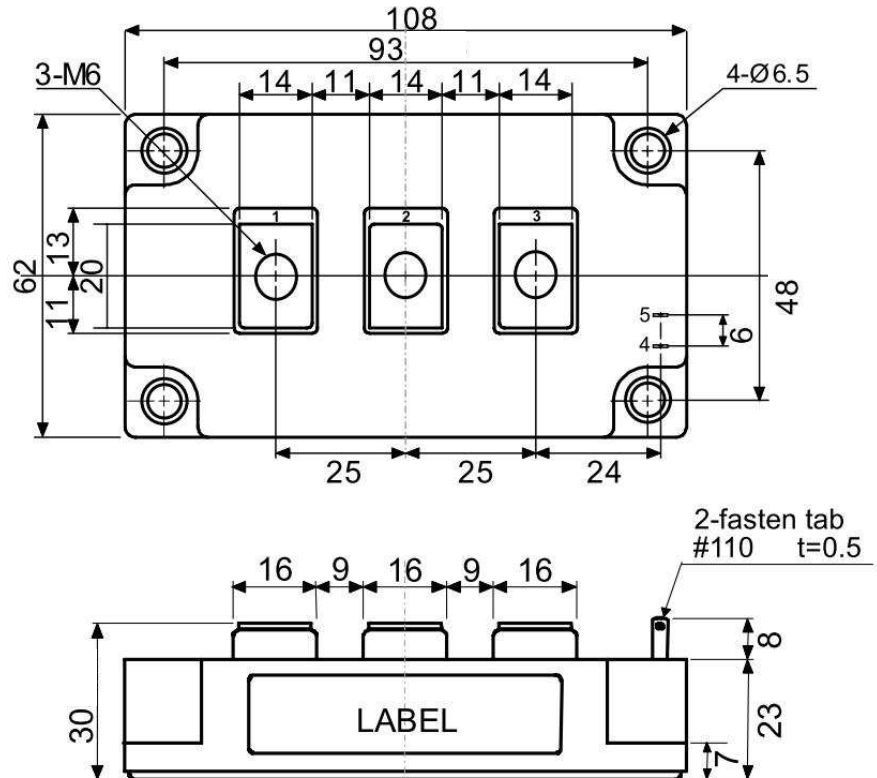
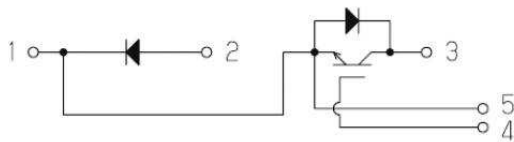


□ 回路図 : *CIRCUIT*

□ 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	
FWD	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	I_{CES}	$V_{CE}=1200\text{V}, V_{GE}=0\text{V}$	—	—	1.0	mA
	ゲート漏れ電流 Gate-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 20\text{V}, V_{CE}=0\text{V}$	—	—	1.0	μA
	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	$V_{CE(sat.)}$	$I_C=400\text{A}, V_{GE}=15\text{V}$ (chip level)	$T_J=25^\circ\text{C}$	—	1.50	V
				$T_J=125^\circ\text{C}$	—	1.70	
				$T_J=150^\circ\text{C}$	—	1.80	
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage	$V_{GE(th.)}$	$V_{CE}=10\text{V}, I_C=13.4\text{mA}$	4.8	—	7.0	V
	入力容量 Input Capacitance	C_{ies}	$V_{CE}=25\text{V}, V_{GE}=0\text{V}, f=1\text{MHz}$	—	38.0	—	nF
	出力容量 Output Capacitance	C_{oes}		—	1.12	—	
	帰還容量 Reverse Transfer Capacitance	C_{res}		—	0.90	—	
	ゲート電荷量 Gate Charge	Q_g	$V_{CC}=600\text{V}, I_C=400\text{A}, V_{GE}=-15\sim+15\text{V}$	—	4400	—	nC
FWD	スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC}=600\text{V}$ Inductive Load $I_C=400\text{A}$ $R_G=2.0\Omega$ $V_{GE}=\pm 15\text{V}$ $T_J=150^\circ\text{C}$	—	90	—	ns
		ターンオン遅延時間 Turn-on Delay Time		—	220	—	
		下降時間 Fall Time		—	290	—	
		ターンオフ遅延時間 Turn-off Delay Time		—	800	—	
FWD	順電圧 Peak Forward Voltage	V_F	$I_F=400\text{A}, V_{GE}=0\text{V}$ (chip level)	$T_J=25^\circ\text{C}$	—	2.00	V
				$T_J=125^\circ\text{C}$	—	1.98	
				$T_J=150^\circ\text{C}$	—	1.95	
FWD	逆回復時間 Reverse Recovery Time	t_{rr}	$V_{CC}=600\text{V}$ Inductive Load $I_F=400\text{A}$ $R_G=2.0\Omega$ $V_{GE}=\pm 15\text{V}$ $T_J=150^\circ\text{C}$	—	250	—	ns
				—	250	—	

□ 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	$^\circ\text{C}/\text{W}$
	FWD		Per 1 Arm (Tc測定点:チップ直下)	—	—	0.105	

特性図 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

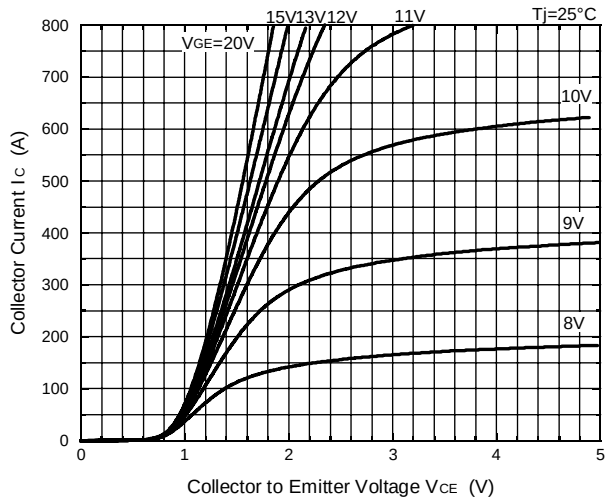


Fig.2- Saturation Voltage Characteristics (Typical)

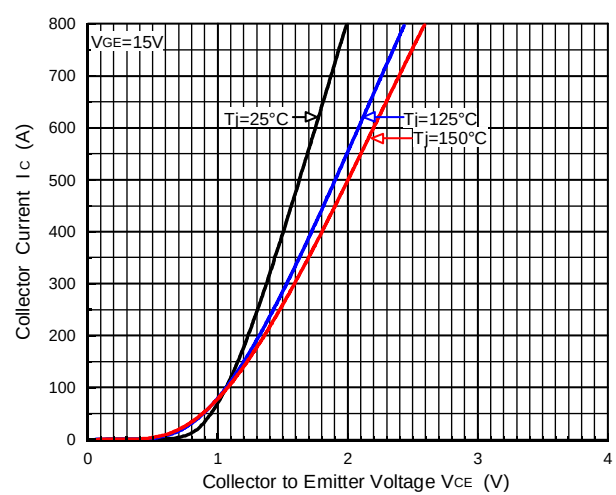


Fig.3- Transfer Characteristics (Typical)

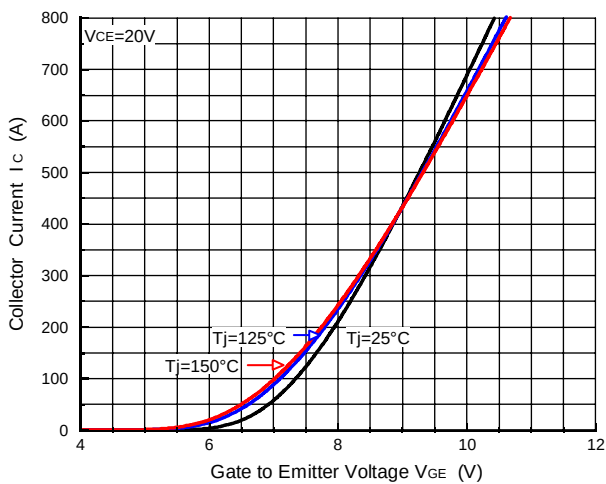


Fig.4 - Gate Charge vs. Collector to Emitter Voltage (Typical)

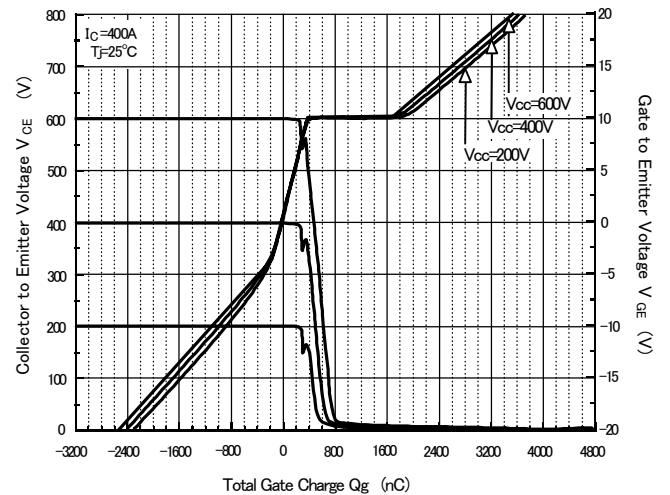


Fig.5- Collector Current vs. Switching Time

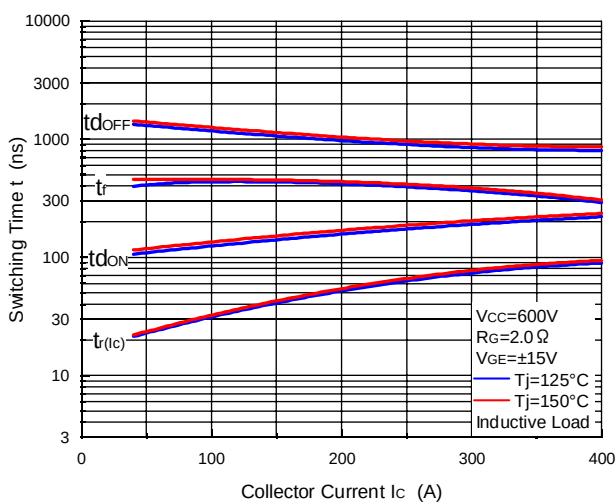
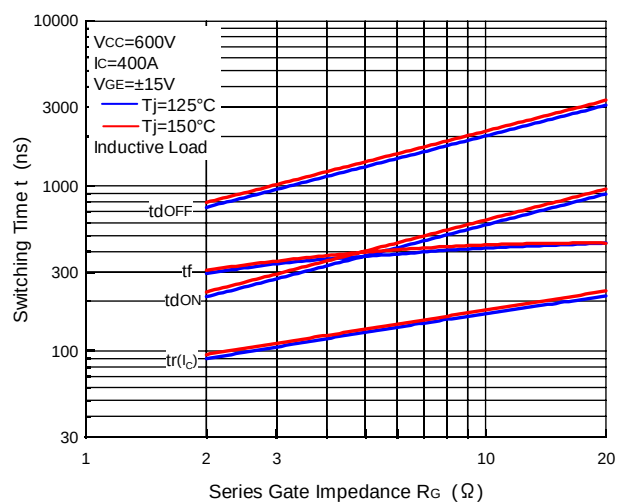


Fig.6- Series Gate Impedance vs. Switching Time



特性図 : CHARACTERISTICS CURVES

Fig.7- Collector Current vs. Switching Loss

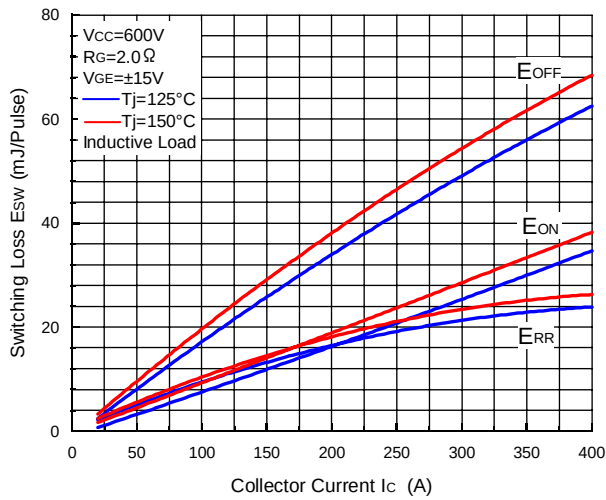


Fig.8- Series Gate Impedance vs. Switching Loss

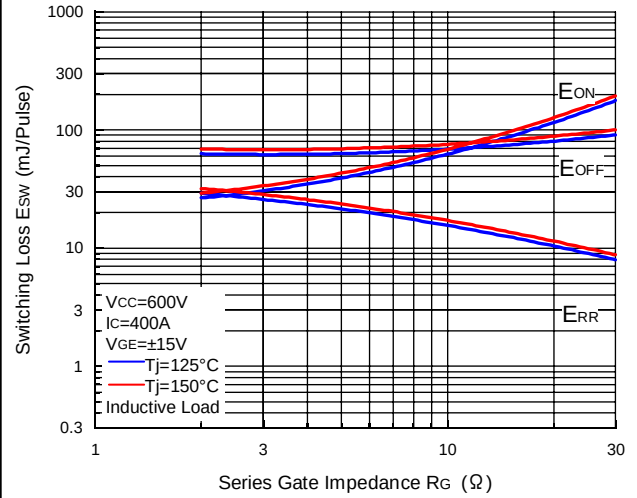


Fig.9- Forward Characteristics of FWD (Typical)

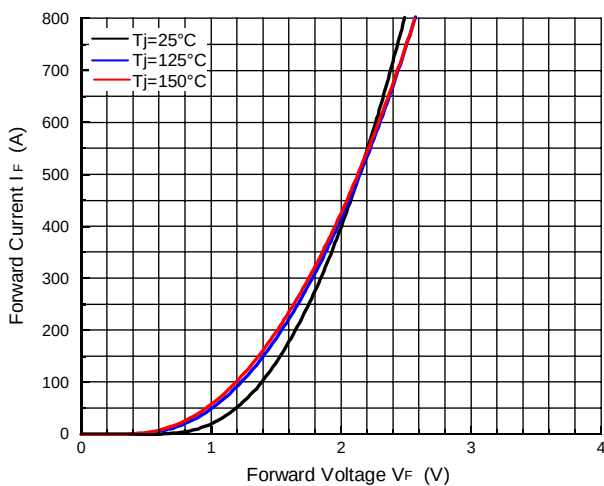


Fig.10- FWD Reverse Recovery Characteristics (Typical)

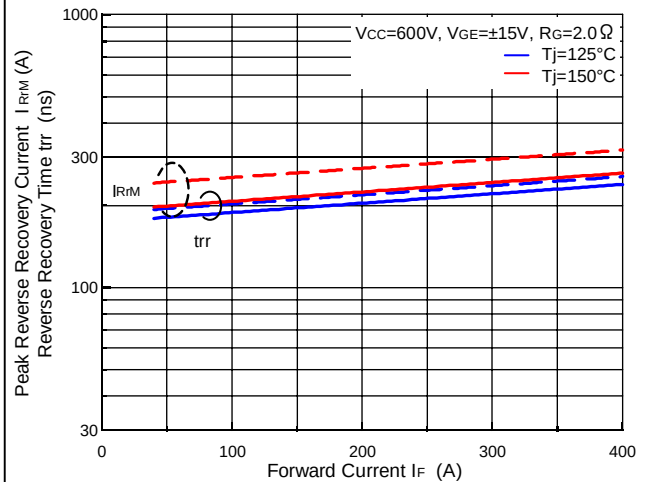


Fig.11- Reverse Bias Safe Operating Area

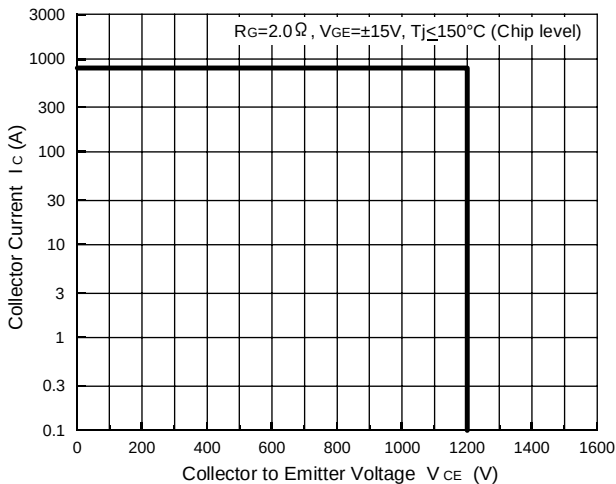


Fig.12- Transient Thermal Impedance

