1MBI50L-060(50A)

Fuji Power Module

IGBT MODULE (L series)

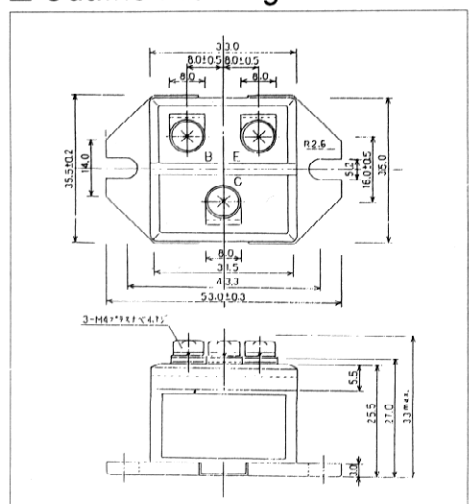
■ Features

- High Speed Switching
- Low Saturation Voltage
- Voltage Drive
- Isolated Package

■ Applications

- Ideal for Chopper Application
- AC and DC Servo Drive Supply
- Uninterruptible Power Supply
- Industrial Machines, such as Welding Machines

■ Outline Drawings



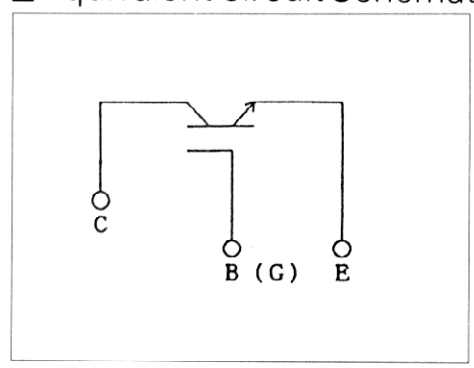
CASE	M110

■ Maximum Ratings and Characteristics

● Absolute Maximum Ratings

Items		Symbols	Ratings	Units
Collecter-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collecter Current	Continuous	I_C	50	A
	1ms	$I_{C\ pulse}$	100	
Max. Power Dissipation		P_C	200	W
Operating Temperature		T_j	+150	°C
Storage Temperature		T_{stg}	−40 to +125	°C
Isolation Voltage	AC. 1min.	V_{is}	2500	V
Screw Torque		Mounting *1	1.7	N•m
		Terminals *1	1.7	

■ Equivalent Circuit Schematic



*1 Recommendable Value 1.3 ~ 1.7 N•m (M4)

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

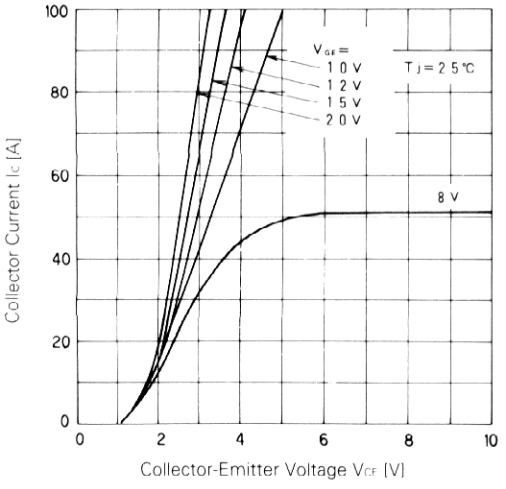
Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Zero Gate Voltage Collecter Current	I_{CES}	V_{GE}=0V V_{CE}=600V T_c=25°C			1.0	mA
Gate-Emitter Leackage Current	I_{GES}	V_{CE}=0V V_{GE}=±20V			100	nA
Gate-Emitter Threshold Voltage	$V_{GE\ (th)}$	V_{CE}=20V I_C=50mA	3.0		6.0	V
Collecter-Emitter Saturation Voltage	$V_{CE\ (sat)}$	V_{GE}=15V I_C=50A		2.7	3.5	V
Input Capacitance	C_{ies}	V_{GE}=0V		4750		pF
Output Capacitance	C_{oes}	V_{CE}=10V		–		
Reverse Transfer Capacitance	C_{res}	f=1MHz		–		
Turn-on Time	t_{on}	V_{CC}=300V		0.4	0.8	µs
	t_r	I_C=50A		0.3	0.6	
Turn-off Time	t_{off}	V_{GE}=±15V		0.6	1.0	
	t_f	R_G=51Ω		0.2	0.35	

t_{on}, t_f: Resistive Load t_{off}, t_f: Inductive Load

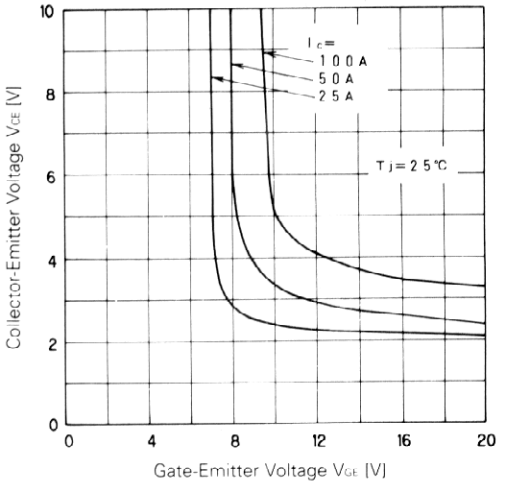
● Thermal Characteristics

Items	Symbols	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance	$R_{th\ (j-c)}$	IGBT			0.625	°C/W
	$R_{th\ (c-f)}$	With Thermal compound		0.05		

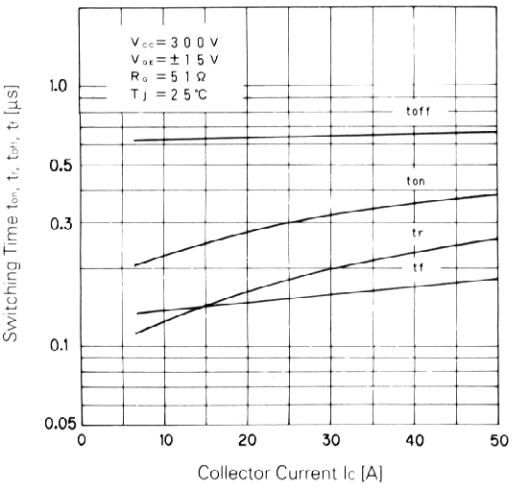
■ Characteristics



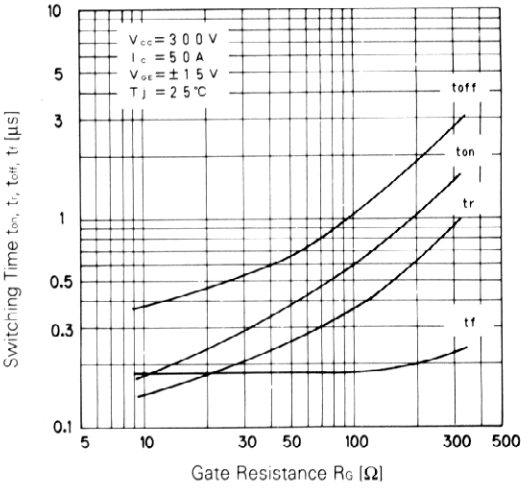
Collector Current vs. Collector-Emitter Voltage



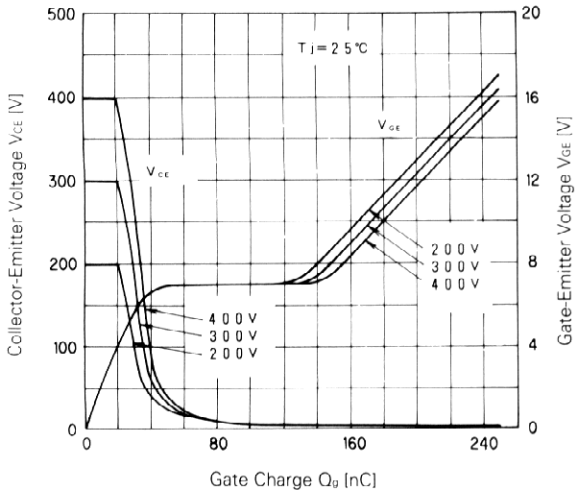
Collector-Emitter Voltage vs. Gate-Emitter Voltage



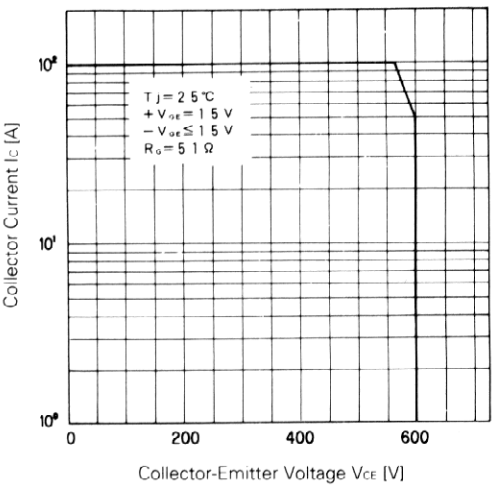
Switching Time



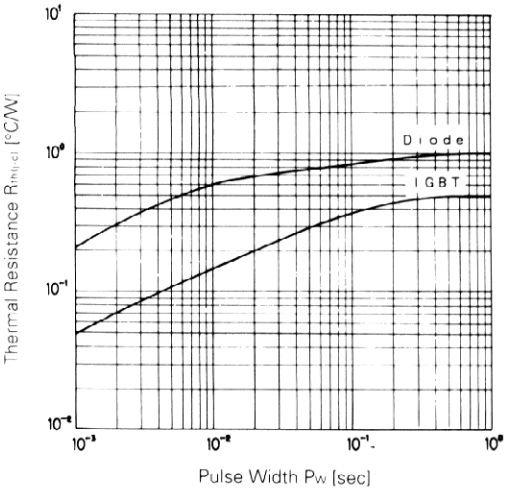
Switching Time-Gate Resistance



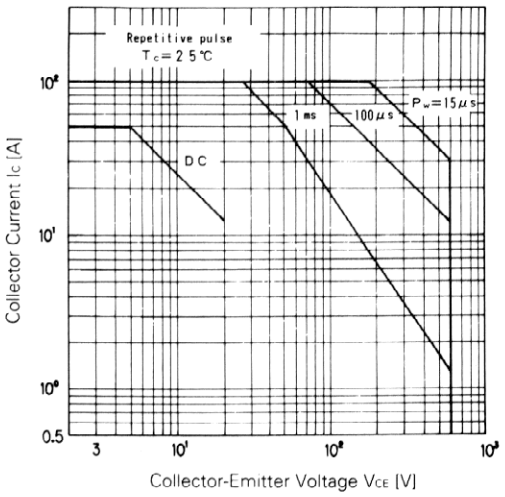
Dynamic Input Characteristic



Reverse Biased Safe Operating Area



Transient Thermal Resistance



Safe Operating Area