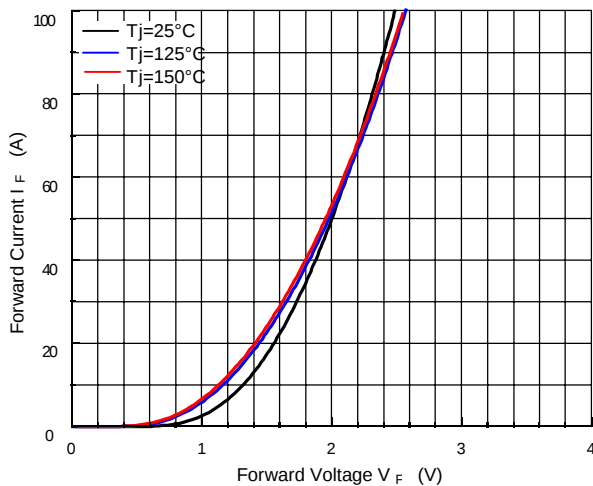


Fig.10- FWD Reverse Recovery Characteristics (Typical)

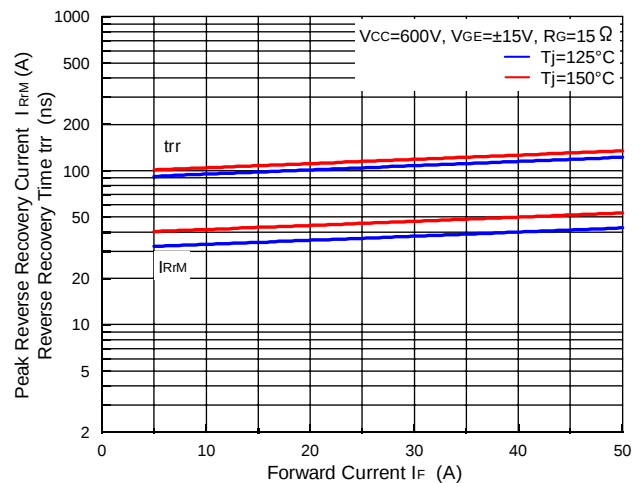


Fig.11- Reverse Bias Safe Operating Area

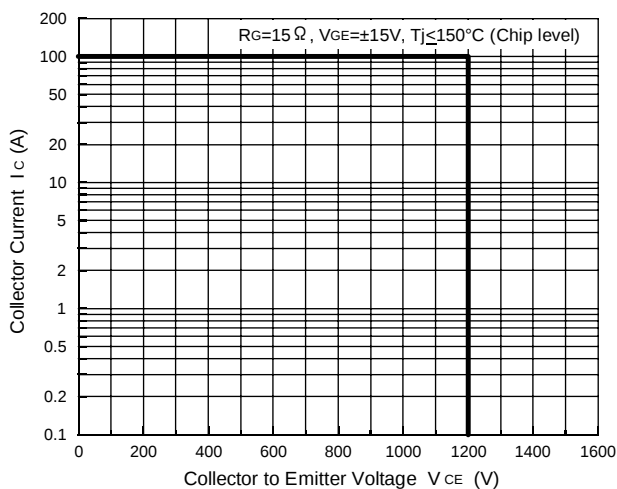


Fig.12- Transient Thermal Impedance

