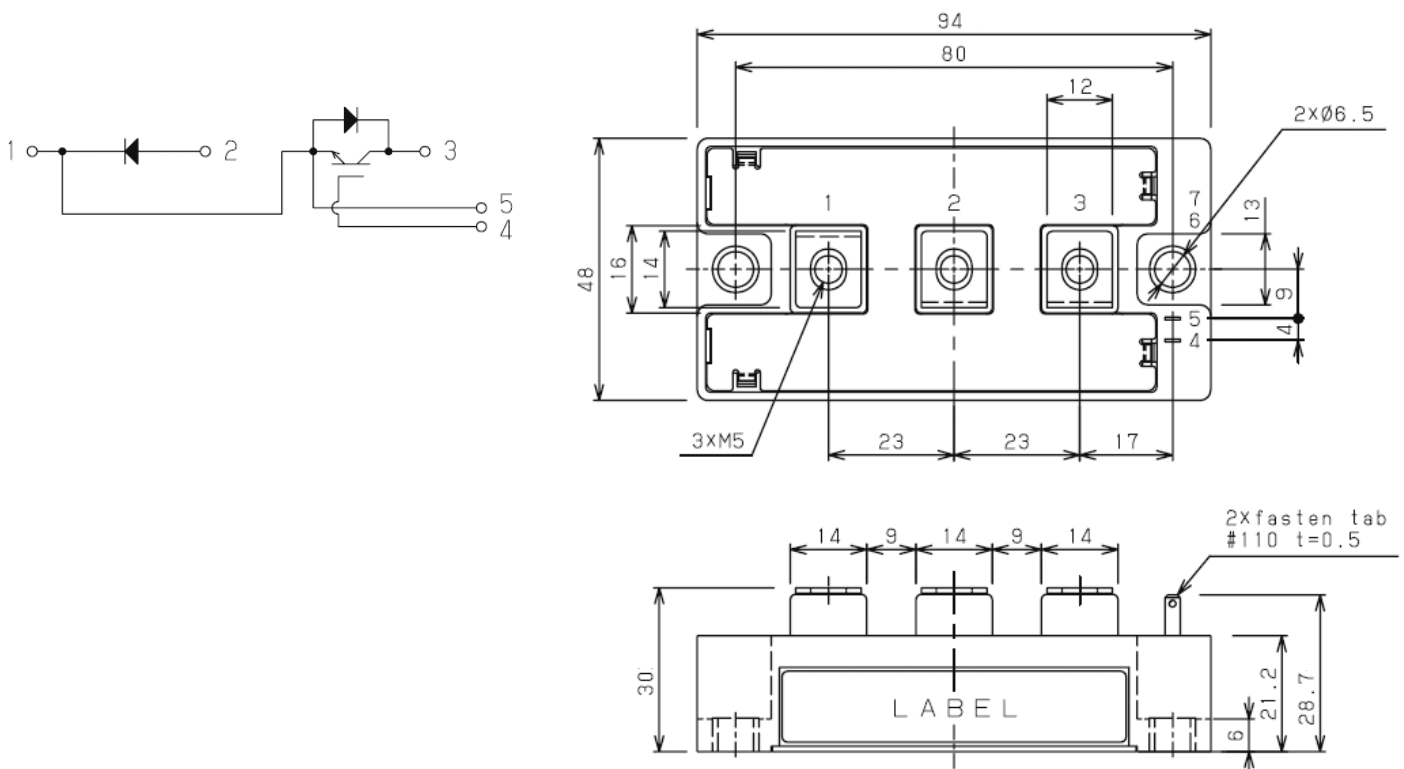


□ 回路図 : **CIRCUIT**

□ 概略図 : **SCHEMATIC DIAGRAM**

Dimension: [mm]



□ 最大定格 : **MAXIMUM RATINGS** (at T_c=25°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℃	300	A
		I _{CP}	Pulse ≤ 1ms	600	
	コ レ ク タ 損 失 Collector Power Dissipation	P _C	T _j =175℃	1153	W
T _j =150℃			961		
FWD	繰 り 返 し ピ ー ク 逆 電 圧 Repetitive peak reverse voltage	V _{RRM}		650	V
	順 電 流 Forward Current	I _F		300	A
		I _{FM}	Pulse ≤ 1ms	600	
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 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	$V_{CE}=650\text{V}, V_{GE}=0\text{V}$	—	—	1.0	mA
	ゲート漏れ電流 Gate-Emitter Leakage Current	IGES	$V_{GE}=\pm 20\text{V}, V_{CE}=0\text{V}$	—	—	1.0	μA
	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	VCE(sat.)	$I_C=300\text{A}, V_{GE}=15\text{V}$ (chip level)	$T_J=25^\circ\text{C}$	—	1.45	V
				$T_J=125^\circ\text{C}$	—	1.65	
				$T_J=150^\circ\text{C}$	—	1.70	
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage	VGE(th.)	$V_{CE}=10\text{V}, I_C=6\text{mA}$	4.8	—	7.0	V
	入力容量 Input Capacitance	Cies	$V_{CE}=25\text{V}, V_{GE}=0\text{V}, f=1\text{MHz}$	—	25.0	—	nF
	出力容量 Output Capacitance	Coes		—	1.0	—	
	帰還容量 Reverse Transfer Capacitance	Cres		—	0.8	—	
	ゲート電荷量 Gate Charge	Qg	$V_{CC}=300\text{V}, I_C=300\text{A}, V_{GE}=-15\sim+15\text{V}$	—	2550	—	nC
FWD	スイッチング時間 Switching Time	上昇時間 Rise Time	$V_{CC}=300\text{V}$ $L_s=20\text{nH}$ $I_C=300\text{A}$ Inductive Load $R_G=3.6\Omega$ $V_{GE}=\pm 15\text{V}$ $T_J=150^\circ\text{C}$	$T_J=25^\circ\text{C}$	—	90	ns
		ターンオン遅延時間 Turn-on Delay Time		$T_J=125^\circ\text{C}$	—	220	
		下降時間 Fall Time		$T_J=150^\circ\text{C}$	—	95	
		ターンオフ遅延時間 Turn-off Delay Time			—	400	
FWD	順電圧 Peak Forward Voltage	V _F	$I_F=300\text{A}, V_{GE}=0\text{V}$ (chip level)	$T_J=25^\circ\text{C}$	—	1.70	V
				$T_J=125^\circ\text{C}$	—	1.60	
FWD	逆回復時間 Reverse Recovery Time	t _{rr}	$V_{CC}=300\text{V}$ $L_s=20\text{nH}$ $I_C=300\text{A}$ Inductive Load $R_G=3.6\Omega$ $V_{GE}=\pm 15\text{V}$ $T_J=150^\circ\text{C}$		—	175	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	—	—	0.6	mΩ
FWD	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	—	27	—	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 (Tc測定点:チップ直下)	—	—	0.13	°C/W
	FWD		—	—	0.33	
接触熱抵抗 Thermal Resistance	IGBT	Case to heatsink Per 1 Arm Paste=1W/(m ² ·°C)	—	0.05	—	
	FWD		—	0.10	—	

特性 : CHARACTERISTICS CURVES

Fig.1- Output Characteristics (Typical)

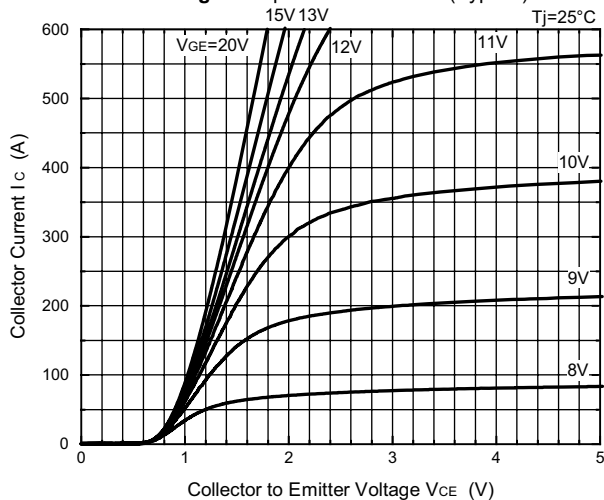


Fig.2- Saturation Voltage Characteristics (Typical)

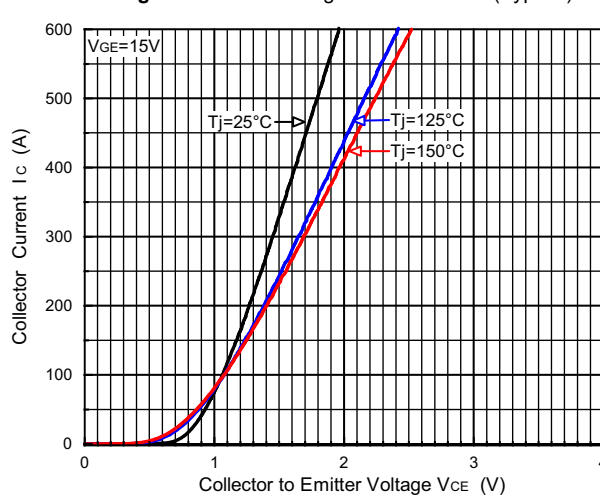


Fig.3- Transfer Characteristics (Typical)

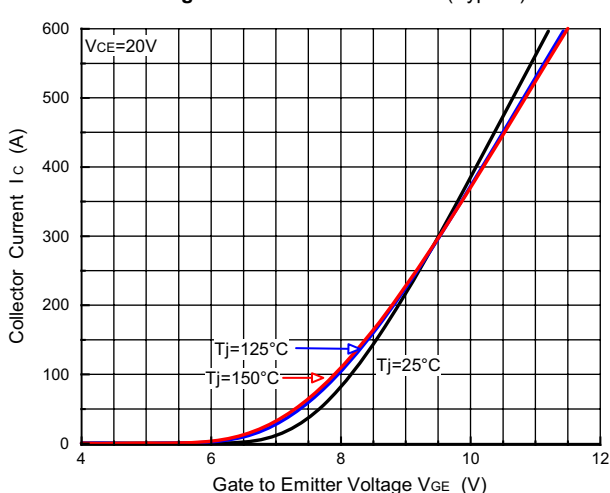


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

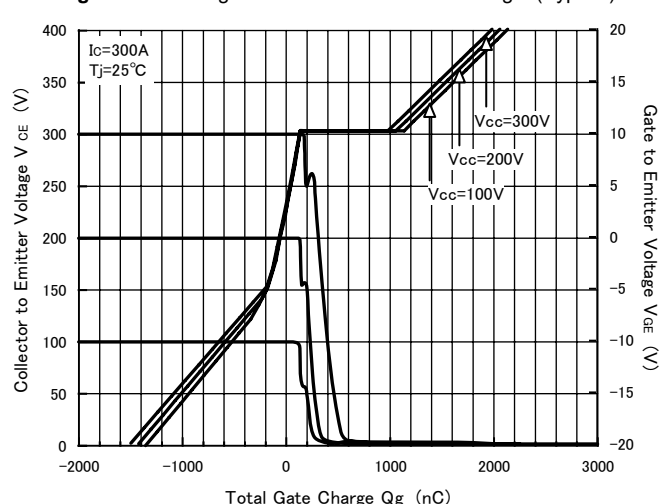


Fig.5- Collector Current vs. Switching Time (Typical)

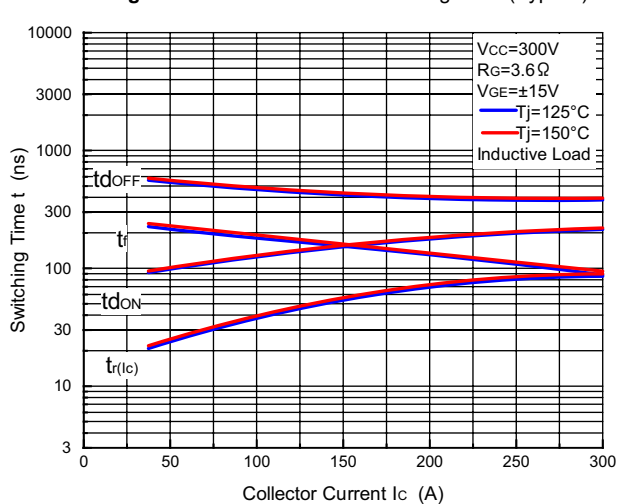
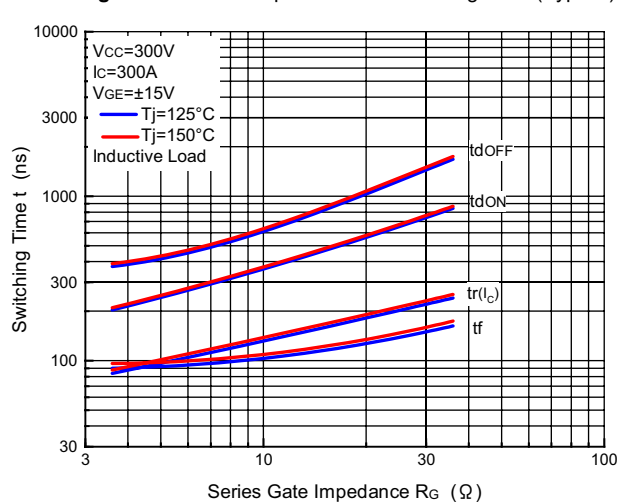


Fig.6- Series Gate Impedance vs. Switching Time (Typical)



特性图 : CHARACTERISTICS CURVES

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

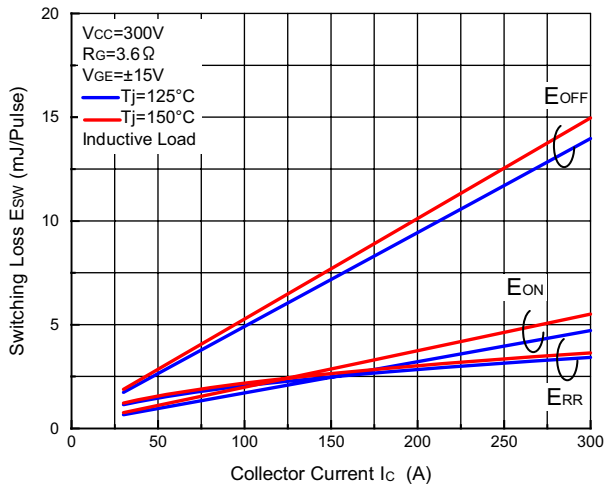


Fig.8- Series Gate Impedance vs. Switching Loss (Typical)

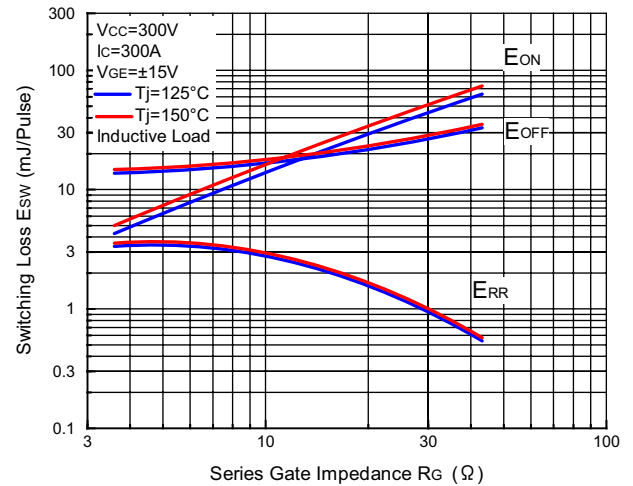


Fig.9- Forward Characteristics of Free Wheeling Diode (Typical)

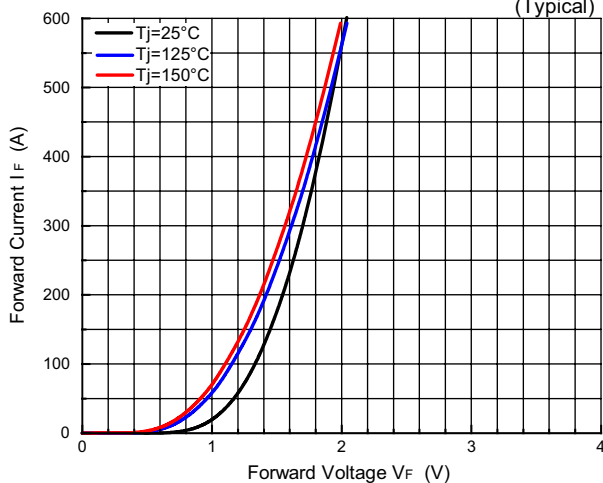


Fig.10- FWD Reverse Recovery Characteristics (Typical)

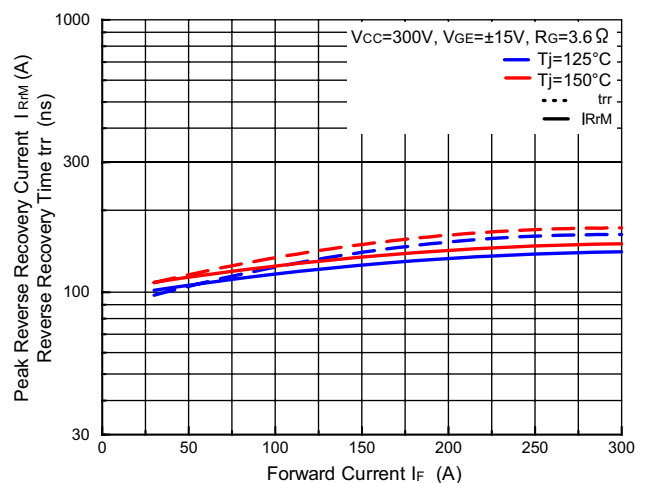


Fig.11- Reverse Bias Safe Operating Area

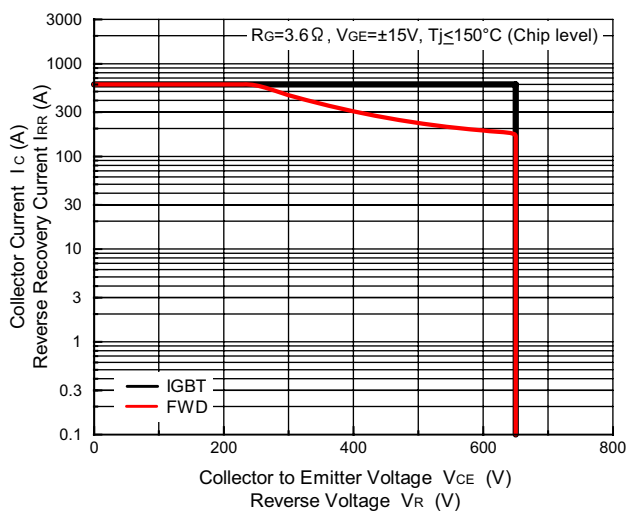


Fig.12- Transient Thermal Impedance

