

### Diode Module with Brake

Diode:1600V / 100A, IGBT:1400A/75A

#### ■ Features

- Compact Package
- P.C. Board Mount Module
- Converter Diode Bridge Dynamic Brake Circuit

#### ■ Applications

- Inverter for Motor Drive
- AC and DC Servo Drive Amplifier
- Uninterruptible Power Supply

#### ■ Maximum ratings and characteristics

● Absolute maximum ratings (Tc=25°C unless without specified)

Item	Symbol	Condition	Rating	Unit	
Converter	Repetitive peak reverse voltage	V <sub>RRM</sub>	1600	V	
	Non-repetitive peak reverse voltage	V <sub>RSM</sub>	1760	V	
	Average output current	I <sub>o</sub>	50Hz/60Hz sine wave Tc=110°C	100	A
	One cycle surge current	I <sub>FSM</sub>	From rated load	1000	A
	Peak current	I <sub>t</sub>	From rated load	4000	A
	Operation junction temperature	T <sub>j</sub>		-40 to +125	°C
Brake	Collector-Emitter voltage	V <sub>GES</sub>	1400	V	
	Gate-Emitter voltage	V <sub>GES</sub>	±20	V	
	Collector current	I <sub>c</sub>	DC	Tc=25°C 75	A
				Tc=75°C 50	A
		I <sub>cP</sub>	1ms	Tc=25°C 150 Tc=75°C 100	A
	Collector power dissipation	P <sub>c</sub>	1 device	360	W
	Repetitive peak reverse voltage	V <sub>RRM</sub>		1400	V
	Operation junction temperature	T <sub>j</sub>		+150	°C
	Storage junction temperature	T <sub>sg</sub>	AC : 1 minute	-40 to +125	°C
	Isolation voltage	V <sub>iso</sub>	M5 screw	2500	V
Mounting screw torque			2.0 to 2.5	N·m	

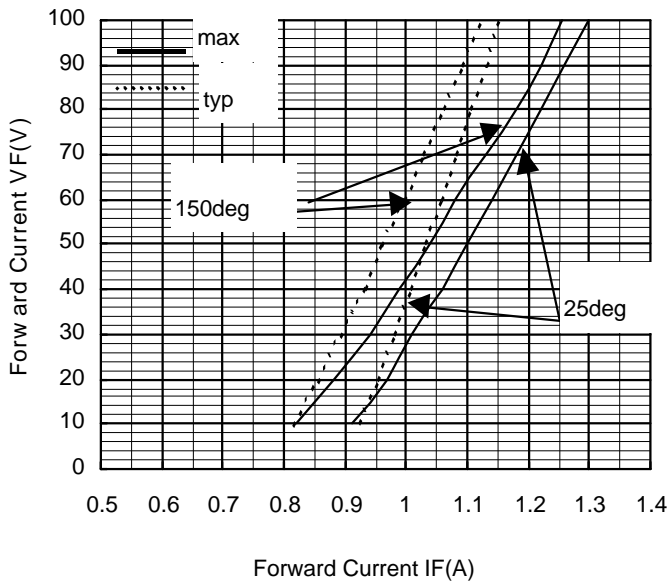
● Electrical characteristics (Tj=25°C unless otherwise specified)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	
Co.	Forward voltage	V <sub>FM</sub>			1.30	V	
	Reverse current	I <sub>RRM</sub>			20	mA	
Brake	Zero gate voltage Collector current	I <sub>CES</sub>			1.0	mA	
	Gate-Emitter leakage current	I <sub>GES</sub>			200	nA	
	Collector-Emitter saturation voltage	V <sub>CE(sat)</sub>	V <sub>GE</sub> =15V. I <sub>c</sub> =50A		2.4	2.8	V
	Turn-on time	ton	V <sub>CC</sub> =800V		0.35	1.2	μs
		tr	I <sub>c</sub> =50A		0.25	0.6	
	Turn-off time	toff	V <sub>GE</sub> =±15V		0.45	1.0	μs
		tf	R <sub>G</sub> =25ohm		0.08	0.3	
Reverse current	I <sub>RRM</sub>				1.0	mA	

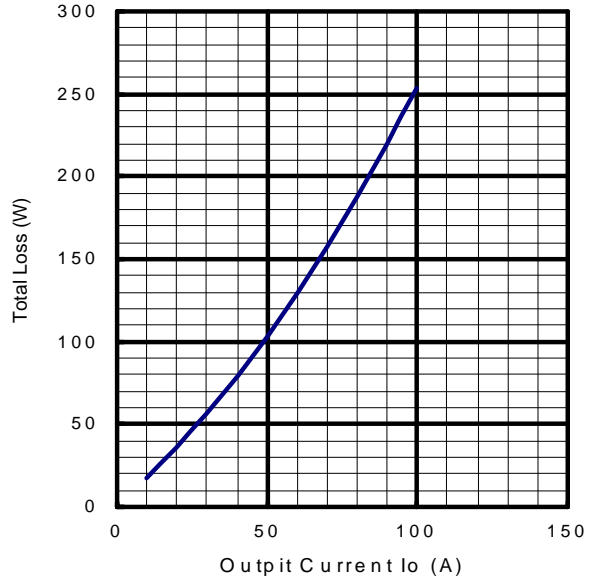
● Thermal characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Thermal resistance	R <sub>th(j-c)</sub>	Converter	Per total loss		0.14	°C/W
			Per each device		0.84	
		Brake IGBT (1 device)		0.55		
Thermal Resistance(Case to fine)	R <sub>th(c-f)</sub>	with thermal compound			0.08	°C/W

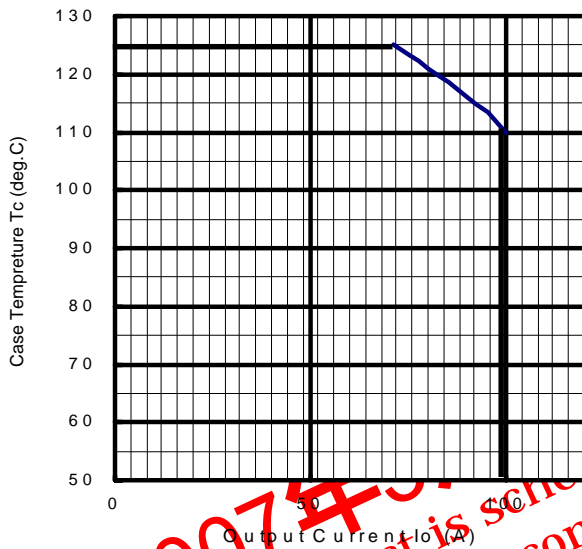
Forward Characteristics



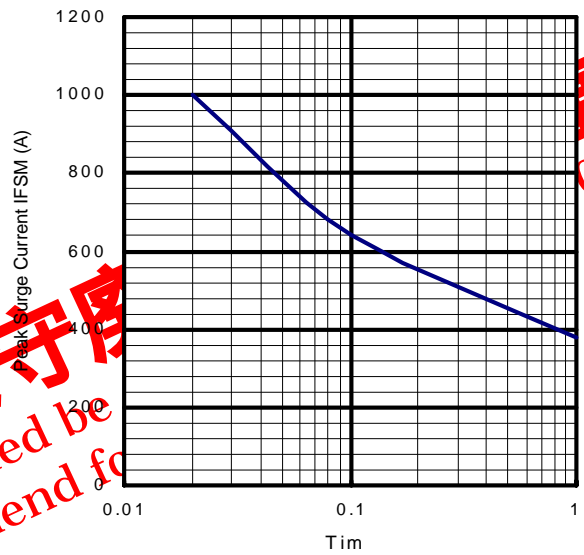
Output Current - Total Loss



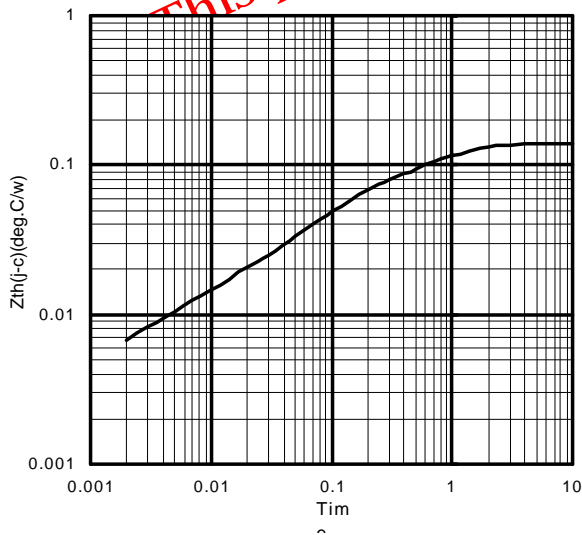
Output Current - Case Temperature



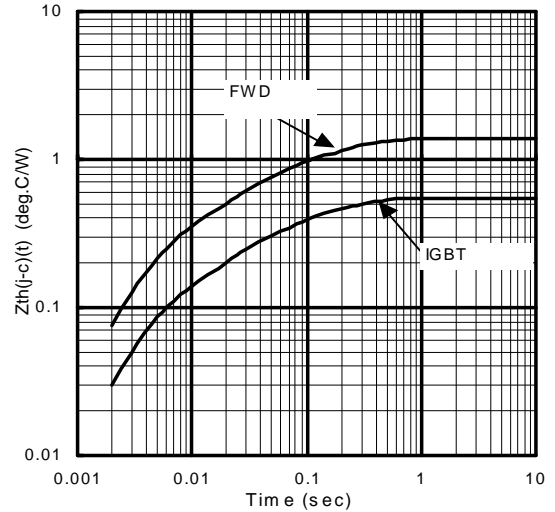
Surge Current



Transient Thermal Impedance

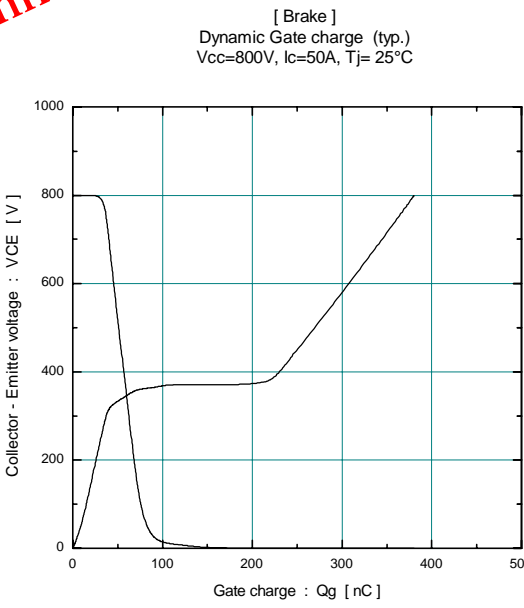
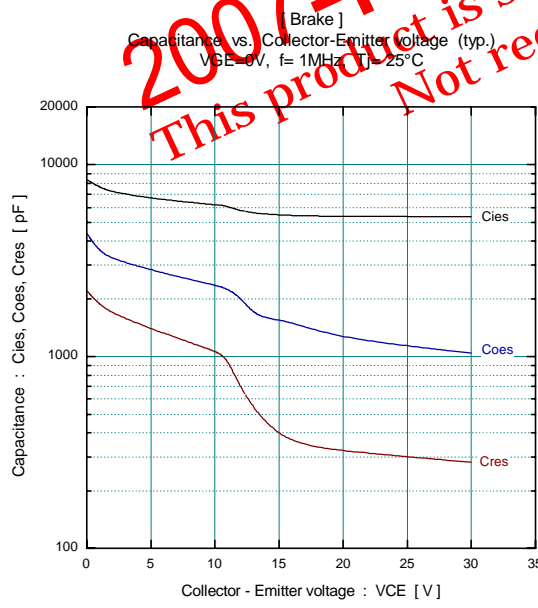
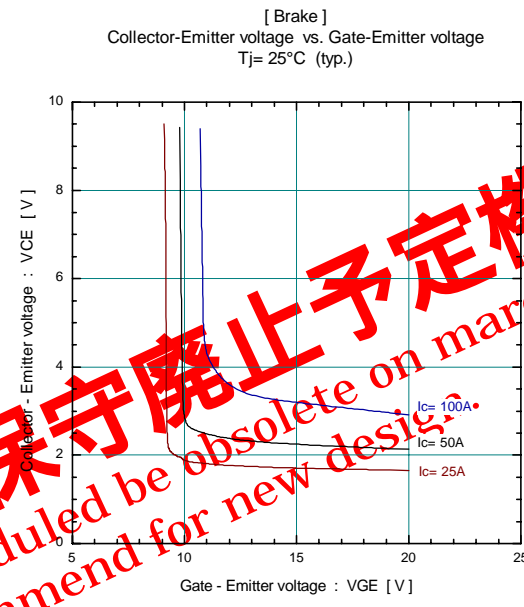
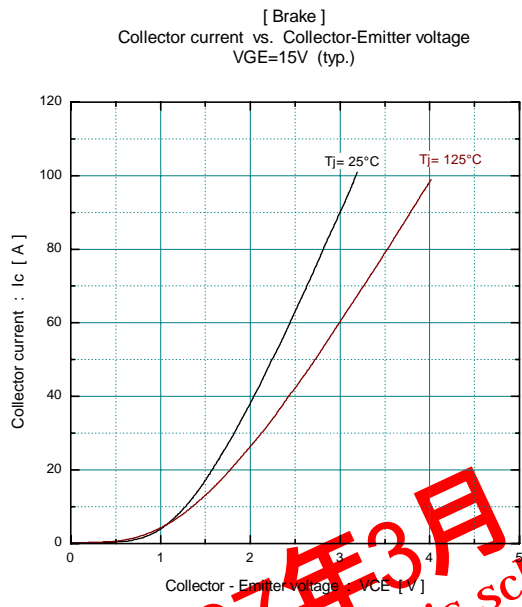
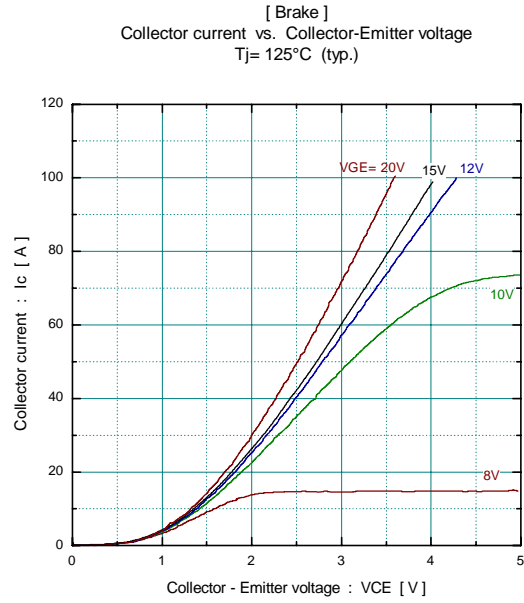
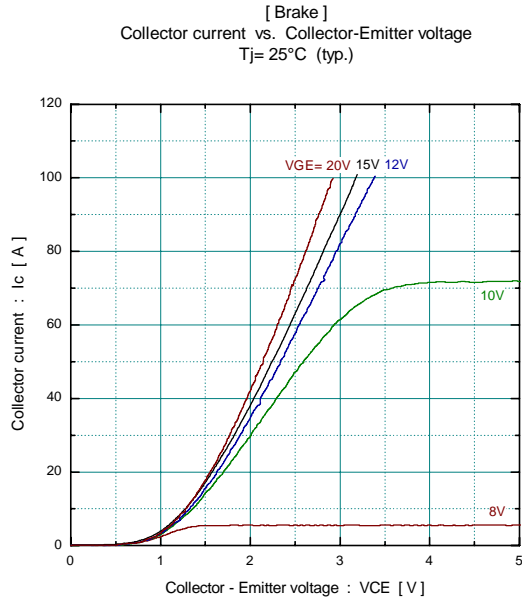


[ Brake ] Transient Thermal Impedance



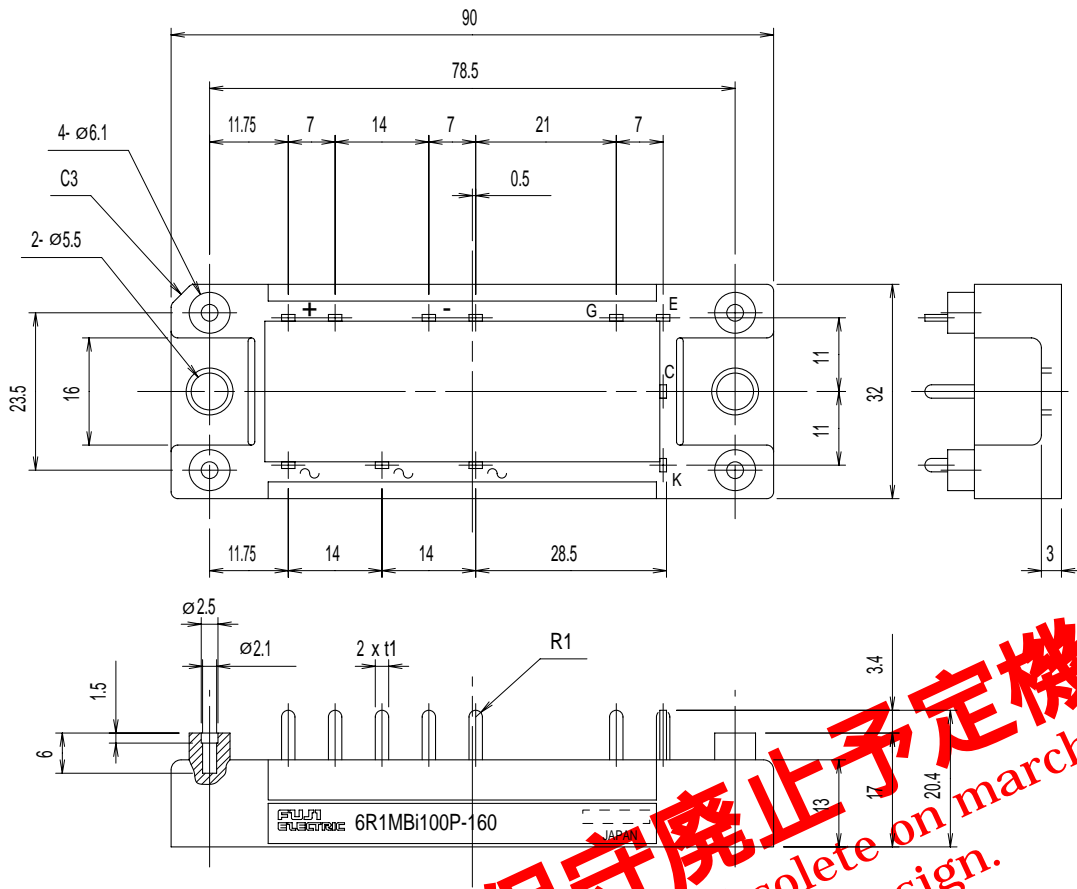
2007年... 保守厚  
This product is scheduled be  
Not recommend for

07.

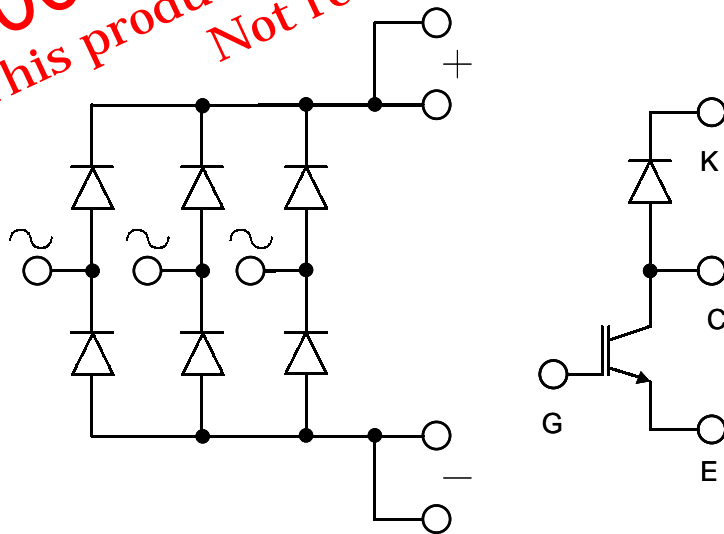


2007年3月 保守廃止予定機種  
 This product is scheduled to be obsolete on march 2007.  
 Not recommend for new design.

■ Outline Drawings, mm



■ Equivalent Circuit Schematic



2007年3月 保守廃止予定機種  
This product is scheduled be obsolete on march 2007.  
Not recommend for new design.