

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	T. Holayoshi	T. Miyasaka	DWG. NO.	MS 5 F 4 7 2 4 1 / 8
CHECKED	Nov. - 10 - '99	S. Matsuura			

H04-004-07

Revised Records

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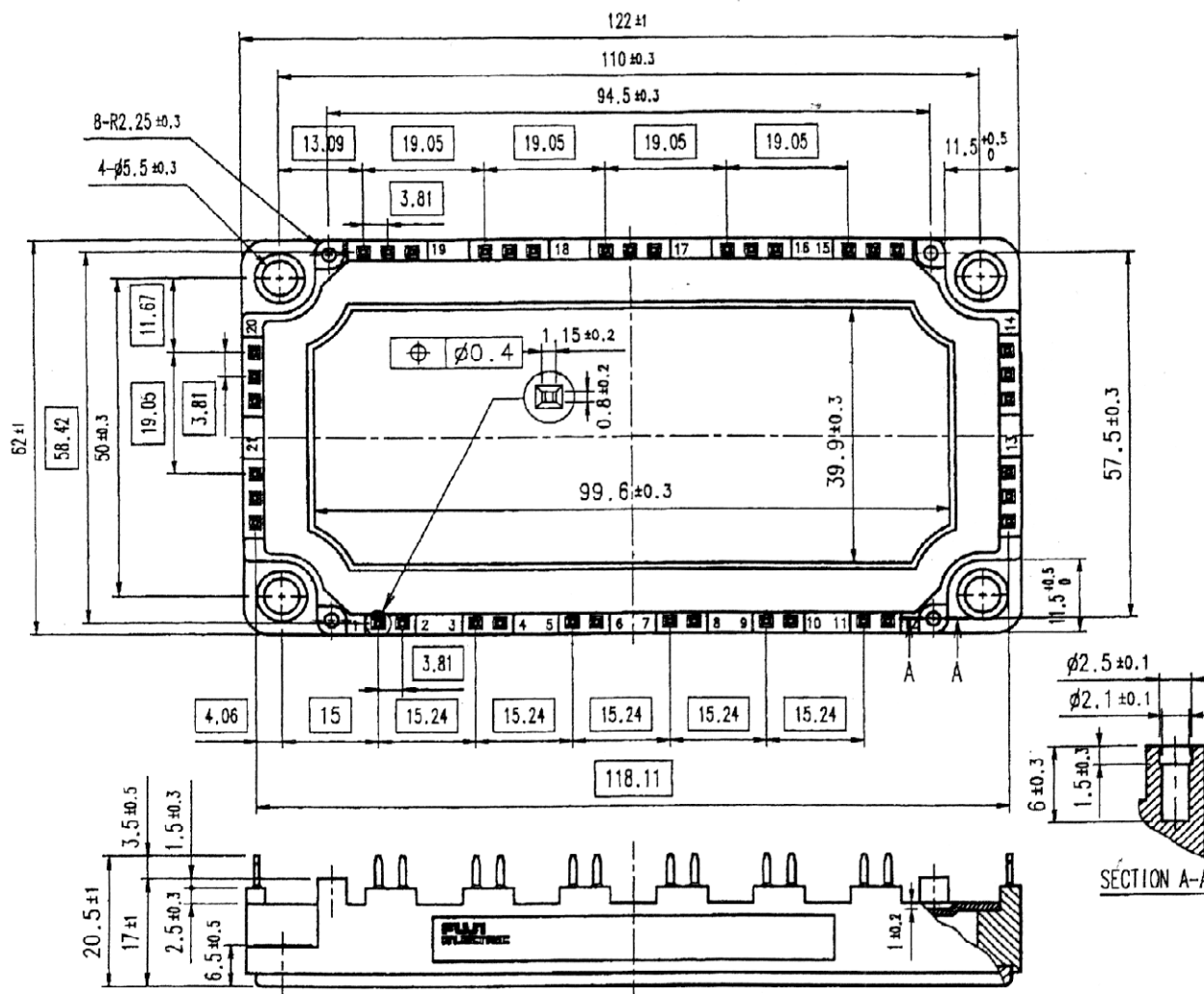
MS 5 F 4 7 2 4

$$\frac{2}{8}$$

H04-004-06

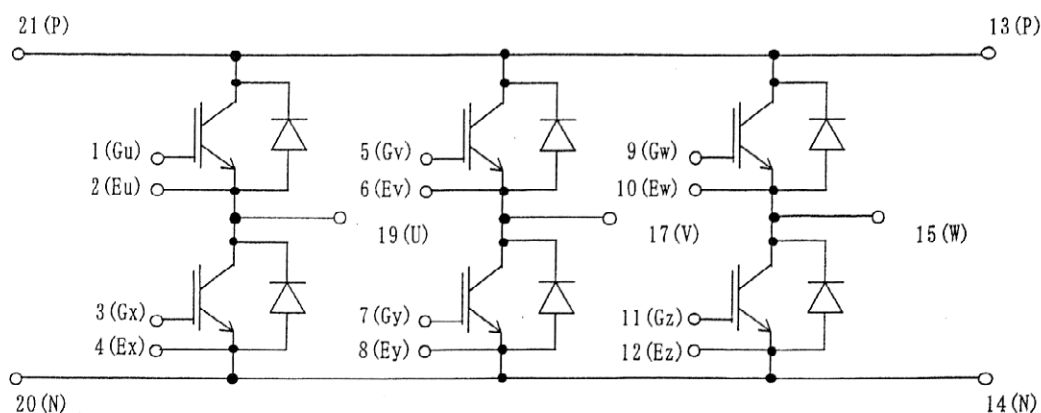
6MBI75S-140

1. Outline Drawing (Unit : mm)



□ shows theoretical dimension.

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	T _c =25℃	100	A
			T _c =75℃	75	
	I _c pulse	1ms	T _c =25℃	200	
			T _c =75℃	150	
	-I _c			75	
	-I _c pulse	1ms	150		
Collector Power Dissipation	P _c	1 device		520	W
Junction temperature	T _j			150	℃
Storage temperature	T _{stg}			-40~ +125	℃
Isolation voltage ⁽⁺¹⁾	V _{iso}	AC : 1min.		2500	V
Mounting Screw Torque ⁽⁺²⁾				3.5	N · m

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

(*) 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	ICES	VGE = 0 V, VCE = 1400 V			1.0	mA
Gate-Emitter leakage current	IGES	VCE = 0 V, VGE = ±20 V			200	nA
Gate-Emitter threshold voltage	VGE(th)	VCE = 20 V, Ic = 75 mA	5.5	7.2	8.5	V
Collector-Emitter saturation voltage	VCE(sat)	VGE = 15 V, Tj = 25 °C		2.4	2.7	V
		Ic = 75 A, Tj = 125 °C		3.0		
Input capacitance	Cies	VGE = 0 V		9000		pF
Output capacitance	Coes	VCE = 10 V		1875		
Reverse transfer capacitance	Cres	f = 1 MHz		1650		
Turn-on time	ton	Vcc = 800 V		0.35	1.2	μs
	tr	Ic = 75 A		0.25	0.6	
	tr(i)	VGE = ±15 V		0.1		
Turn-off time	toff	RG = 16 Ω		0.45	1.0	
	if			0.08	0.3	
Forward on voltage	VF	IF = 75 A, Tj = 25 °C		2.6	3.4	V
		Tj = 125 °C		2.2		
Reverse recovery time	trr	IF = 75 A			0.35	μs

5. Thermal resistance characteristics

Items	Symbols	Conditions	Characteristics			Units
			min.	typ.	Max.	
Thermal resistance (1 device)	Rth(j-c)	IGBT			0.24	°C/W
		FWD			0.50	
Contact Thermal resistance	Rth(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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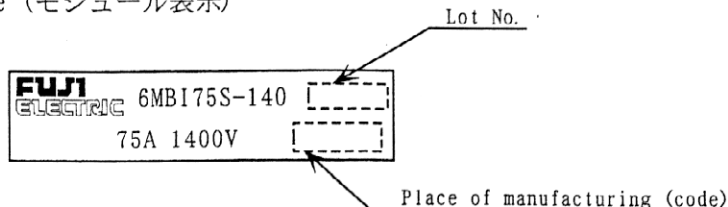
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6. Indication on module (モジュール表示)



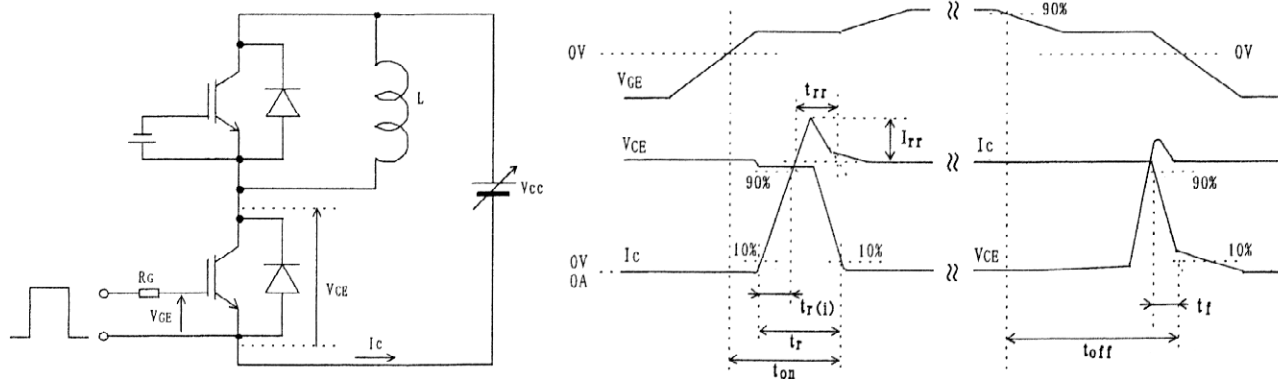
7. Applicable category (適用範囲)

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。

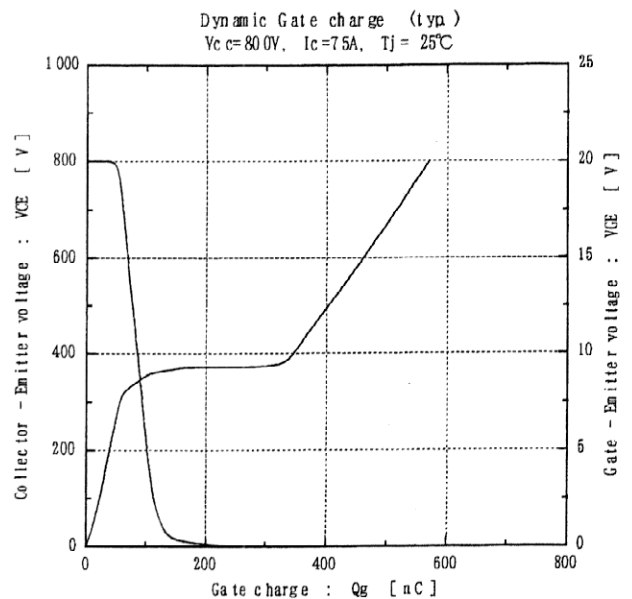
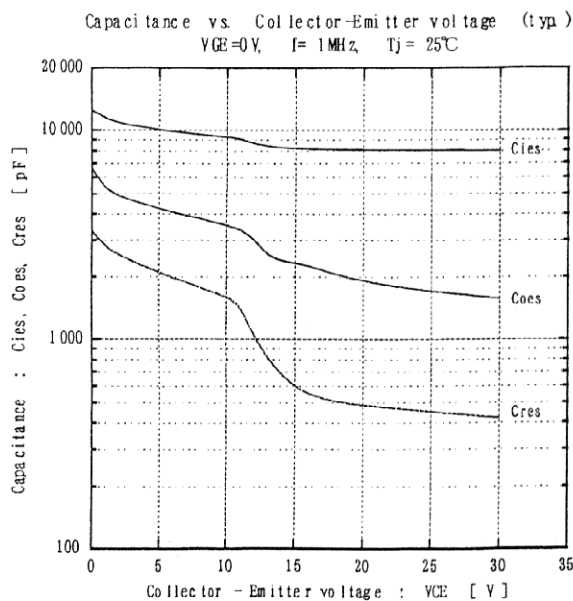
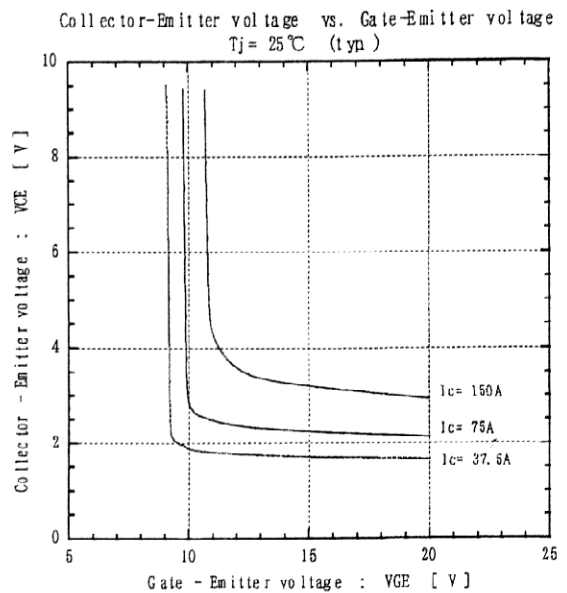
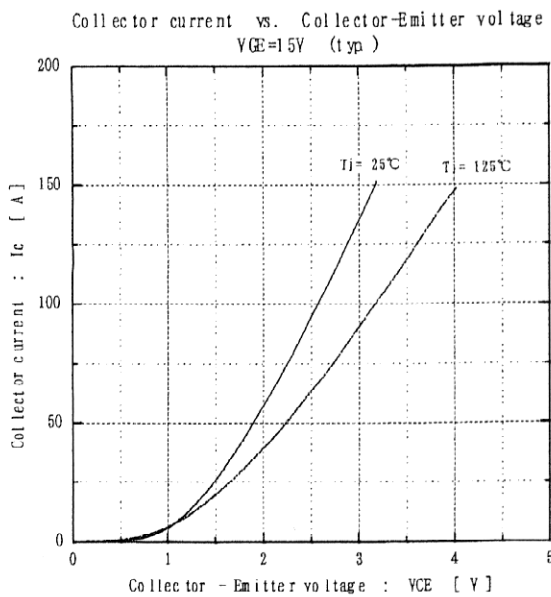
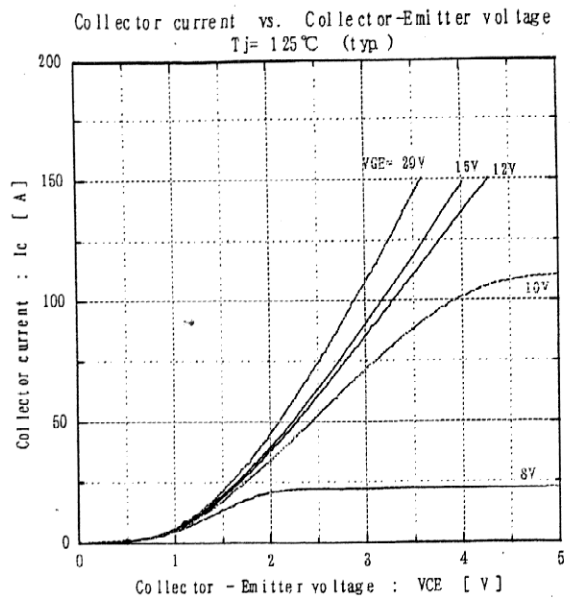
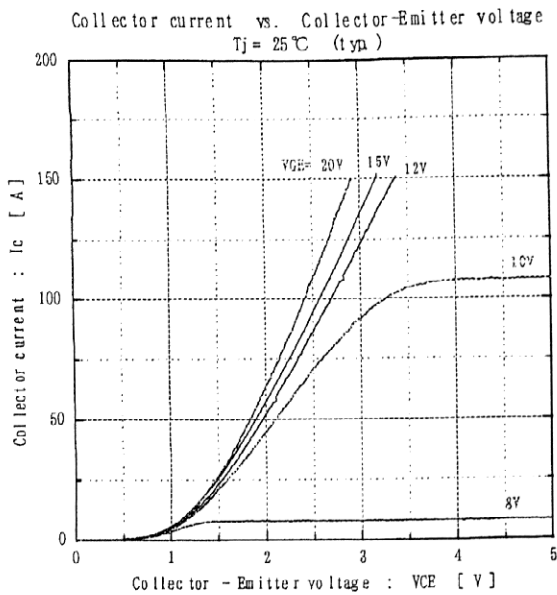
8. Storage and transportation notes (保管・運搬上の注意事項)

- 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。

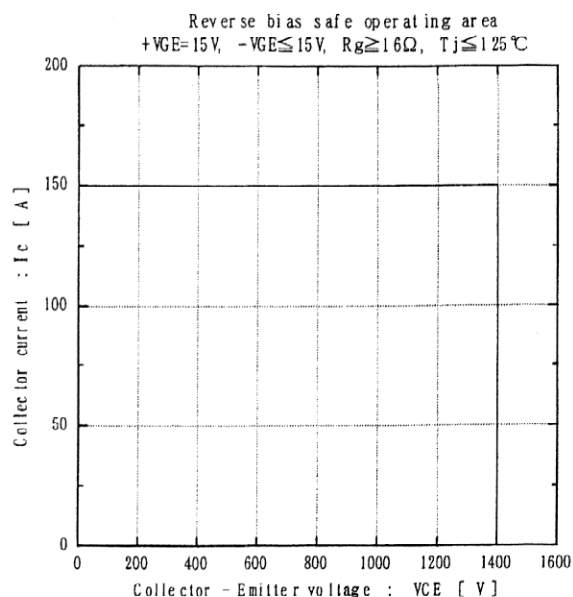
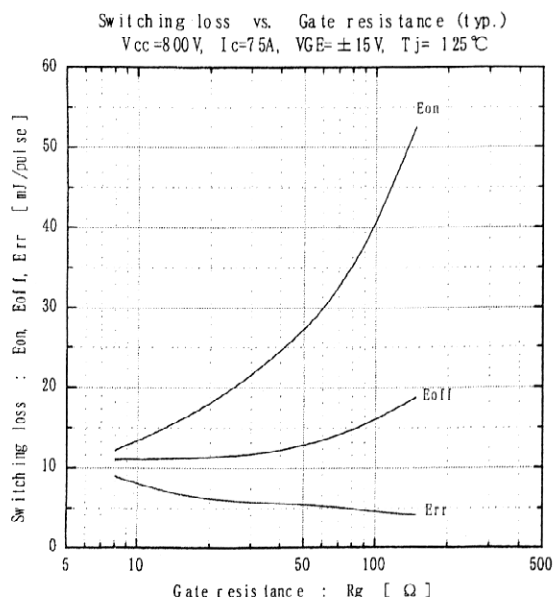
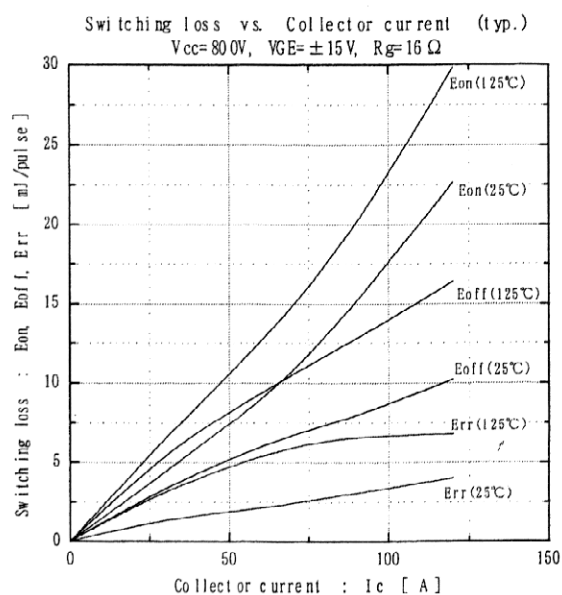
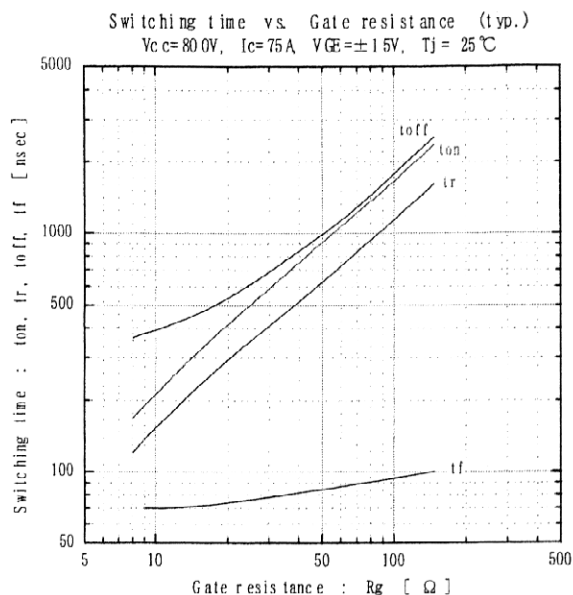
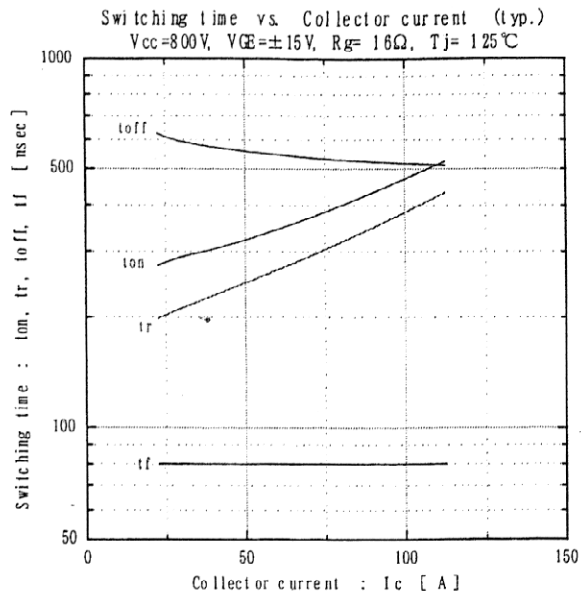
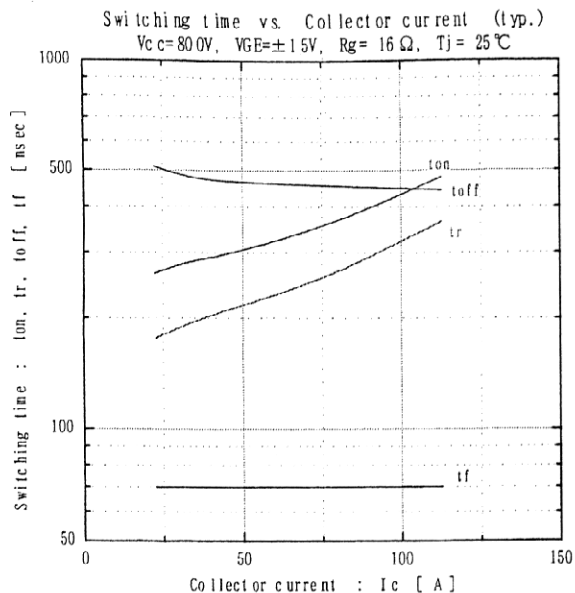
9. Definitions of switching time (スイッチング時間の定義)



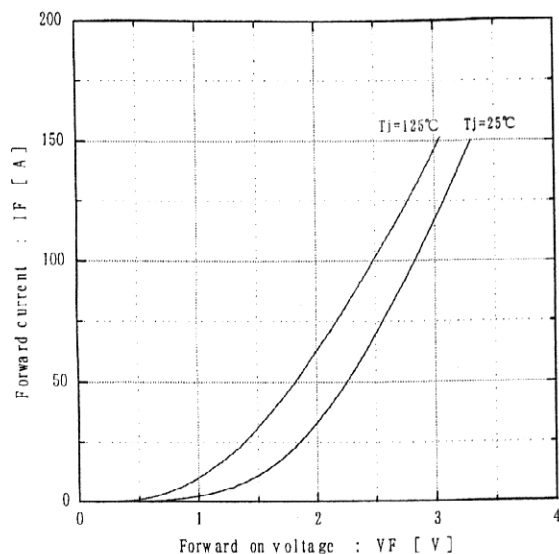
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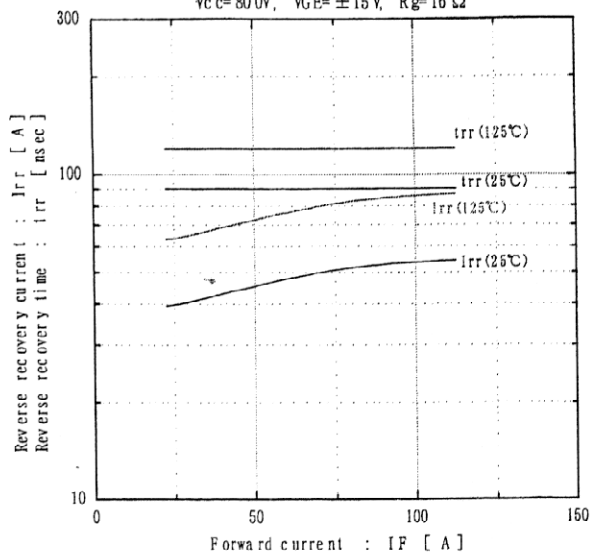


Forward current vs. Forward on voltage (typ.)



Reverse recovery characteristics (typ.)

$V_{CE} = 80\text{ V}$, $V_{GE} = \pm 15\text{ V}$, $R_g = 16\ \Omega$



Transient thermal resistance

