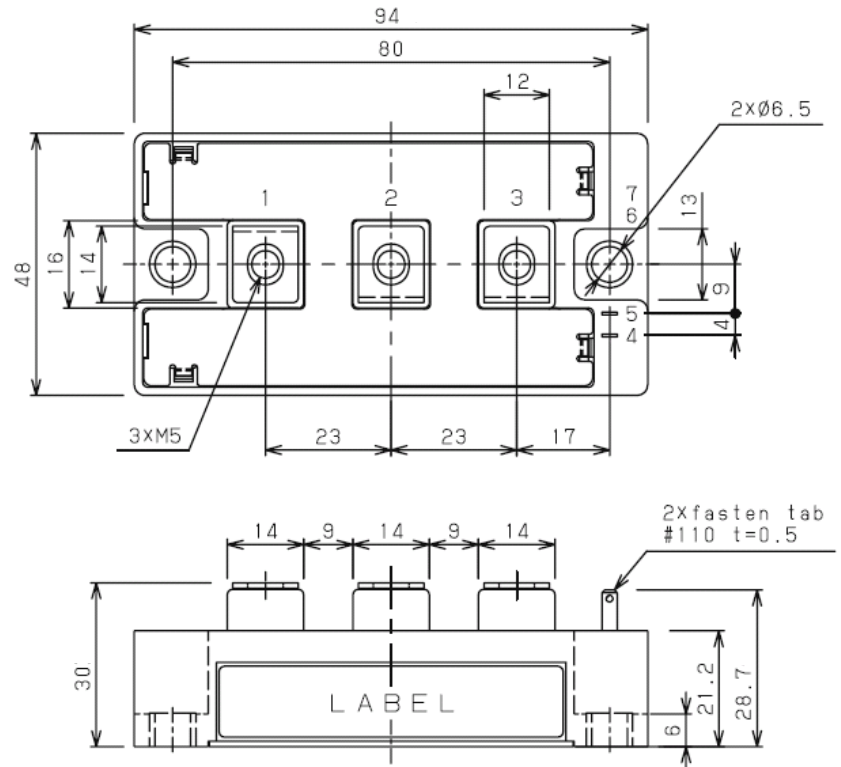
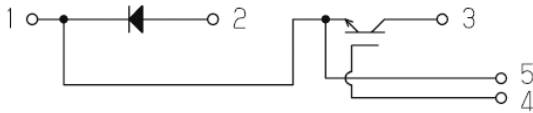


□ 回路図 : *CIRCUIT*

 □ 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	$\pm 20$	V	
	コレクタ電流 Collector Current	$I_C$	DC $T_c=85^\circ\text{C}$	300	A	
		$I_{CP}$	Pulse $\leq 1\text{ms}$	600		
コレクタ損失 Collector Power Dissipation	$P_C$	$T_j=175^\circ\text{C}$	1153	W		
		$T_j=150^\circ\text{C}$	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 $\leq 1\text{ms}$	600		
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	

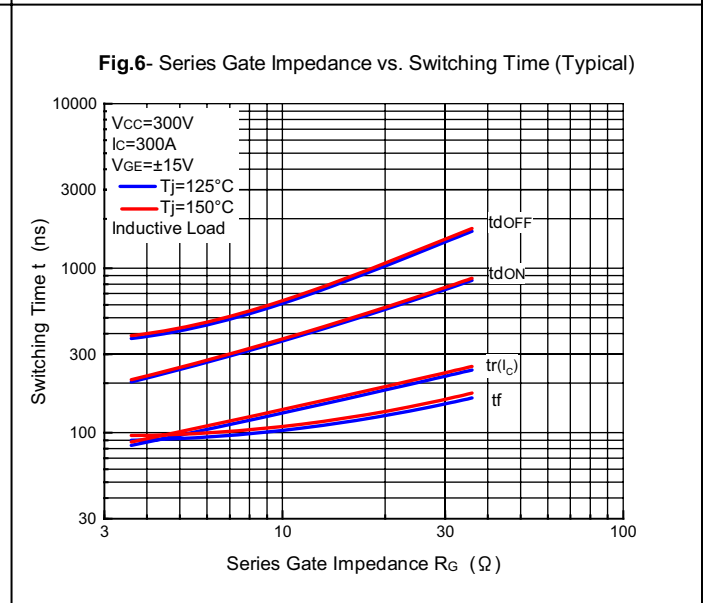
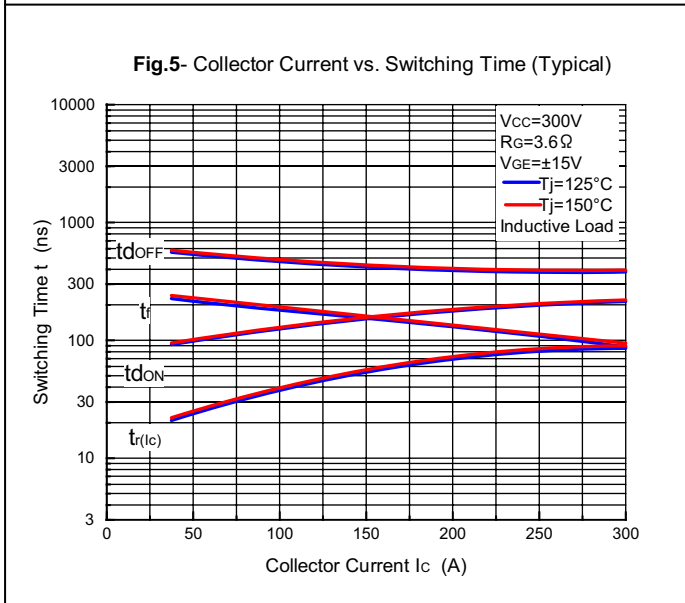
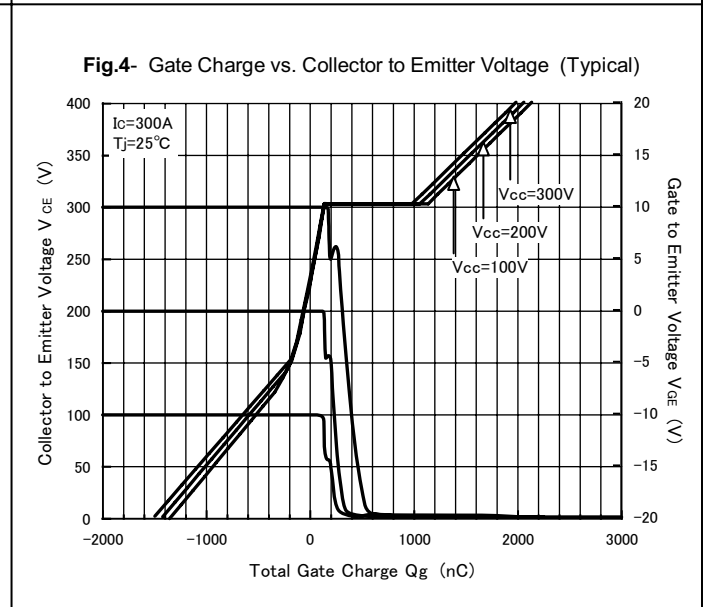
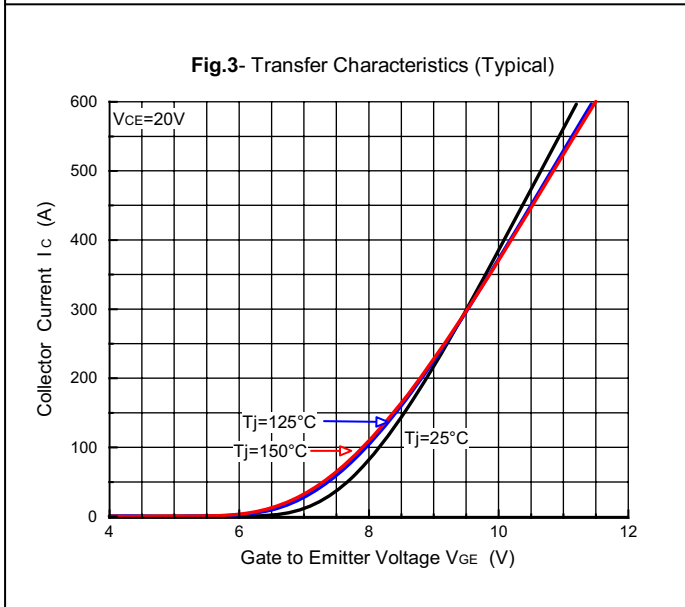
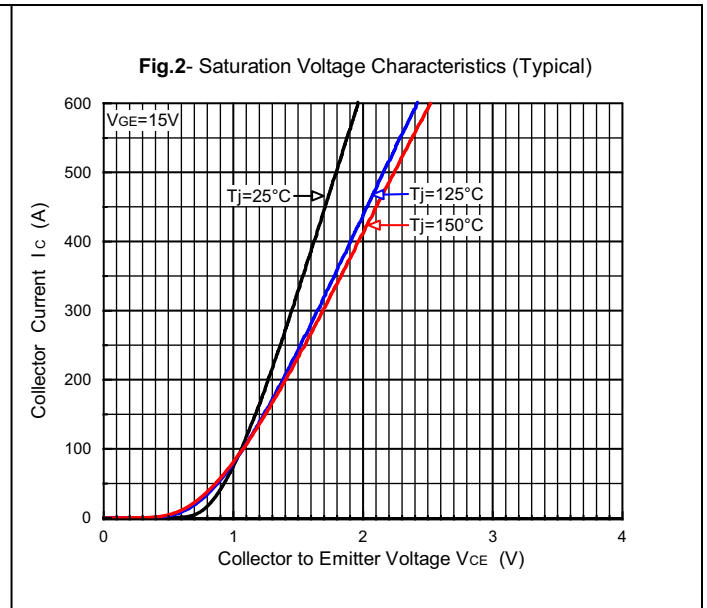
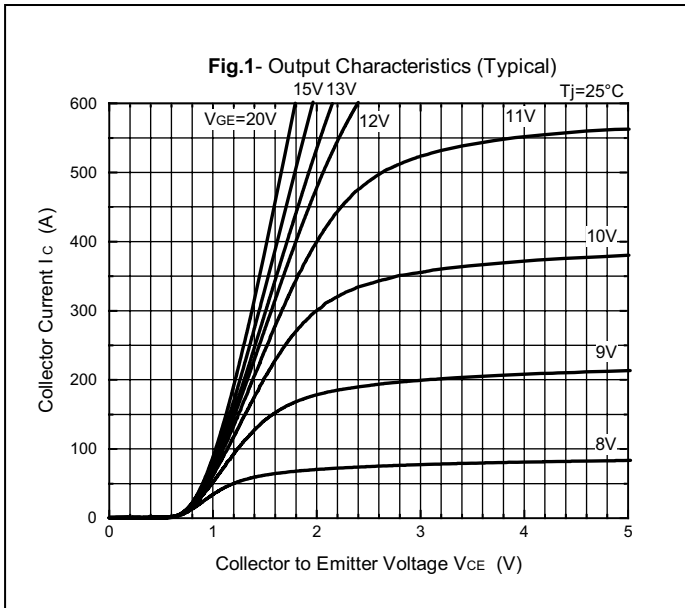
□ 電気的特性 : **ELECTRICAL CHARACTERISTICS** (at  $T_J=25^\circ\text{C}$  unless otherwise specified)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit	
IGBT	コレクタ遮断電流 Collector-Emitter Cut-Off Current	ICES	$V_{CE}=650\text{V}, V_{GE}=0\text{V}$	—	—	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	$\mu\text{A}$	
	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	$V_{CE(sat.)}$	$I_C=300\text{A}, V_{GE}=15\text{V}$ (chip level)	$T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$ $T_J=150^\circ\text{C}$	— — —	1.45 1.65 1.70	1.95 — —	V
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage	$V_{GE(th.)}$	$V_{CE}=10\text{V}, I_C=6\text{mA}$		4.8	—	7.0	V
	入力容量 Input Capacitance	$C_{ies}$	$V_{CE}=25\text{V}, V_{GE}=0\text{V}, f=1\text{MHz}$		—	25.0	—	nF
	出力容量 Output Capacitance	$C_{oes}$			—	1.0	—	
	帰還容量 Reverse Transfer Capacitance	$C_{res}$			—	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
	スイッチング時間 Switching Time	上昇時間 Rise Time	tr	$V_{CC}=300\text{V}$ $L_s=20\text{nH}$	—	90	—	ns
		ターンオン遅延時間 Turn-on Delay Time	td(on)	$I_C=300\text{A}$ Inductive Load	—	220	—	
下降時間 Fall Time		tf	$R_G=3.6\Omega$	—	95	—		
ターンオフ遅延時間 Turn-off Delay Time		td(off)	$V_{GE}=\pm 15\text{V}$ $T_J=150^\circ\text{C}$	—	400	—		
FWD	順電圧 Peak Forward Voltage	$V_F$	$I_F=300\text{A}, V_{GE}=0\text{V}$ (chip level)	$T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$ $T_J=150^\circ\text{C}$	— — —	1.70 1.60 1.55	2.20 — —	V
	逆回復時間 Reverse Recovery Time	t <sub>rr</sub>	$V_{CC}=300\text{V}$ $L_s=20\text{nH}$ $I_C=300\text{A}$ 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		$R_{CC+EE'}$	主端子—チップ間 / 1素子 Main Terminal - Chip / Per 1 Arm		—	—	0.6	m $\Omega$
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	$R_{th(j-c)}$	Junction to Case Per 1 Arm (T <sub>c</sub> 測定点: チップ直下)	—	—	0.13	°C/W
	FWD			—	—	0.33	
接触熱抵抗 Thermal Resistance	IGBT	$R_{th(c-f)}$	Case to heatsink Per 1 Arm Paste=1W/(m <sup>2</sup> °C)	—	0.05	—	
	FWD			—	0.10	—	

特性 : CHARACTERISTICS CURVES



特性 : CHARACTERISTICS CURVES

