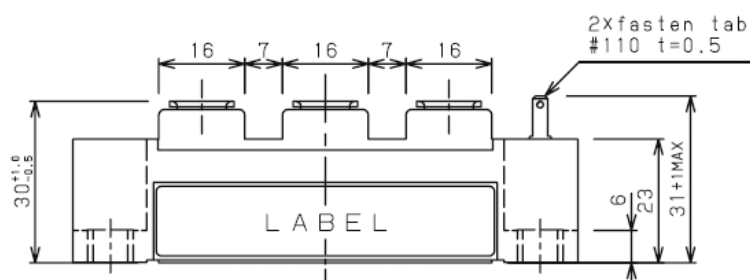
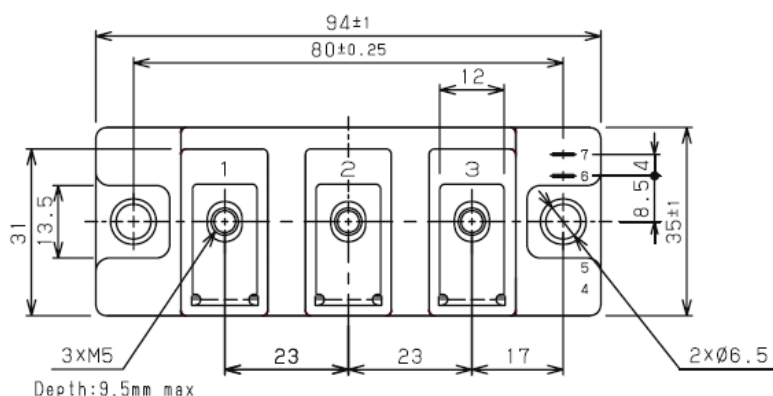
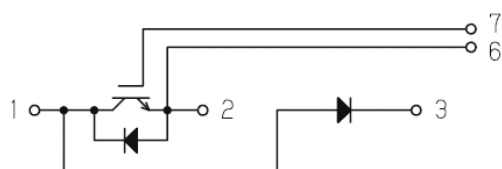


□ 回路図 : *CIRCUIT*

□ 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 $T_c=85^{\circ}\text{C}$	50	A
		I_{CP}	Pulse $\leq 1\text{ms}$	100	
FWD	繰り返しピーク逆電圧 Repetitive peak reverse voltage	V_{RRM}	$T_j=175^{\circ}\text{C}$	277	W
			$T_j=150^{\circ}\text{C}$	231	
	順電流 Forward Current	I_F		50	A
		I_{FM}	Pulse $\leq 1\text{ms}$	100	
	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		M5	2	

□ 電 気 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	—
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	—		
FWD	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 Terminal 3 - Main Terminal 2		—	30	—	nH

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

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Resistance	I G B T	Rth(j-c)	Junction to Case Per 1 Arm (Tc測定点:チップ直下)	—	—	0.54	°C/W
	F W D			—	—	0.97	
接触熱抵抗 Thermal Resistance	I G B T	Rth(c-f)	Case to heatsink Per 1 Arm Paste=1W/(m ² °C)	—	0.10	—	
	F W D			—	0.17	—	

□ 特性图 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

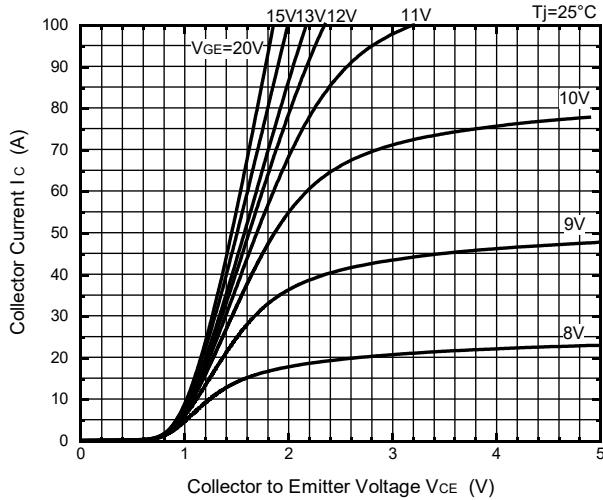


Fig.2- Saturation Voltage Characteristics (Typical)

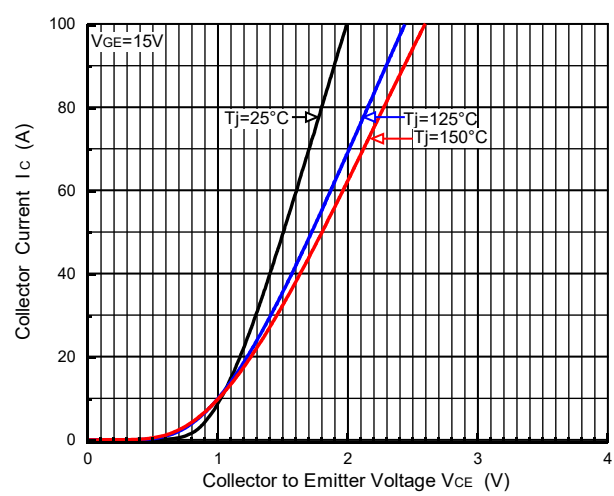


Fig.3- Transfer Characteristics (Typical)

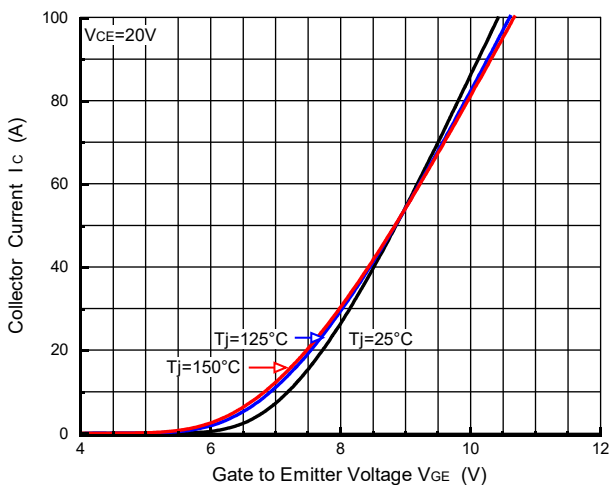


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

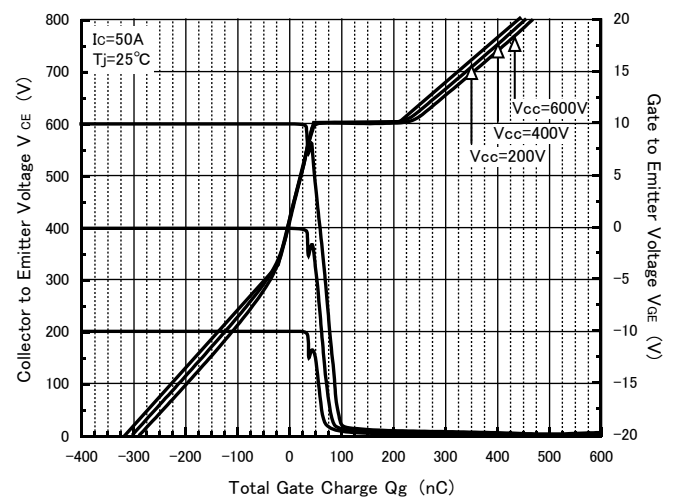


Fig.5- Collector Current vs. Switching Time

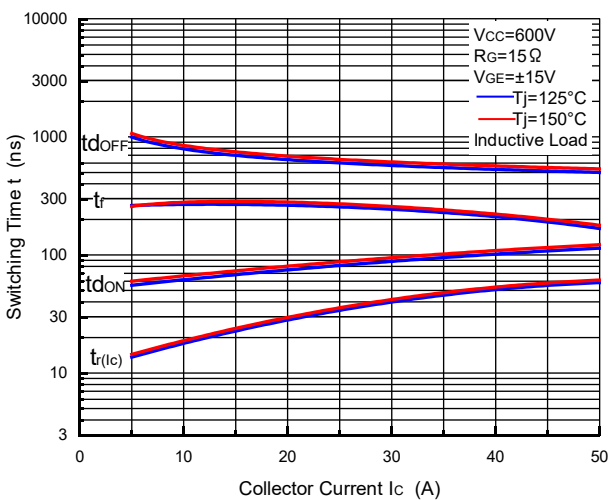
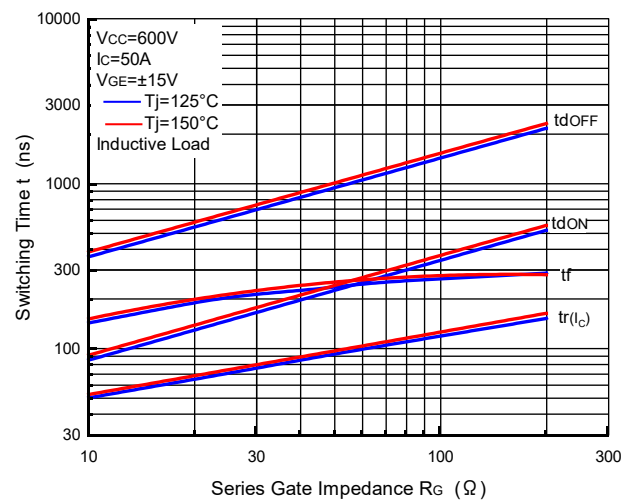


Fig.6- Series Gate Impedance vs. Switching Time



□ 特性図 : **CHARACTERISTICS CURVES**

Fig.7- Collector Current vs. Switching Loss

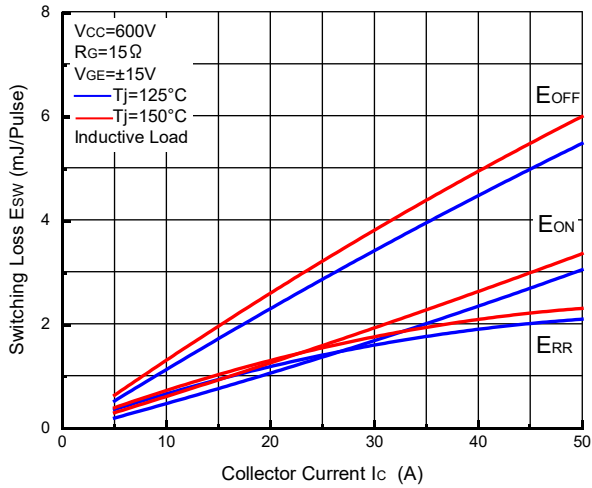


Fig.8- Series Gate Impedance vs. Switching Loss

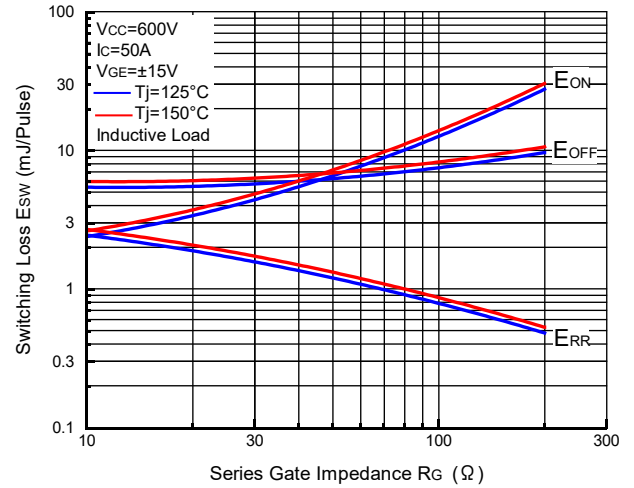


Fig.9 - Forward Characteristics of FWD (Typical)

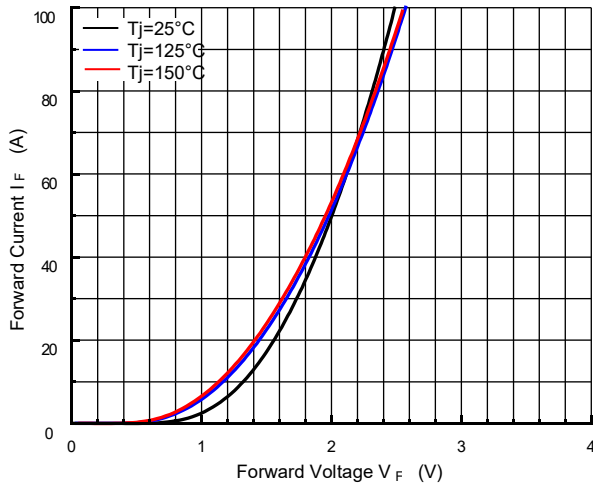


Fig.10- Reverse Recovery Characteristics of FWD & Inverse Diode (Typical)

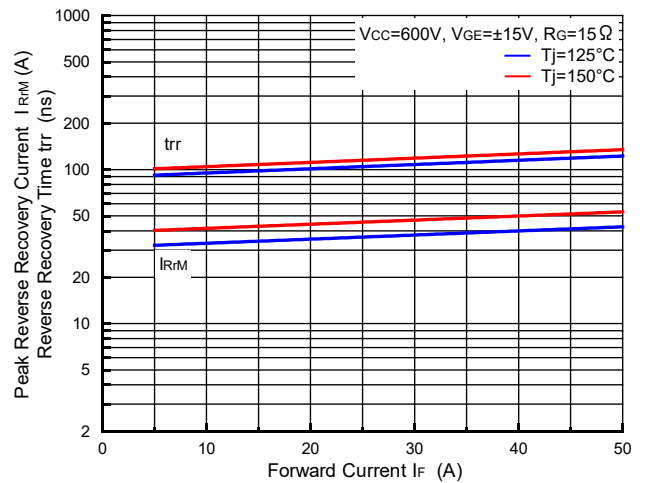


Fig.11- Reverse Bias Safe Operating Area

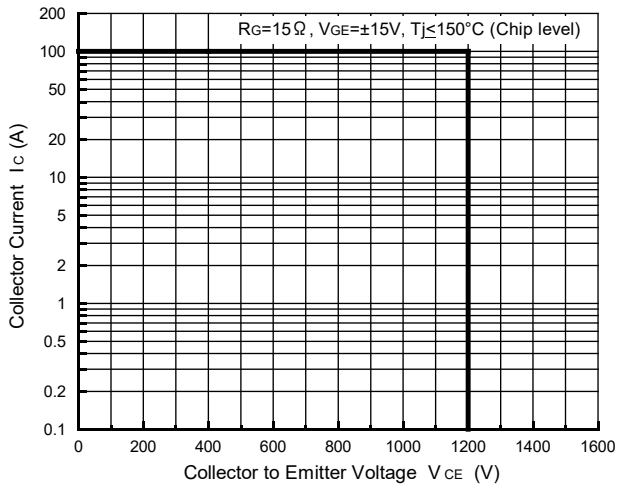
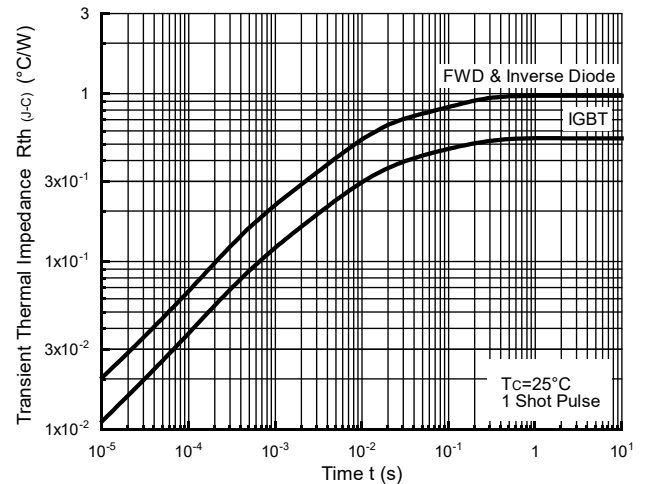


Fig.12- Transient Thermal Impedance



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