

SPECIFICATION

Device Name : IGBT Module

Type Name : 6MBI75S-120-01

Spec. No. : MS5F 4847

Date : Jun. - 02 - 2000

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Matsumoto Factory

	DATE	NAME	APPROVED	Fuji Electric Co., Ltd.		
DRAWN	Jun. - 2 - '00	T. Katsuyoshi	T. Katsuyoshi	DWG. NO.	MS5F 4847	1 / 8
CHECKED	June - 2 - 00	S. Nitta				

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Revised Records

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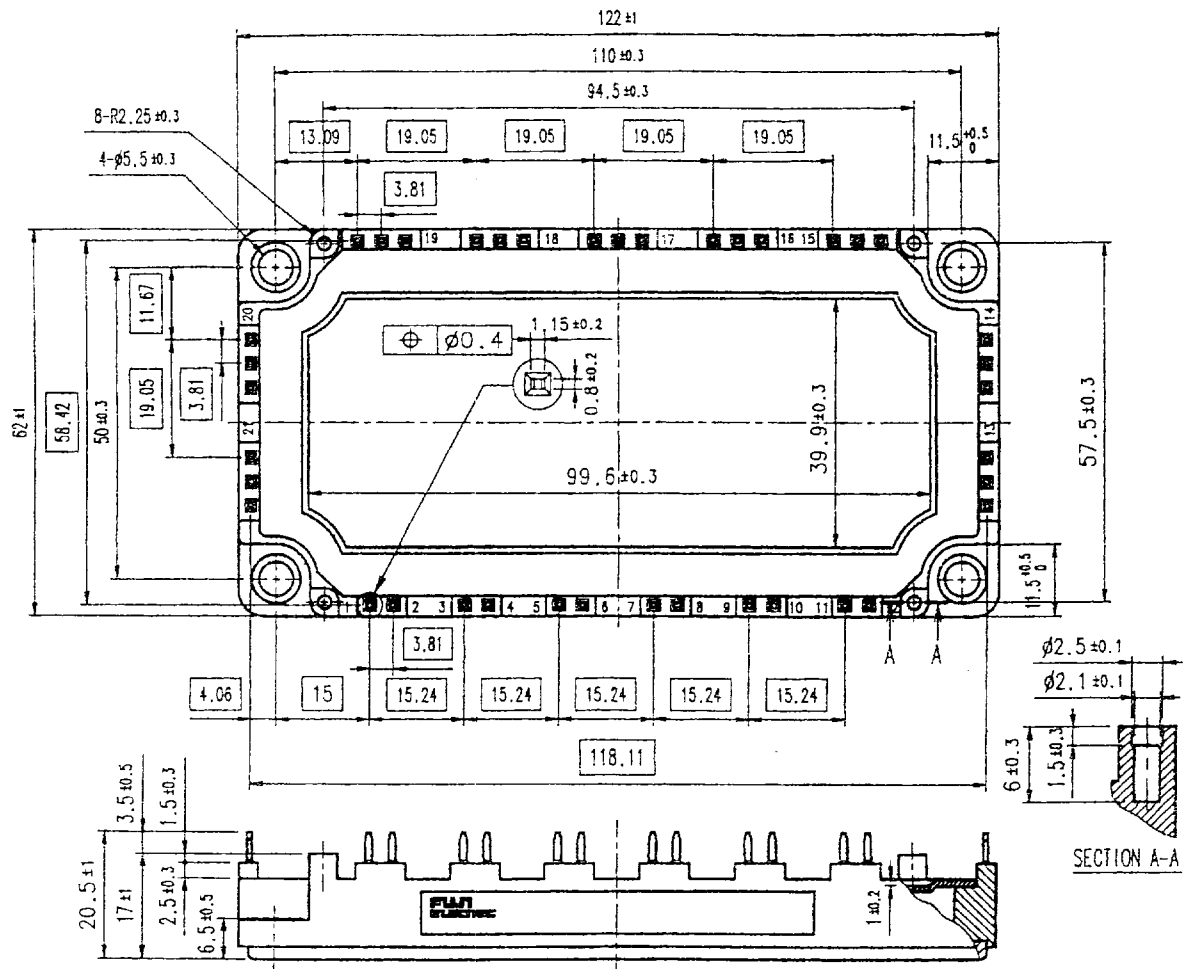
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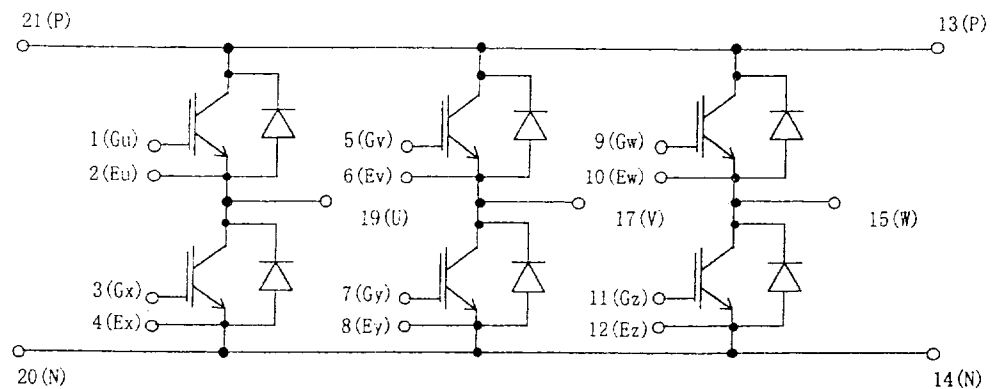
1. Outline Drawing (Unit : mm)

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□ shows theoretical dimension.

2. Equivalent circuit



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

Items	Symbols	Conditions		Maximum Ratings	Units
Collector-Emitter voltage	VCES			120	V
Gate-Emitter voltage	VGES			+20	V
Collector current	Ic	Continuous	Tc=25C	100	A
			Tc=80C	75	
	Ic pulse	1ms	Tc=25C	200	
			Tc=80C	150	
	-Ic			75	
	-Ic pulse	1ms			150
Collector Power Dissipation	Pc	1 device		520	W
Junction temperature	Tj			150	C
Storage temperature	Tstg			-40~ +125	C
Isolation voltage ^(*)	Viso	AC : 1min.		2500	V
Mounting Screw Torque ^(*)				3.5	Nm

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

(*)2 Recommendable Value : 2.5~3.5 Nm (M5)

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

Items	Symbols	Conditions		Characteristics			Units
				min.	typ.	Max.	
Zero gate voltage Collector current	ICES	VGE	0 V, VCE 1200 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		2.3	2.6	V
		Ic = 75 A	Tj = 125 C		2.8		
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 =	600 V		0.35	1.2	us
	tr	Ic =	75 A		0.25	0.6	
	tr _(i)	VGE	+15 V		0.1		
Turn-off time	toff	RG =	16 ohm		0.45	1.0	
	tf				0.08	0.3	
Forward on voltage	VF	IF = 75 A	Tj = 25 C		2.5	3.3	V
			Tj = 125 C		2.0		
Reverse recovery time	trr	IF = 75 A				0.35	us

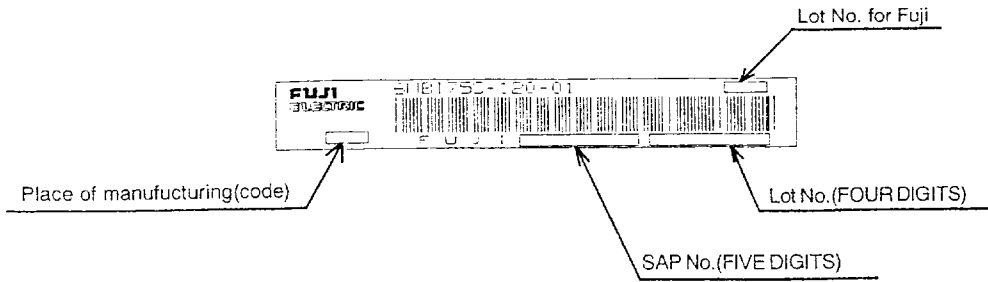
5. Thermal resistance characteristics

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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6. Indication on module



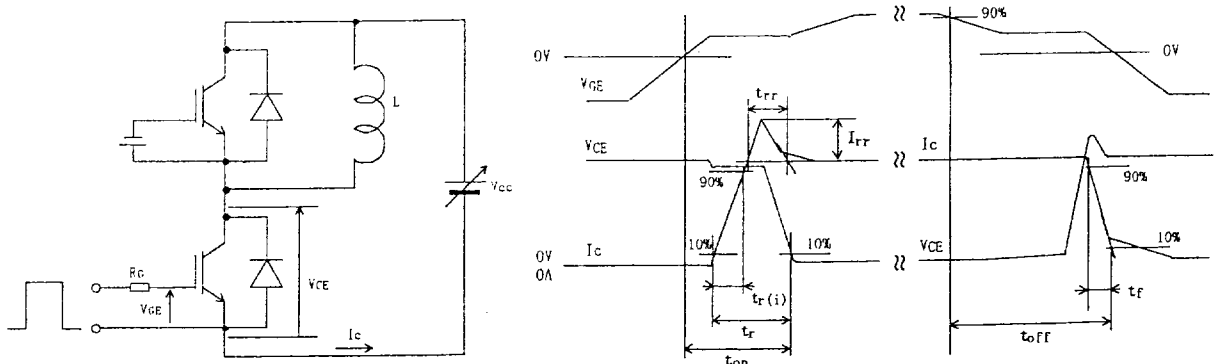
7. Applicable category

This specification is applied to IGBT Module named 6MBI75S-120-01.

8. Storage and transportation notes

- The module should be stored at a standard temperature of 5 to 35°C and humidity of 45 to 75% .
- Store modules in a place with few temperature changes in order to avoid condensation on the module surface.
- Avoid exposure to corrosive gases and dust.
- Avoid excessive external force on the module.
- Store modules with unprocessed terminals.
- Do not drop or otherwise shock the modules when transporting.
- Please connect adequate fuse or protector of circuit between three-phase line and this product to prevent the equipment from causing secondary destruction.

9. Definitions of switching time



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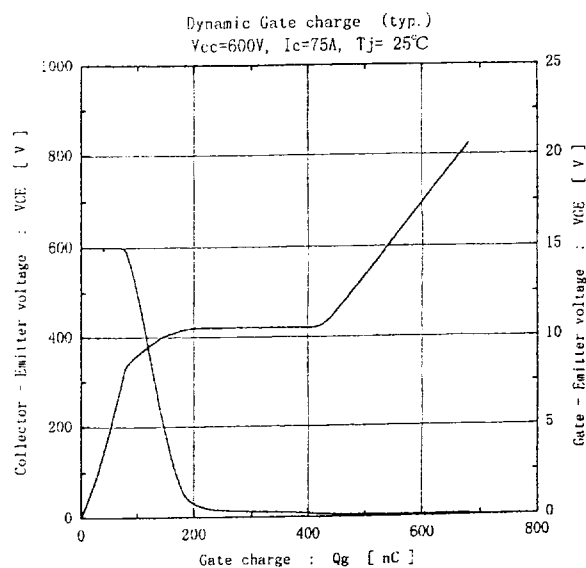
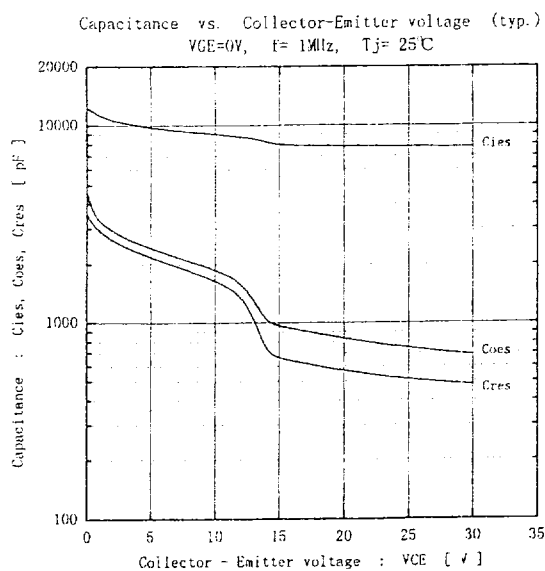
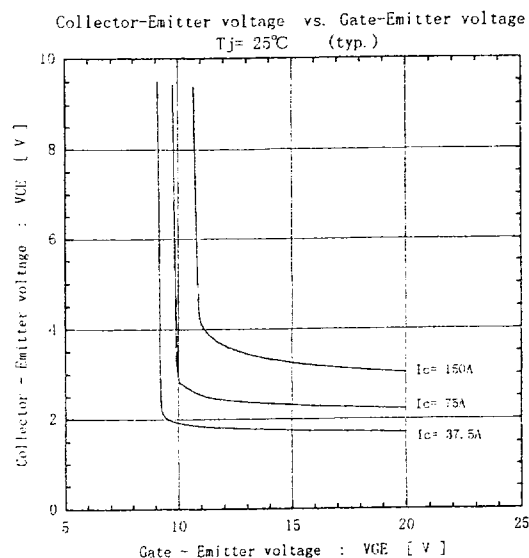
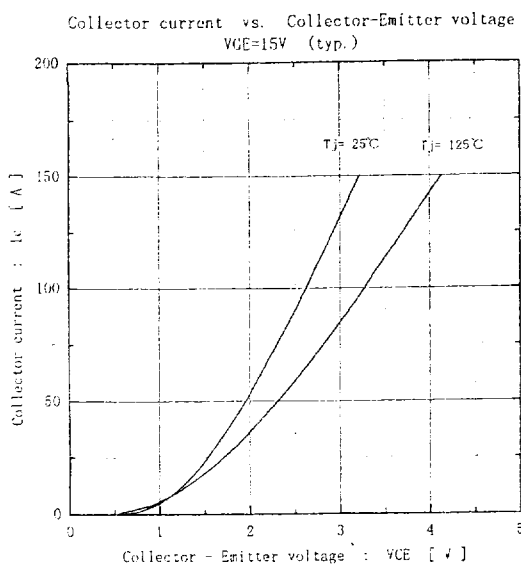
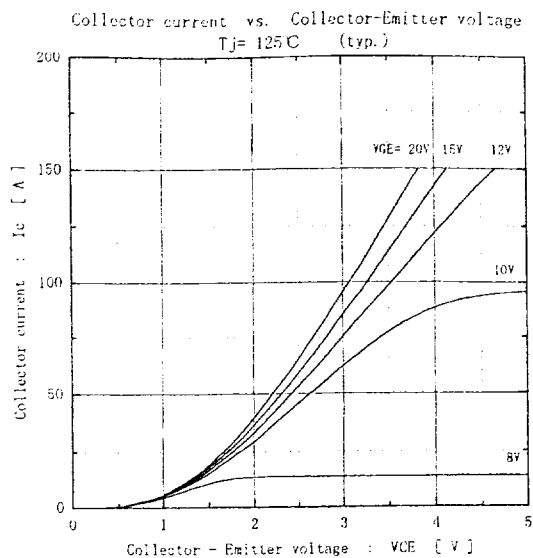
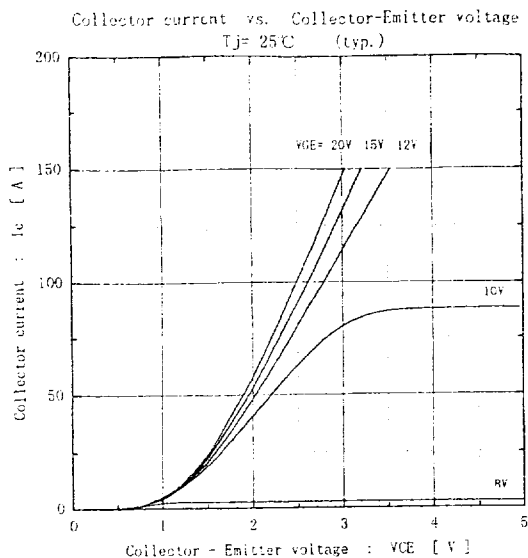
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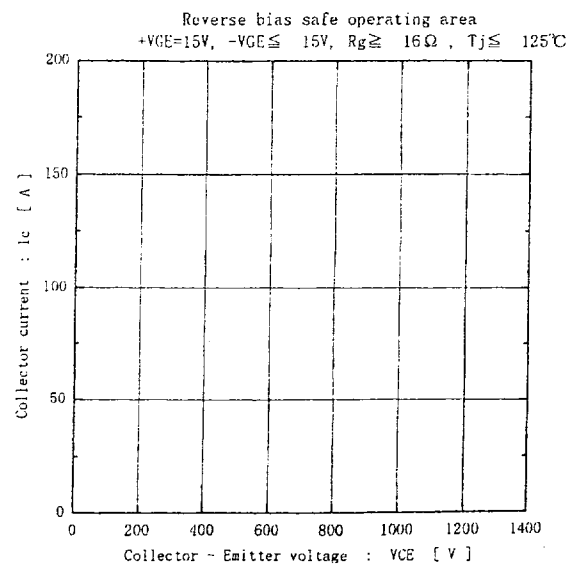
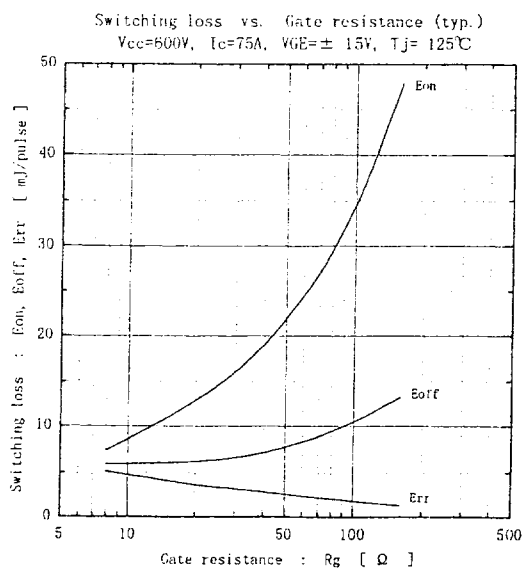
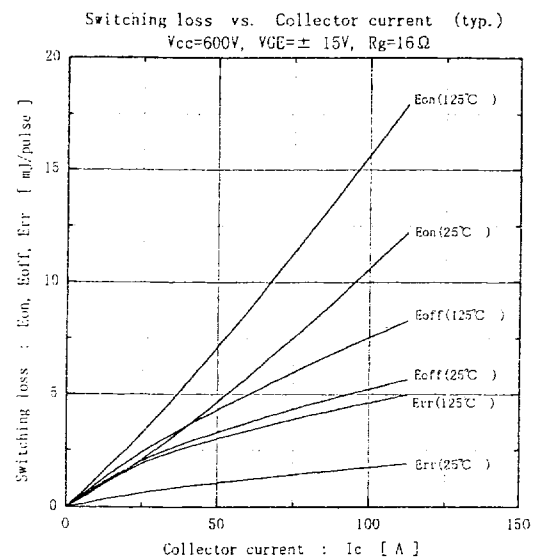
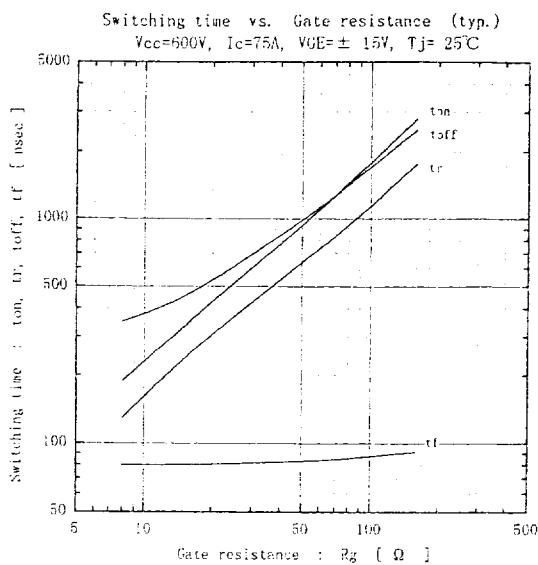
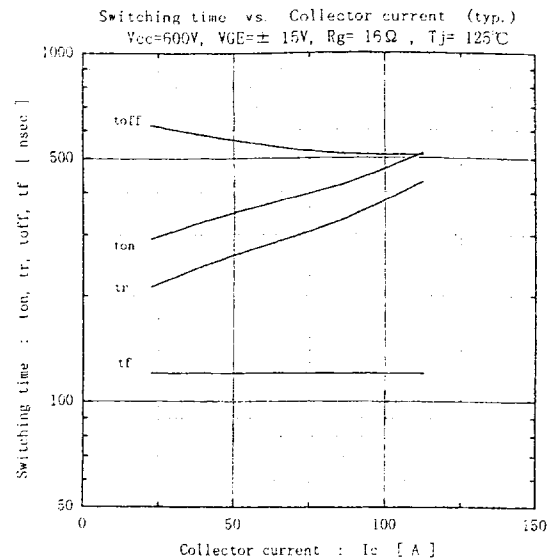
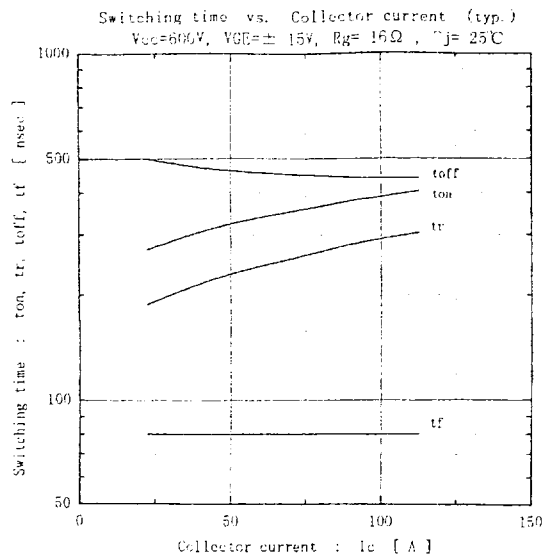
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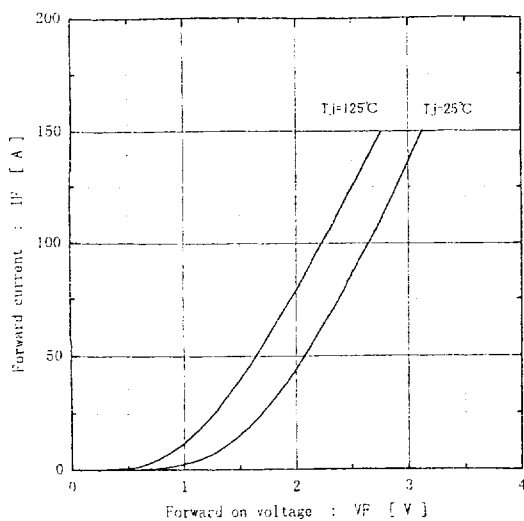
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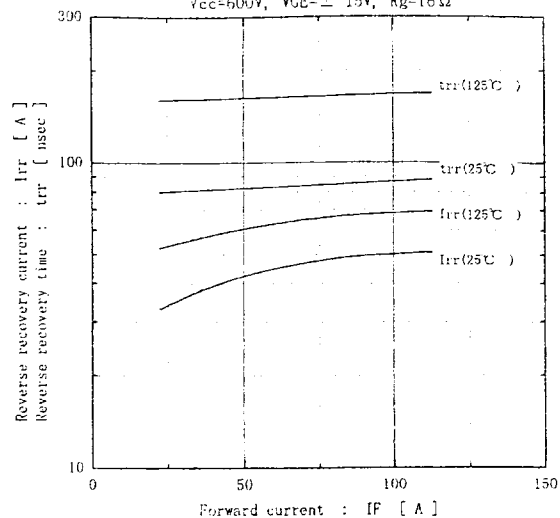
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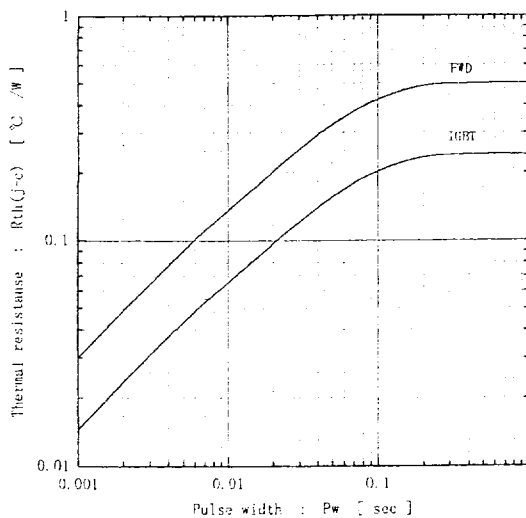
Forward current vs. Forward on voltage (typ.)



Reverse recovery characteristics (typ.)
 $V_{CC} = 600\text{V}$, $V_{GE} = \pm 15\text{V}$, $R_g = 16\Omega$



Transient thermal resistance



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