

Diode Module with Brake

Diode:1600V / 75A, IGBT:1400A/50A

■ 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 _{RRM}	1600	V	
	Non-repetitive peak reverse voltage	V _{RSM}	1760	V	
	Average output current	I _o	50Hz/60Hz sine wave Tc=115°C	75	A
	One cycle surge current	I _{FSM}	From rated load	600	A
	Peak current	I _p	From rated load	1440	A
	Operation junction temperature	T _j		-40 to +125	°C
Brake	Collector-Emitter voltage	V _{GES}	1400	V	
	Gate-Emitter voltage	V _{GES}	±20	V	
	Collector current	I _c	DC	Tc=25°C 50	A
				Tc=75°C 35	
			1ms	Tc=25°C 100 Tc=75°C 70	A
	Collector power dissipation	P _c	1 device	240	W
	Repetitive peak reverse voltage	V _{RRM}		1400	V
	Operation junction temperature	T _j		+150	°C
	Storage junction temperature	T _{sg}	AC : 1 minute	-40 to +125	°C
	Isolation voltage	V _{iso}	M5 screw	3000	V
Mounting screw torque			2.0 to 2.5	N·m	

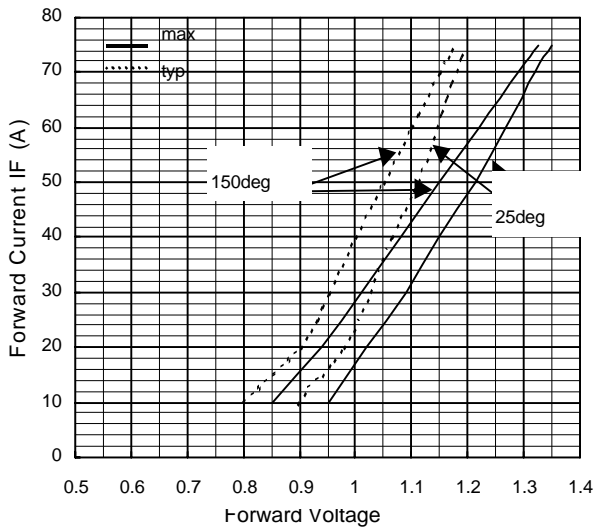
● Electrical characteristics (Tj=25°C unless otherwise specified)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	
Co.	Forward voltage	V _{FM}			1.35	V	
	Reverse current	I _{RRM}			15	mA	
Brake	Zero gate voltage Collector current	I _{CES}			1.0	mA	
	Gate-Emitter leakage current	I _{GES}			200	nA	
	Collector-Emitter saturation voltage	V _{CE(sat)}	V _{GE} =15V, I _c =35A		2.4	2.8	V
	Turn-on time	ton	V _{CC} =800V		0.35	1.2	μs
		tr	I _c =35A		0.25	0.6	
	Turn-off time	toff	V _{GE} =±15V		0.45	1.0	
		tf	R _G =33ohm		0.08	0.3	
Reverse current	I _{RRM}				1.0	mA	

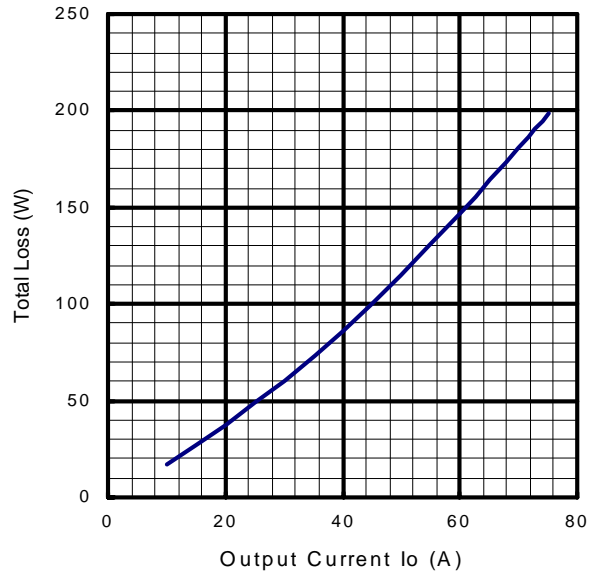
● Thermal characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Thermal resistance	R _{th(j-c)}	Converter	Per total loss		0.16	°C/W
			Per each device		0.96	
		Brake IGBT (1 device)		0.70		
Thermal Resistance(Case to fine)	R _{th(c-f)}	with thermal compound			0.08	°C/W

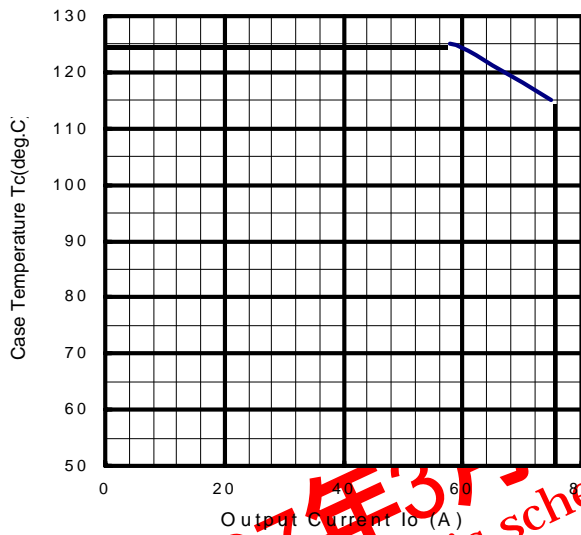
Forward Characteristics



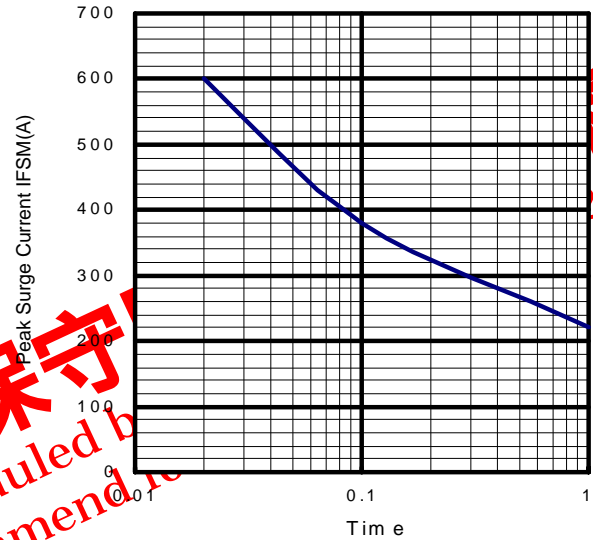
Output Current - Total Loss



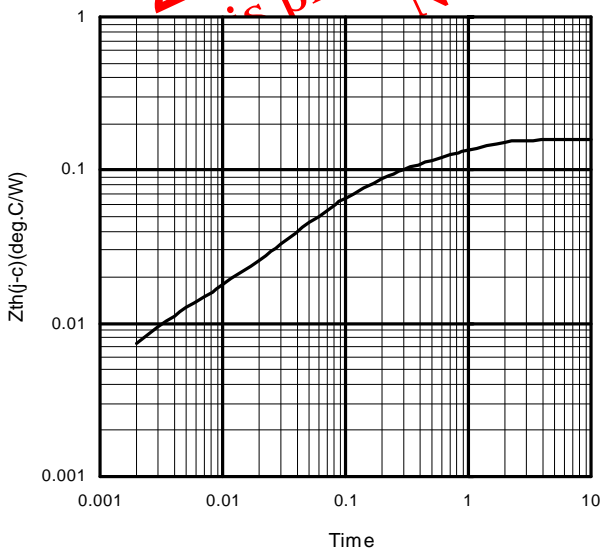
Output Current - Case Temperature



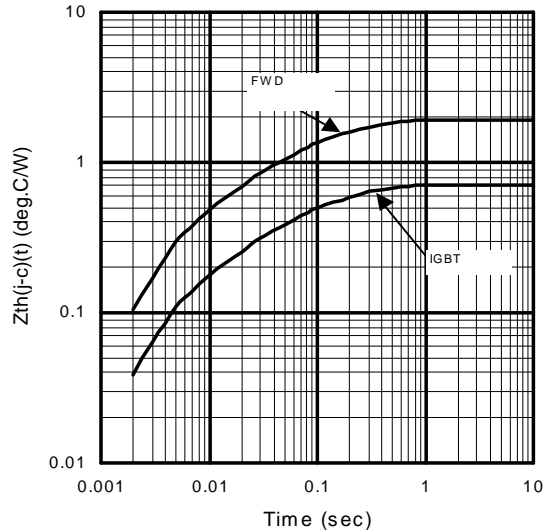
Surge Current



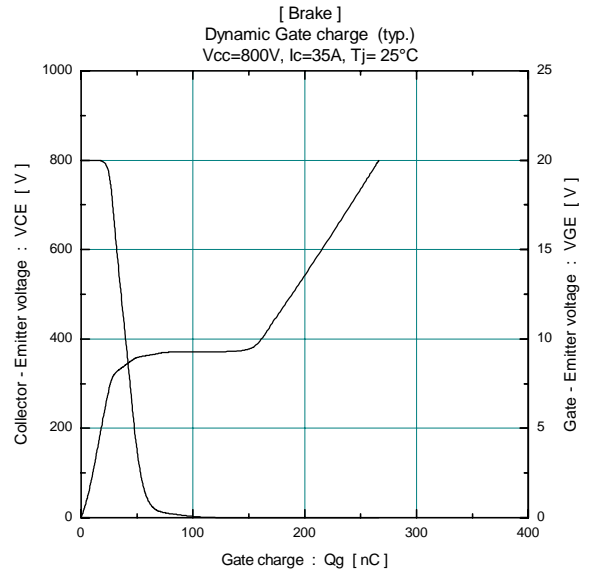
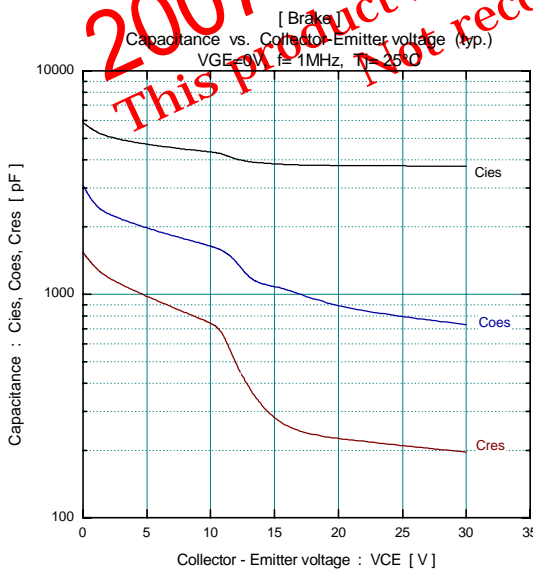
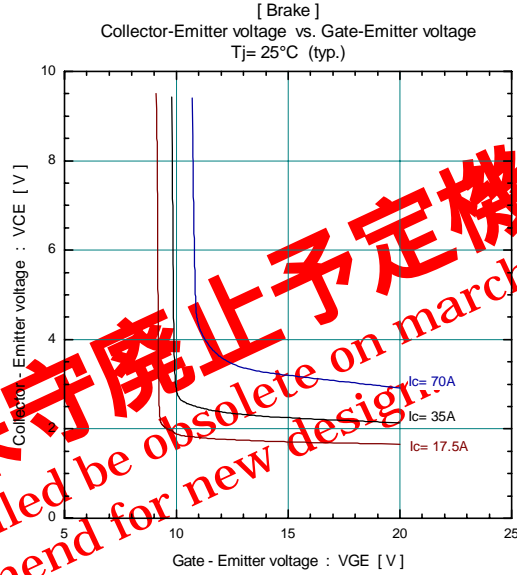
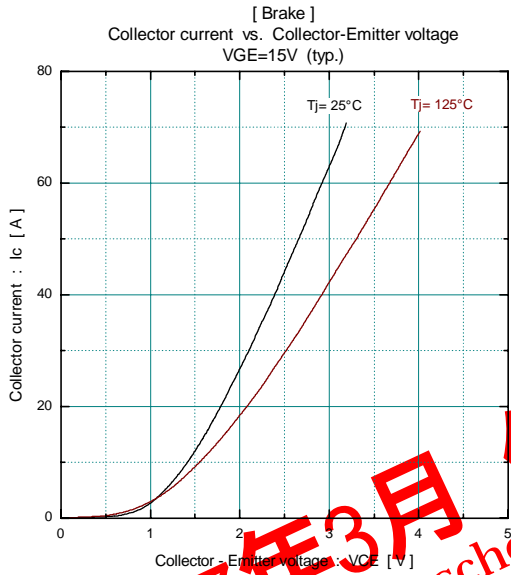
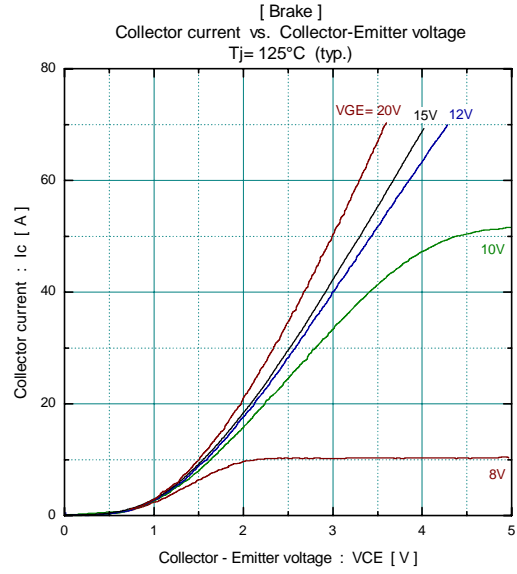
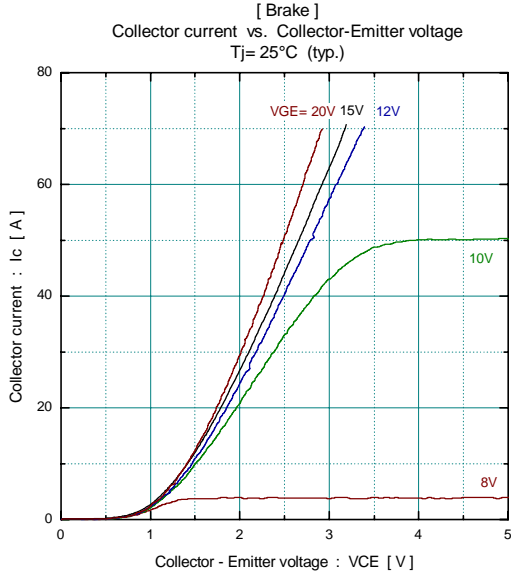
Transient Thermal Impedance



[Brake] Transient Thermal Impedance

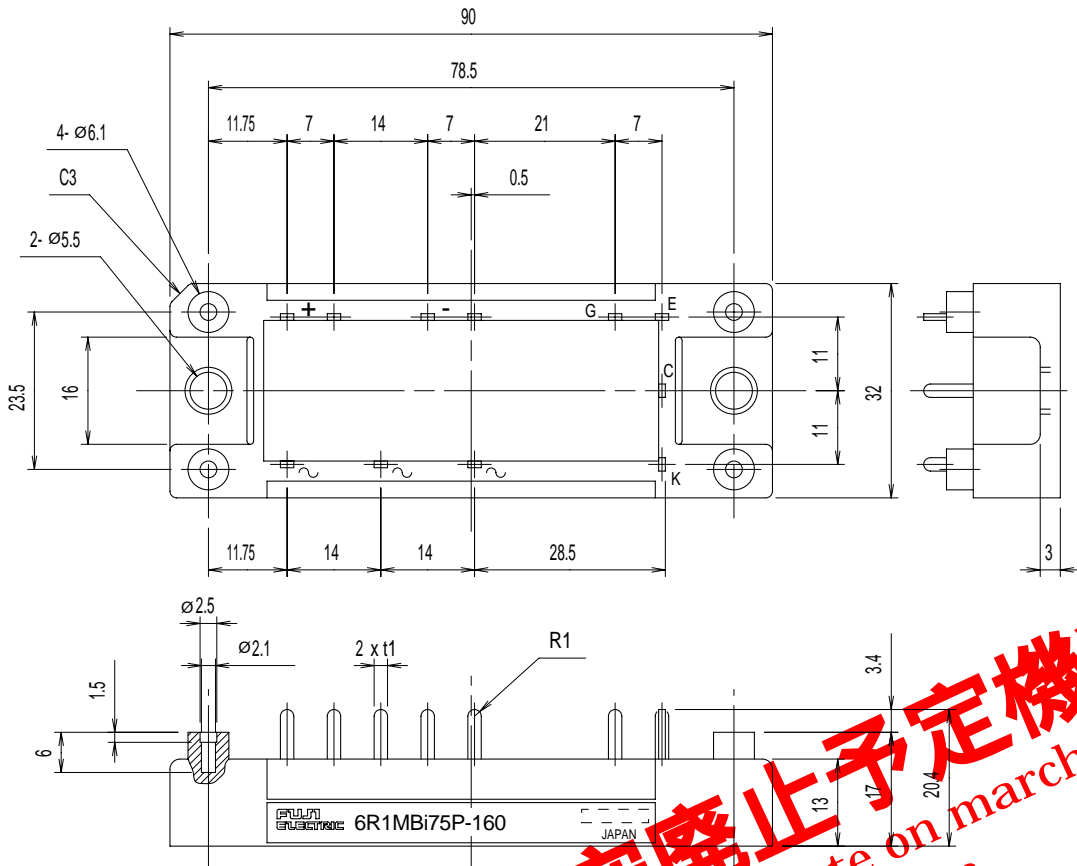


2007年5月 保守
 This product is scheduled for obsolescence
 Not recommended for new designs

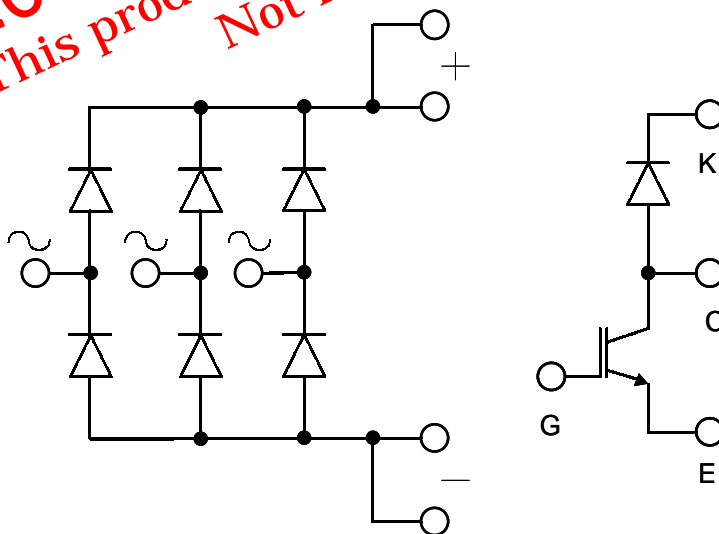


2007年3月 保守廃止予定機種
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■ Outline Drawings, mm



■ Equivalent Circuit Schematic



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