FUJI ELECTRIC

6MBI 15F-120

6-Pack IGBT
1200 V
15 A

IGBT MODULE (F series)

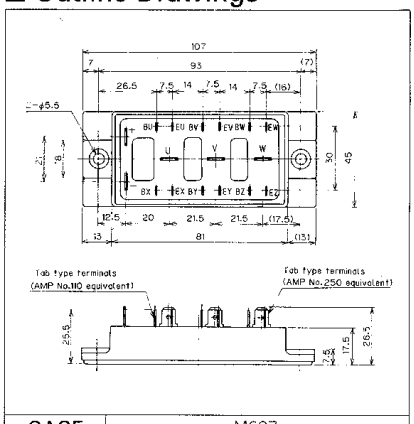
■ Features

- Low Saturation Voltage
- Voltage Drive
- Variety of Power Capacity Series

■ Applications

- Inverter for Motor Drive
- AC and DC Servo Drive Amplifier
- Uninterruptible Power Supply
- Industrial Machines, such as Welding Machines

■ Outline Drawings



CASE	M607
UL	E82988(M)

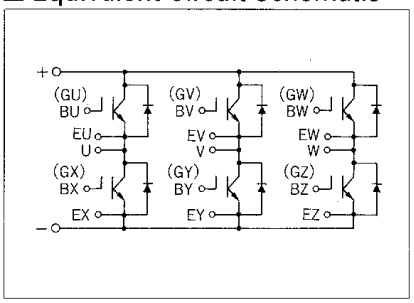
■ Maximum Ratings and Characteristics

● Absolute Maximum Ratings

Items		Symbols	Ratings	Units
Collecter-Emitter Voltage		V_{CES}	1200	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collecter Current	Continuous	I_C	15	A
	1ms	$I_{C\ pulse}$	30	
	Continuous	$-I_C$	15	
	1ms	$-I_{C\ pulse}$	30	
Max. Power Dissipation		P_C	120	W
Operating Temperature		T_j	+150	°C
Storage Temperature		T_{stg}	–40 to +125	°C
Net. Weight			235	g
Isolation Voltage	AC. 1min.	V_{isol}	2500	V
Screw Torque		Mounting *1	3.5 {35}	N・m
		Terminals	——	{kg・cm}

*1 Recommendable Value 2.5 to 3.5 N•m {25 to 35 kg•cm} (M5)

■ Equivalent Circuit Schematic

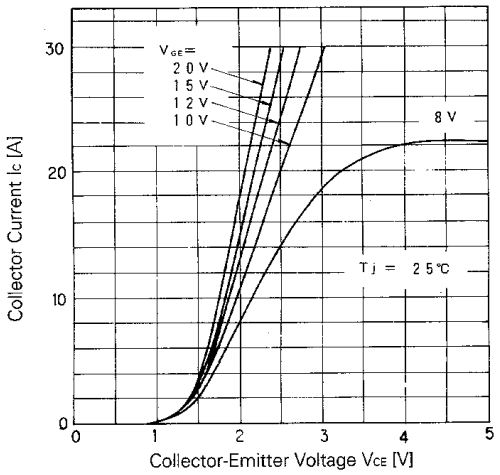


● Electrical Characteristics (Tc=25°C)

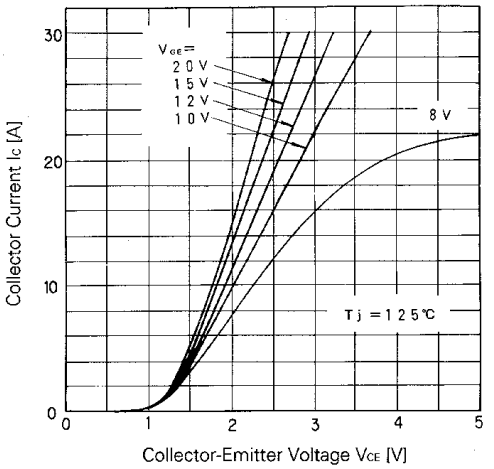
Items	Symbols	Test Conditions		Min.	Typ.	Max.	Units
Zero Gate Voltage Collecter Current	I_{CES}	V_{GE}=0V V_{CE}=1200V T_j=25°C				1.0	mA
		V_{GE}=0V V_{CE}=1200V T_j=125°C				——	mA
Gate-Emitter Leackage Current	I_{GES}	V_{CE}=0V V_{GE}=±20V				100	nA
Gate-Emitter Threshold Voltage	$V_{GE\ (th)}$	V_{CE}=20V I_C=15mA		3.0		6.0	V
Collecter-Emitter Saturation Voltage	$V_{CE\ (sat)}$	V_{GE}=15V I_C=15A				2.5	V
Input Capacitance	C_{ies}	V_{GE}=0V			2700		pF
Output Capacitance	C_{oes}	V_{CE}=10V			——		
Reverse Transfer Capacitance	C_{res}	f=1MHz			——		
Turn-on Time	t_{on}	V_{CC}=600V	Resitive load			0.8	μs
	t_r	I_C=15A				0.6	
Turn-off Time	t_{off}	V_{GE}=±15V	Inductive load			1.5	
	t_f	R_G=82Ω				1.0	
Diode Forward On-Voltage	V_F	I_F=15A, V_{GE}=0V				2.5	V
Reverse Recovery Time	t_{rr}	I_F=15A, –di/dt=50A/μs V_{GE}=–10V				350	ns

● Thermal Characteristics

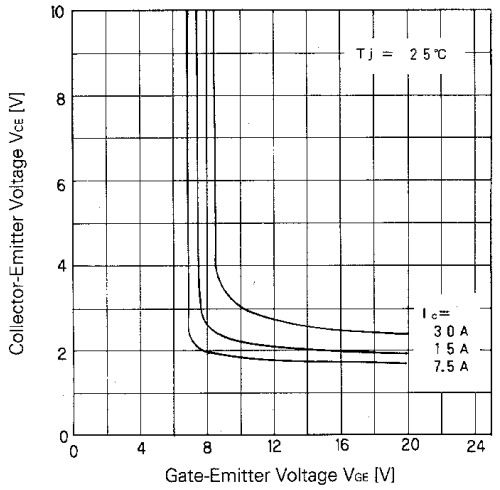
Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	$R_{th\ (j-c)}$	IGBT			1.04	°C/W
	$R_{th\ (j-c)}$	Diode			2.01	
	$R_{th\ (c-f)}$	With Thermal compound		0.06		



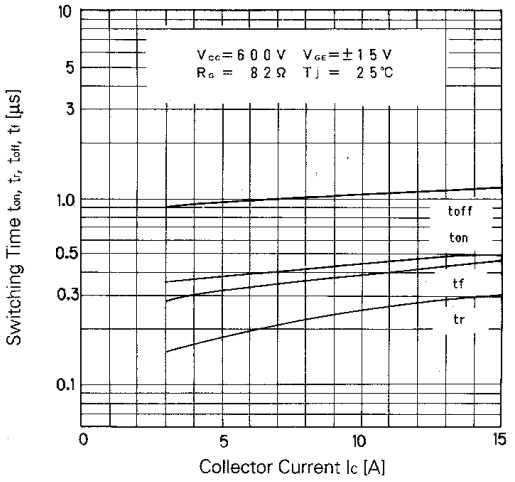
Collector Current vs. Collector-Emitter Voltage



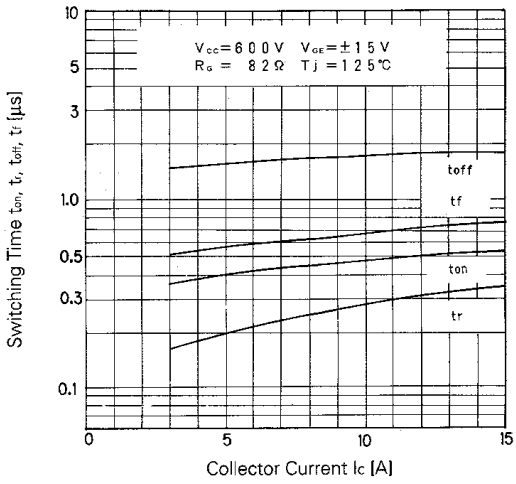
Collector Current vs. Collector-Emitter Voltage



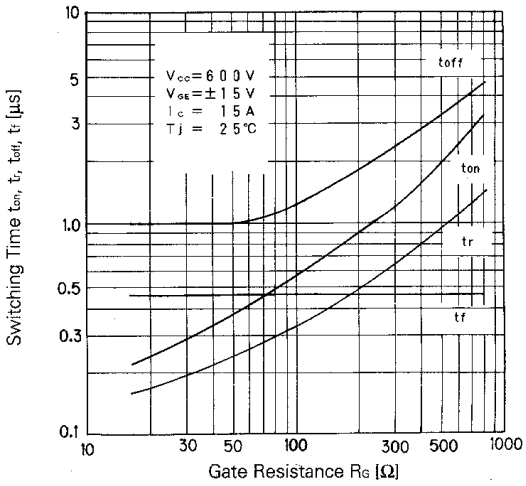
Collector-Emitter Voltage vs. Gate-Emitter Voltage



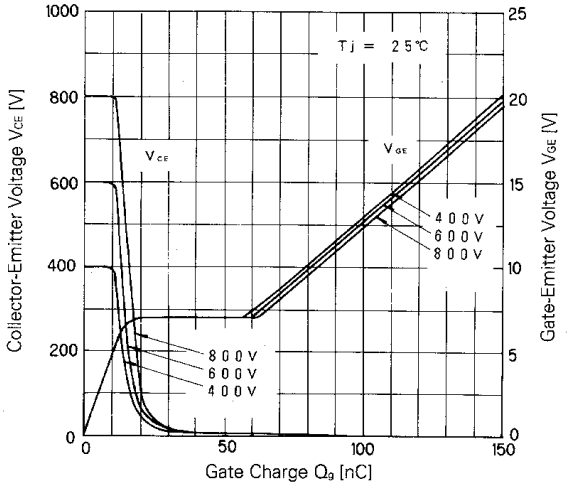
Switching Time



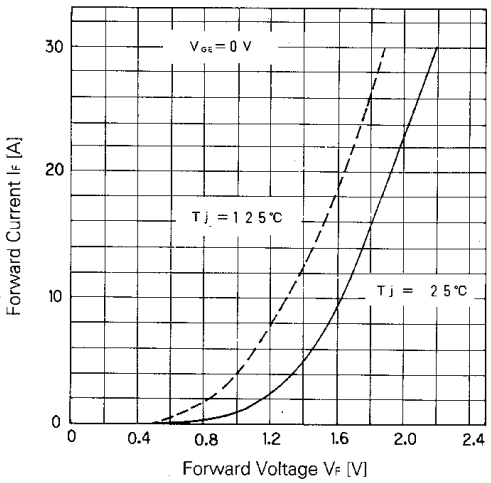
Switching Time



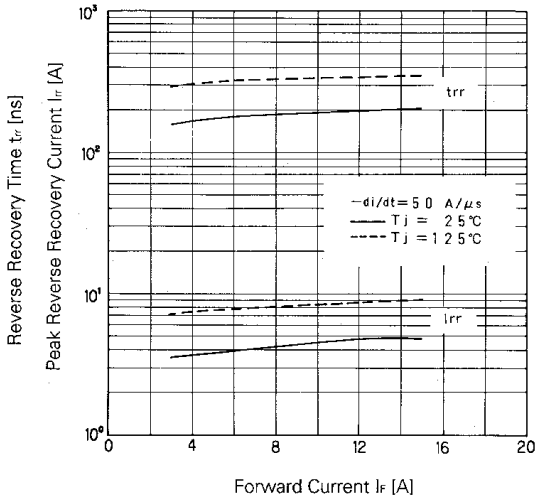
Switching Time-Gate Resistance



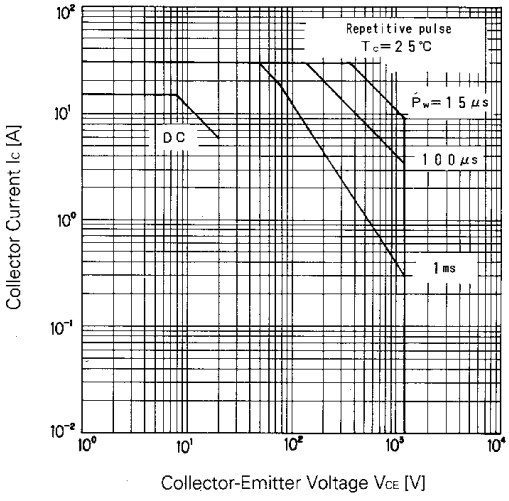
Dynamic Input Characteristic



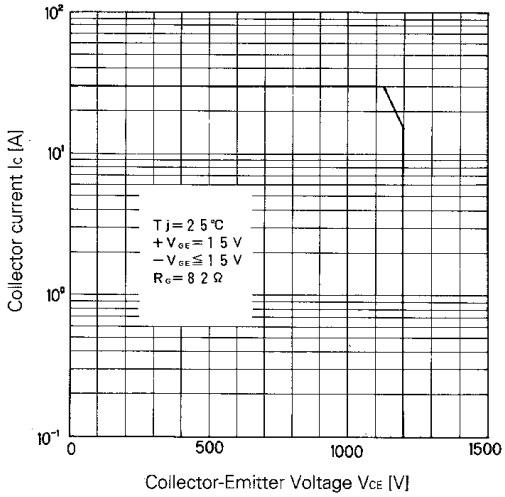
Forward Voltage of Free Wheel Diode



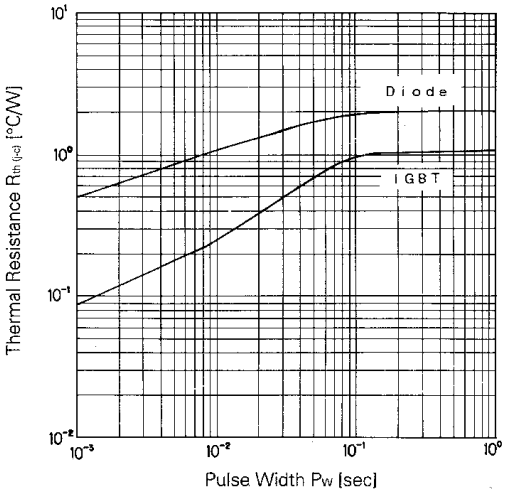
Trr, Irr -IF



Safe Operating Area



Reverse Biased Safe Operating Area



Transient Thermal Resistance

For more information, contact:

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