

SPECIFICATION

Device Name : I G B T M o d u l e

Type Name : 6 M B I 7 5 S - 1 4 0

Spec. No. : M S 5 F 4 7 2 4

Fuji Electric Co., Ltd.
Matsumoto Factory

	DATE	NAME	APPROVED	Fuji Electric Co., Ltd.		
DRAWN	Nov. -10 -'99	Y. Hologuchi	<i>T. Nishizaka</i>	DWG. NO.	M S 5 F 4 7 2 4	1 / 8
CHECKED	Nov. -10 -'99	S. Matsuura				

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Revised Records

Date	Classi- fication	Ind.	Content	Applied date	Drawn	Checked	Approved
Nov. -16- 49	enactment	—	—————	Issued date	—	S. Mitsu	T. Miyasaka

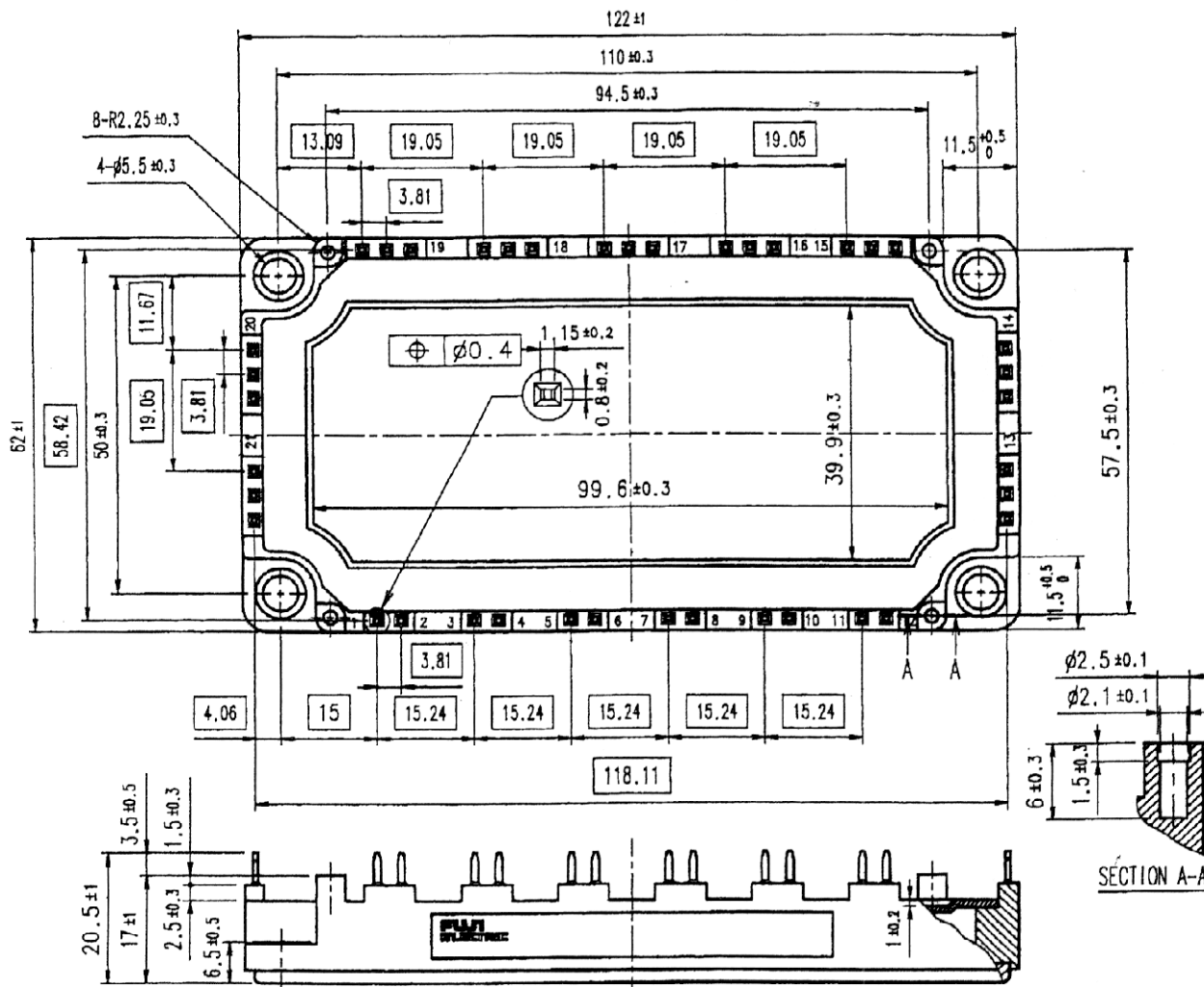
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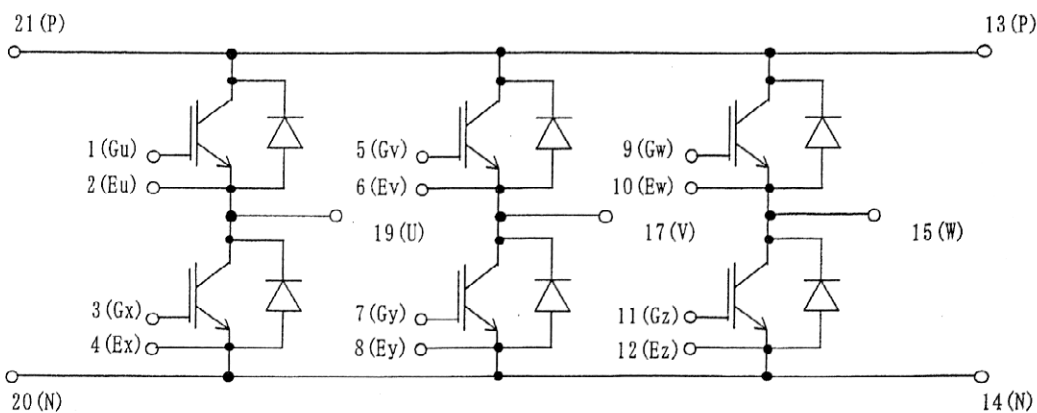
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1. Outline Drawing (Unit : mm)



2. Equivalent circuit



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3. Absolute Maximum Ratings (at Tc= 25°C unless otherwise specified)

Items	Symbols	Conditions	Maximum Ratings		Units
Collector-Emitter voltage	V _{CES}		1400		V
Gate-Emitter voltage	V _{GES}		±20		V
Collector current	I _c	Continuous	Tc=25°C	100	A
			Tc=75°C	75	
	I _c pulse	1ms	Tc=25°C	200	
			Tc=75°C	150	
	-I _c			75	
-I _c pulse	1ms		150		
Collector Power Dissipation	P _c	1 device	520		W
Junction temperature	T _j		150		°C
Storage temperature	T _{stg}		-40~ +125		°C
Isolation voltage ^(*)	Viso	AC : 1min.	2500		V
Mounting Screw Torque ^(*)			3.5		N·m

(*1) All terminals should be connected together when isolation test will be done.

(*2) Recommendable Value : 2.5~3.5 N·m (M5)

4. Electrical characteristics (at Tj= 25°C unless otherwise specified)

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	Max.	
Zero gate voltage Collector current	IC _{ES}	V _{GE} = 0 V, V _{CES} = 1400 V			1.0	mA
Gate-Emitter leakage current	IG _{ES}	V _{CES} = 0 V, V _{GE} = ±20 V			200	nA
Gate-Emitter threshold voltage	V _{GE(th)}	V _{CES} = 20 V, I _c = 75 mA	5.5	7.2	8.5	V
Collector-Emitter saturation voltage	V _{CES(sat)}	V _{GE} = 15 V, T _j = 25 °C		2.4	2.7	V
		I _c = 75 A, T _j = 125 °C		3.0		
Input capacitance	C _{ies}	V _{GE} = 0 V		9000		pF
Output capacitance	C _{oes}	V _{CES} = 10 V		1875		
Reverse transfer capacitance	C _{res}	f = 1 MHz		1650		
Turn-on time	t _{on}	V _{CC} = 800 V		0.35	1.2	μs
	t _r	I _c = 75 A		0.25	0.6	
	t _{r(i)}	V _{GE} = ±15 V		0.1		
Turn-off time	t _{off}	R _G = 16 Ω		0.45	1.0	μs
	t _f			0.08	0.3	
Forward on voltage	V _F	I _F = 75 A, T _j = 25 °C		2.6	3.4	V
		T _j = 125 °C		2.2		
Reverse recovery time	t _{rr}	I _F = 75 A			0.35	μs

5. Thermal resistance characteristics

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	Max.	
Thermal resistance (1 device)	R _{th(j-c)}	IGBT			0.24	°C/W
		FWD			0.50	
Contact Thermal resistance	R _{th(c-f)}	with Thermal Compound ^(*)		0.05		

* This is the value which is defined mounting on the additional cooling fin with thermal compound.

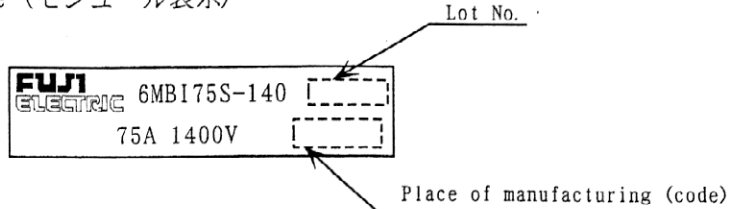
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6. Indication on module (モジュール表示)



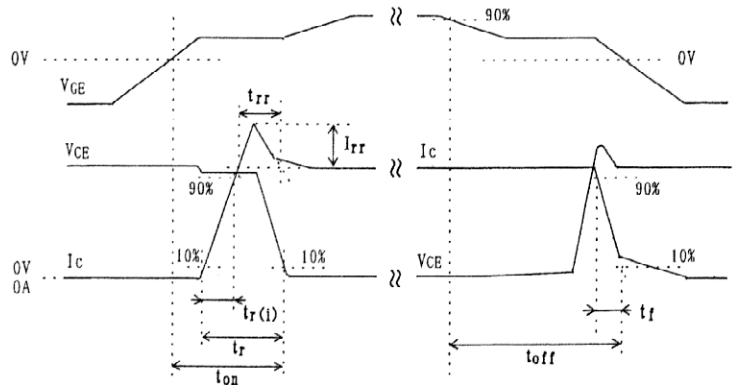
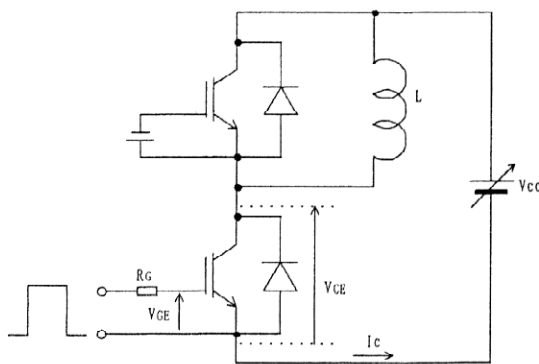
7. Applicable category (適用範囲)

This specification is applied to IGBT Module named 6MBI75S-140 .
 本納入仕様書は IGBTモジュール 6MBI75S-140 に適用する。

8. Storage and transportation notes (保管・運搬上の注意事項)

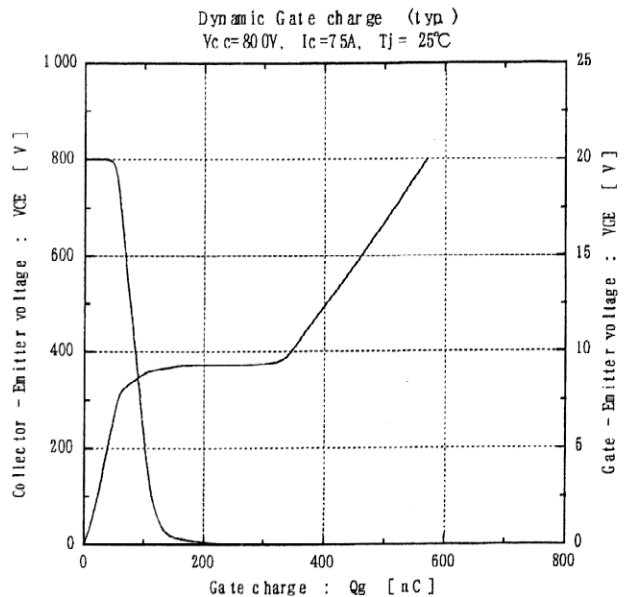
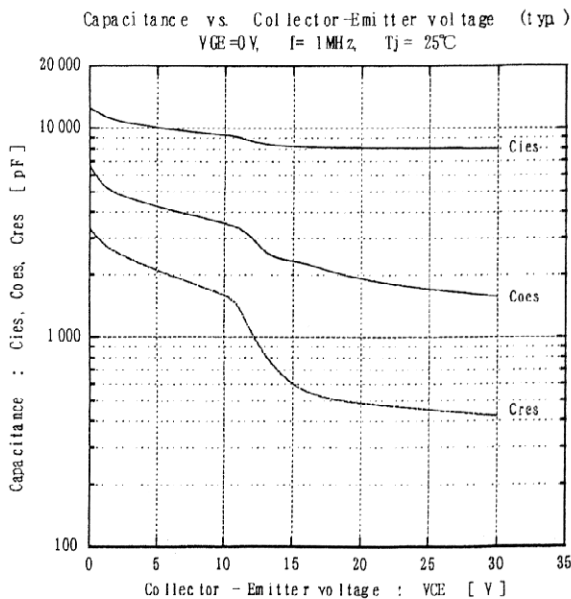
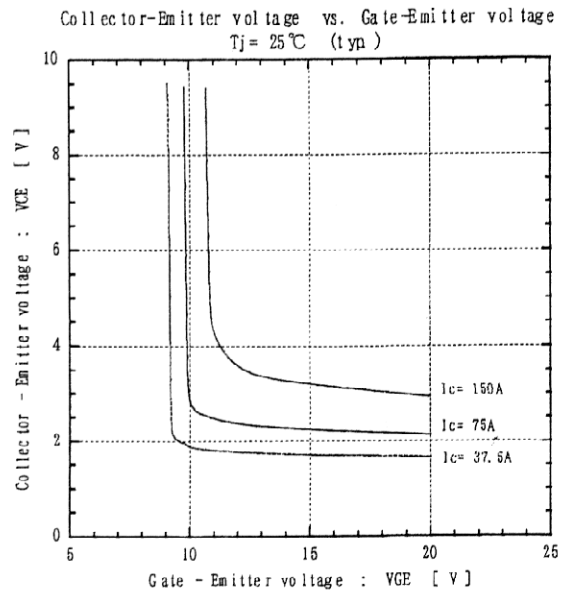
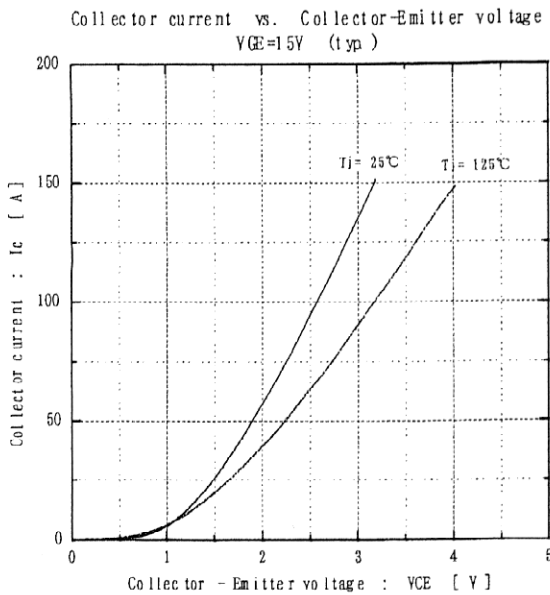
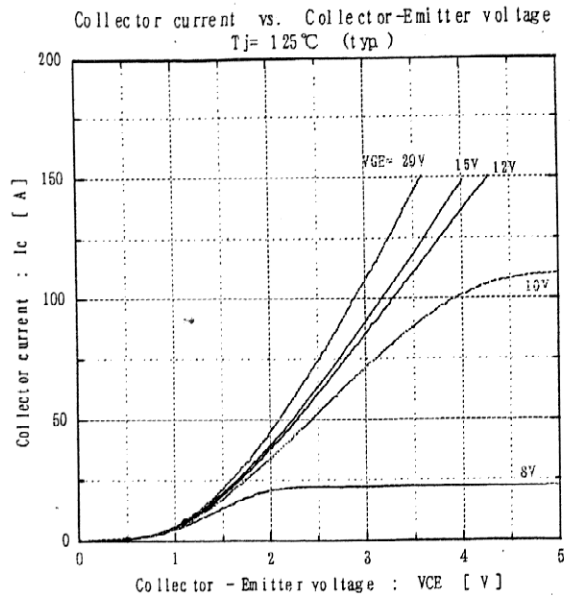
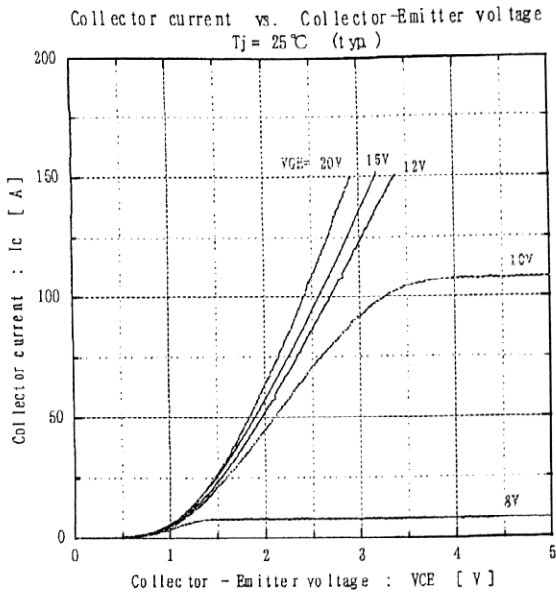
- The module should be stored at a standard temperature of 5 to 35°C and humidity of 45 to 75% .
 常温・常湿保存が望ましい。(5~35°C, 45~75%)
- Store modules in a place with few temperature changes in order to avoid condensation on the module surface.
 急激な温度変化のなきこと。(モジュール表面が結露しないこと)
- Avoid exposure to corrosive gases and dust.
 腐蝕性ガスの発生場所, 塵埃の多い場所は避けること。
- Avoid excessive external force on the module.
 製品に荷重がかからないように 十分注意すること。
- Store modules with unprocessed terminals.
 モジュールの端子は未加工の状態 で保管すること。
- Do not drop or otherwise shock the modules when transporting.
 製品の運搬時に衝撃を与えたり, 落下させたりしないこと。

9. Definitions of switching time (スイッチング時間の定義)



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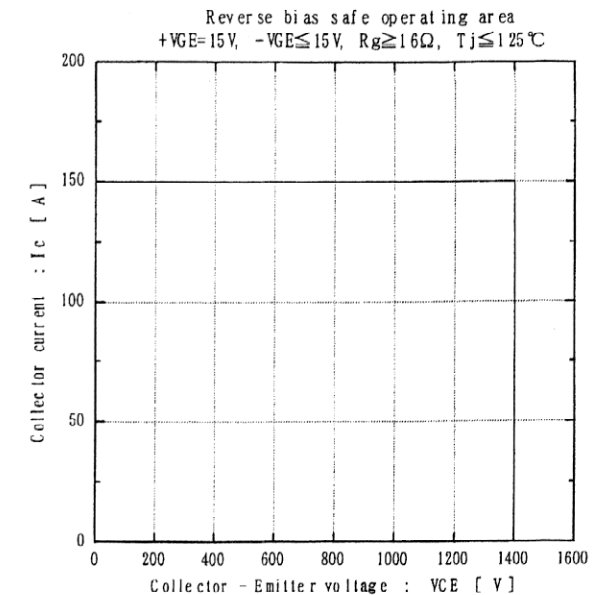
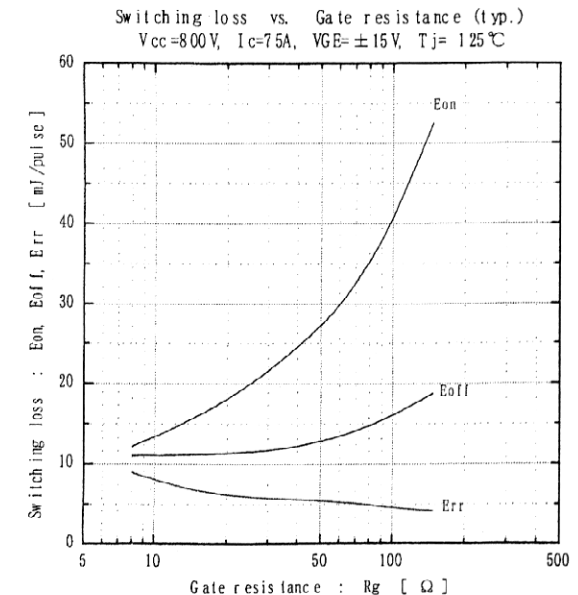
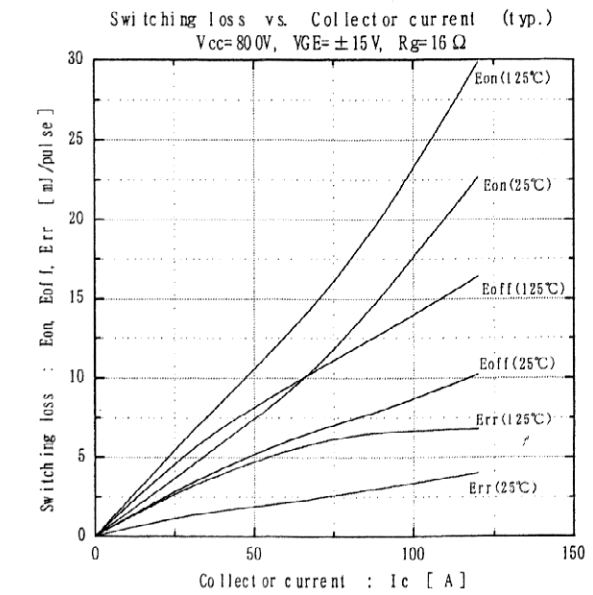
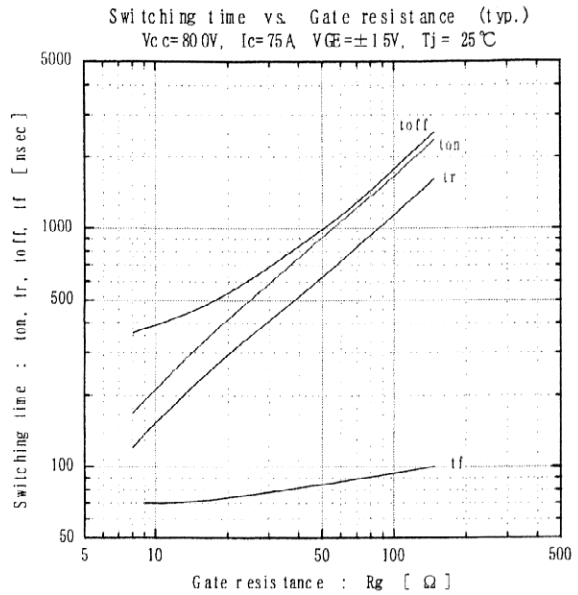
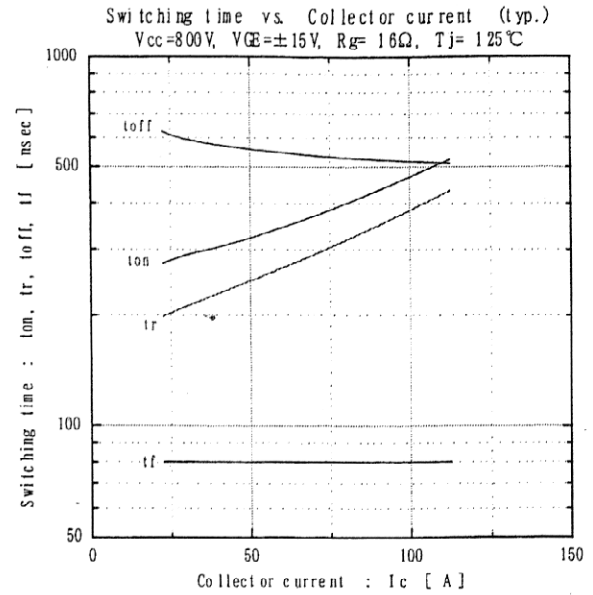
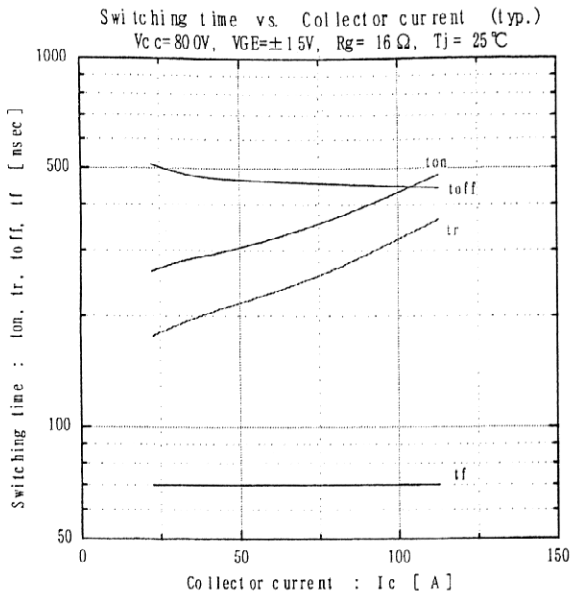
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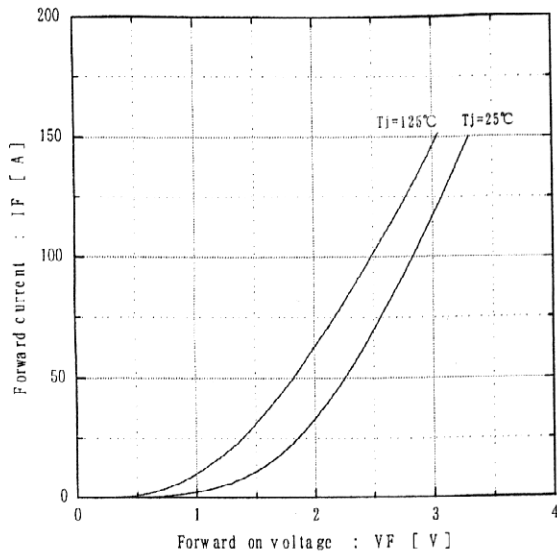
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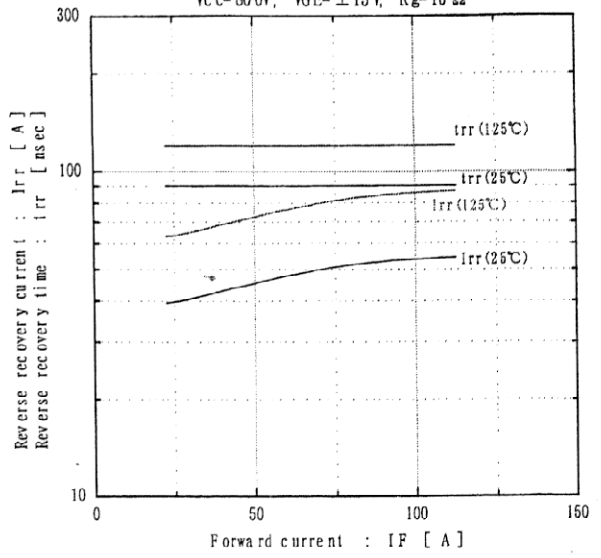
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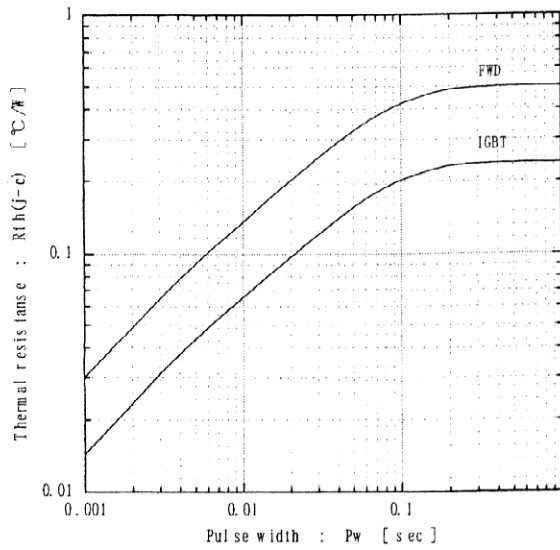
Forward current vs. Forward on voltage (typ.)



Reverse recovery characteristics (typ.)
Vc=80.0V, VGE=±15V, Rg=16Ω



Transient thermal resistance



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