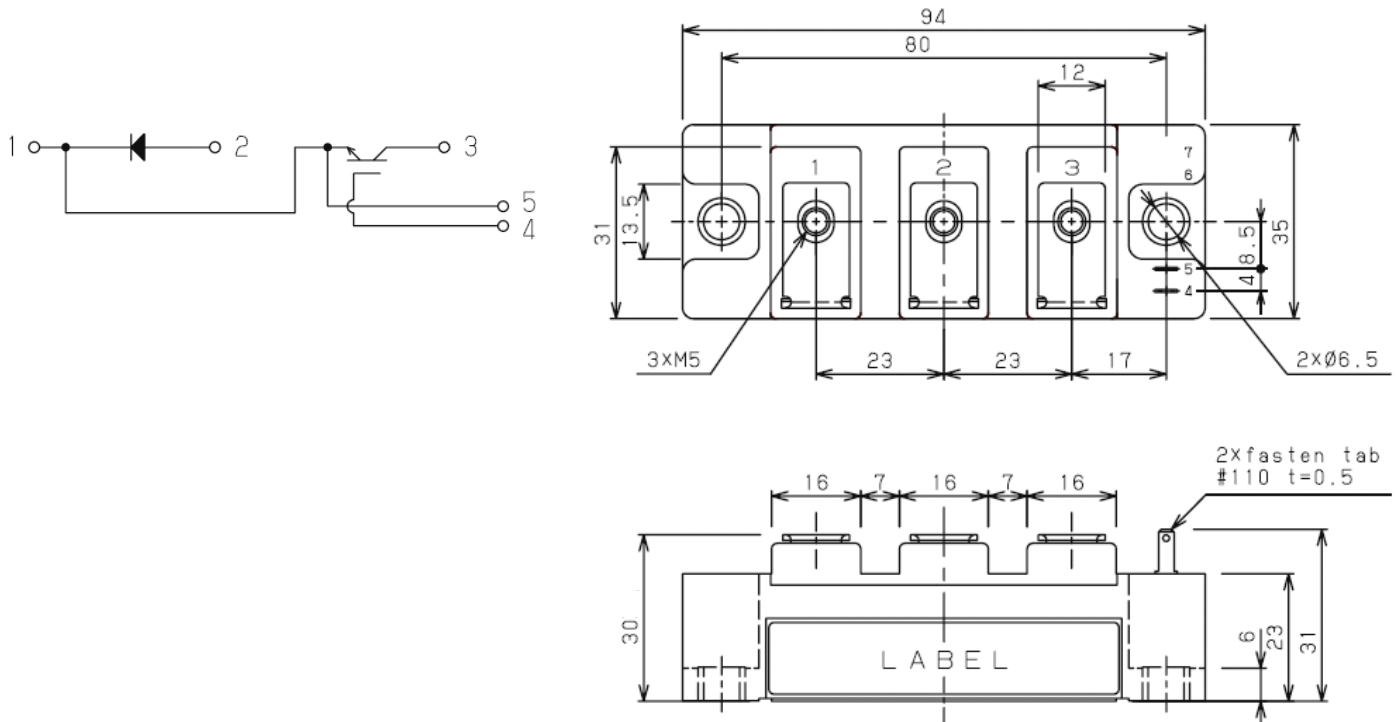


□ 回路図 : *CIRCUIT*

□ 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	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 $T_c=85^{\circ}\text{C}$	75	A
		I_{CP}	Pulse $\leq 1\text{ms}$	150	
FWD	繰り返しピーク逆電圧 Repetitive peak reverse voltage	V_{RRM}		650	V
		I_F		75	A
	順電流 Forward Current	I_{FM}	Pulse $\leq 1\text{ms}$	150	
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°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	V _{CE} = 650V, V _{GE} = 0V	—	—	1.0	mA
	ゲート漏れ電流 Gate-Emitter Leakage Current	IGES	V _{GE} = ±20V, V _{CE} = 0V	—	—	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 = 75A, V _{GE} = 15V (chip level)	T _J =25°C	—	1.45	V
				T _J =125°C	—	1.65	
				T _J =150°C	—	1.70	
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage	V _{GE(th.)}	V _{CE} = 10V, I _C = 1.5mA	4.8	—	7.0	V
	入力容量 Input Capacitance	C _{ies}	V _{CE} = 25V, V _{GE} = 0V, f= 1MHz	—	6.6	—	nF
	出力容量 Output Capacitance	C _{oes}		—	0.3	—	
	帰還容量 Reverse Transfer Capacitance	C _{res}		—	0.2	—	
	ゲート電荷量 Gate Charge	Q _g	V _{CC} =300V, I _C =75A, V _{GE} =-15~+15V	—	660	—	nC
IGBT	スイッチング時間 Switching Time	上昇時間 Rise Time	V _{CC} = 300V L _S =38nH I _C = 75A Inductive Load R _G = 12Ω V _{GE} = ±15V T _J = 150°C	—	75	—	ns
		ターンオン遅延時間 Turn-on Delay Time		—	126	—	
		下降時間 Fall Time		—	71	—	
		ターンオフ遅延時間 Turn-off Delay Time		—	328	—	
FWD	順電圧 Peak Forward Voltage	V _F	I _F = 75A, V _{GE} =0V (chip level)	T _J =25°C	—	1.70	V
				T _J =125°C	—	1.60	
				T _J =150°C	—	1.55	
FWD	逆回復時間 Reverse Recovery Time	t _{rr}	V _{CC} = 300V L _S =38nH I _C = 75A Inductive Load R _G = 12Ω V _{GE} = ±15V T _J = 150°C	—	140	—	ns
内部配線抵抗 Internal Lead Resistance		R _{CC+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		L _{SCE}	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	Junction to Case Per 1 Arm (T _C 測定点:チップ直下)	—	—	0.49	°C/W
	FWD		—	—	1.30	
接触熱抵抗 Thermal Resistance	IGBT	Case to heatsink Per 1 Arm Paste=1W/(m ² ·°C)	—	0.10	—	
	FWD		—	0.17	—	

特性 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

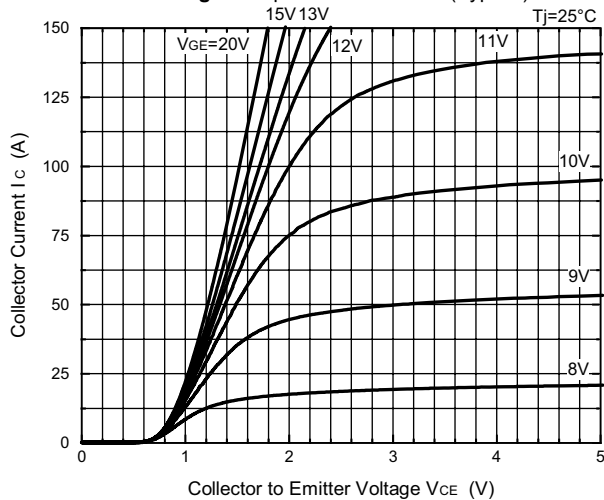


Fig.2- Saturation Voltage Characteristics (Typical)

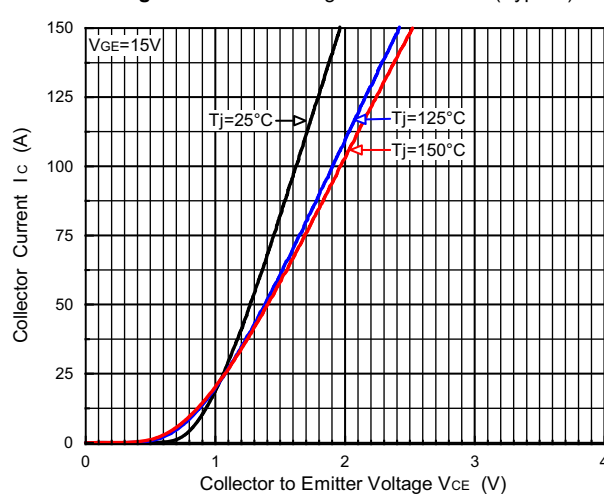


Fig.3- Transfer Characteristics (Typical)

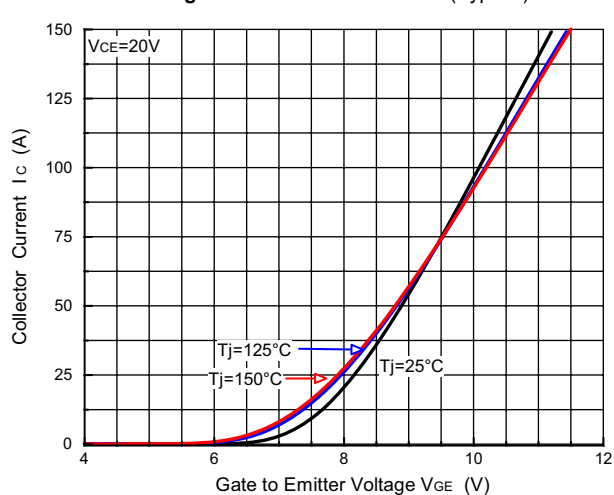


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

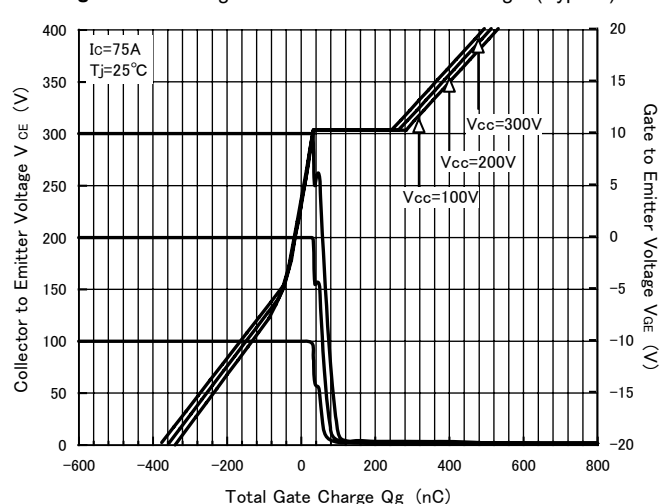


Fig.5- Collector Current vs. Switching Time (Typical)

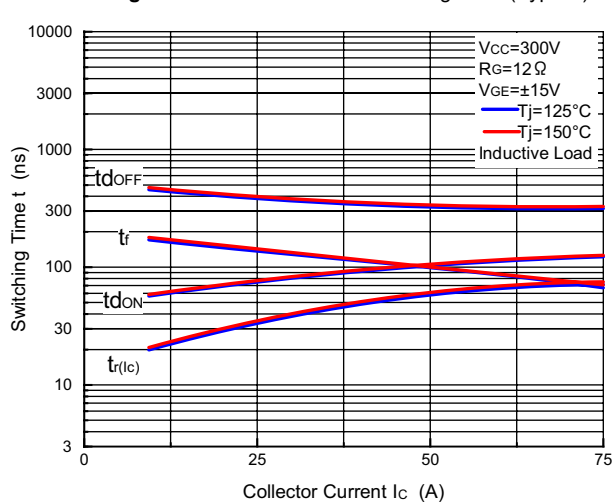
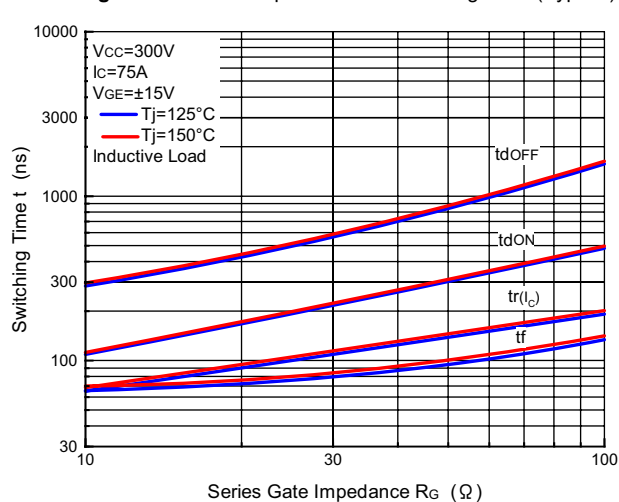


Fig.6- Series Gate Impedance vs. Switching Time (Typical)



特性图 : CHARACTERISTICS CURVES

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

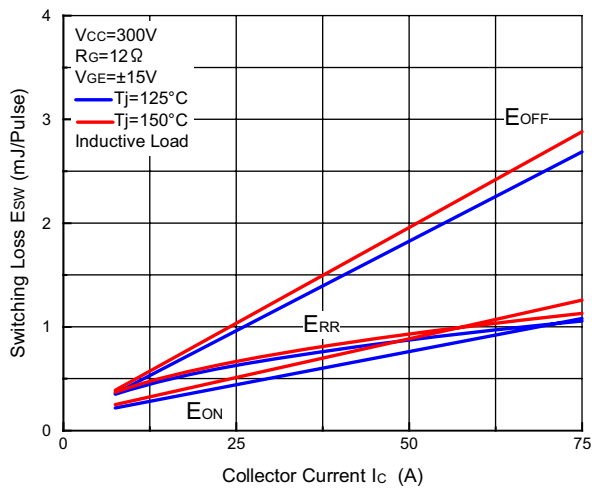


Fig.8- Series Gate Impedance vs. Switching Loss (Typical)

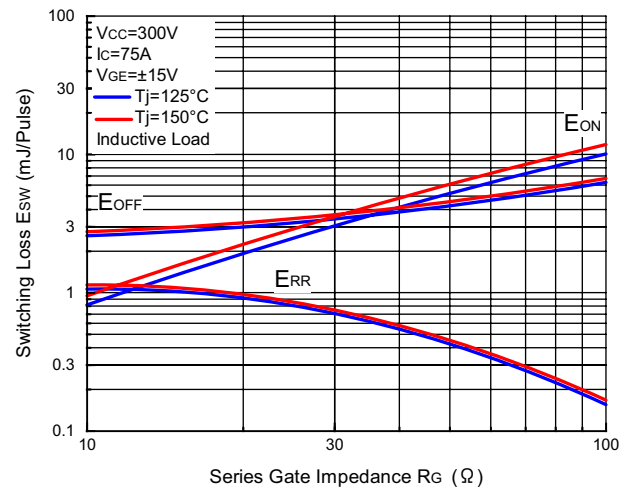


Fig.9- Forward Characteristics of Free Wheeling Diode (Typical)

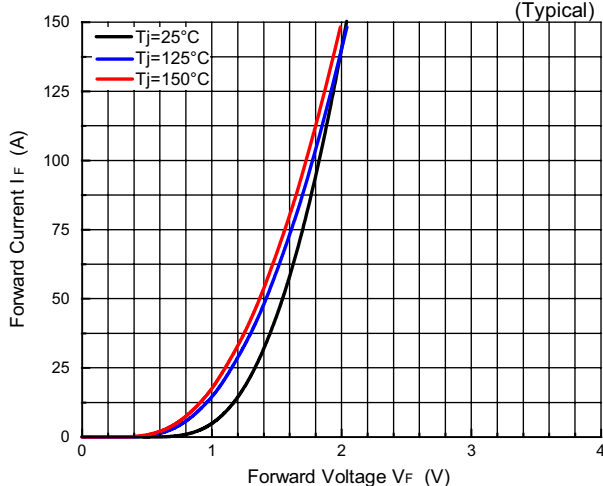


Fig.10- FWD Reverse Recovery Characteristics (Typical)

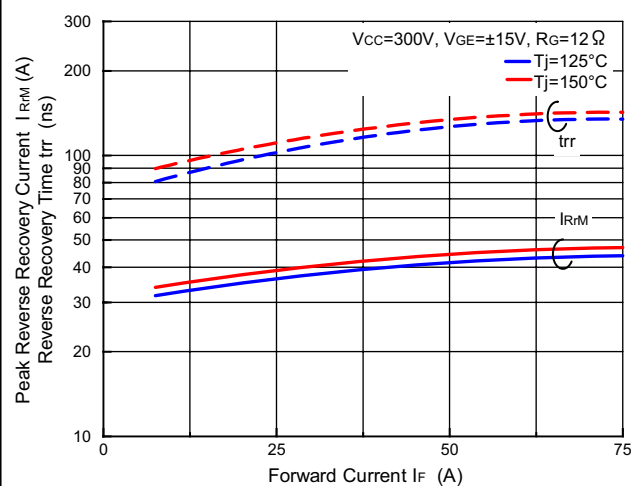


Fig.11- Reverse Bias Safe Operating Area

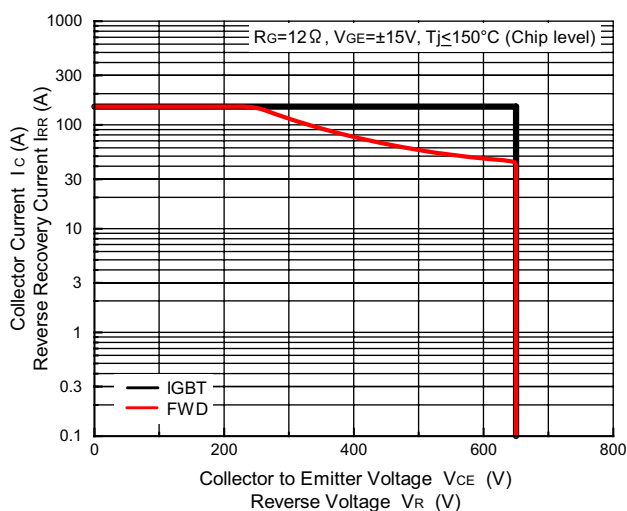


Fig.12- Transient Thermal Impedance

