

IGBT Module-Chopper

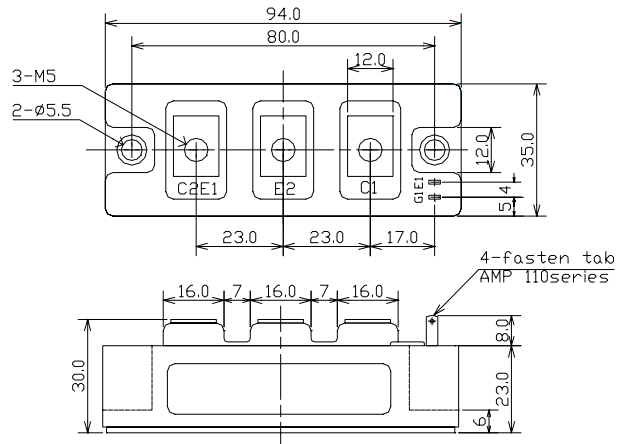
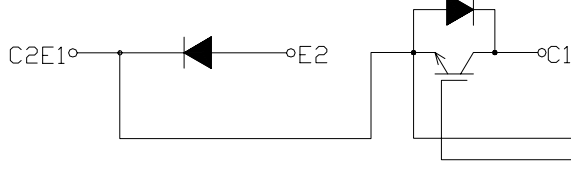
50A, 600V

PCHMB50A6A

□ 回路図 : CIRCUIT

□ 外形寸法図 : OUTLINE DRAWING

Dimension: [mm]



□ 最大定格 : MAXIMUM RATINGS (T_c=25)

重量: 220g

Item	Symbol	Rated Value	Unit
コレクタ・エミッタ間電圧 Collector-Emitter Voltage	V _{CES}	600	V
ゲート・エミッタ間電圧 Gate-Emitter Voltage	V _{GES}	±20	V
コレクタ電流 Collector Current	DC	I _C	A
	1ms	I _{CP}	
コレクタ損失 Collector Power Dissipation	P _C	250	W
接合温度 Junction Temperature Range	T _j	-40 ~ +150	
保存温度 Storage Temperature Range	T _{stg}	-40 ~ +125	
絶縁耐圧(Terminal to Base AC,1minute) Isolation Voltage	V _{iso}	2,500	V (RMS)
締め付けトルク Mounting Torque	Module Base to Heatsink	2 (20.4)	N・m (kgf・cm)
	Busbar to Main Terminal		

□ 電気的特性 : ELECTRICAL CHARACTERISTICS (T_c=25)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
コレクタ遮断電流 Collector-Emitter Cut-Off Current	I _{CES}	V _{CE} = 600V, V _{GE} = 0V	-	-	1.0	mA
ゲート漏れ電流 Gate-Emitter Leakage Current	I _{GES}	V _{GE} = ±20V, V _{CE} = 0V	-	-	1.0	μA
コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C = 50A, V _{GE} = 15V	-	2.0	2.5	V
ゲートしきい値電圧 Gate-Emitter Threshold Voltage	V _{GE(th)}	V _{CE} = 5V, I _C = 50mA	4.0	-	8.0	V
入力容量 Input Capacitance	C _{ies}	V _{CES} = 10V, V _{GE} = 0V, f = 1MHz	-	5,000	-	pF
スイッチング時間 Switching Time	上昇時間 Rise Time	V _{CC} = 300V R _L = 6Ω R _G = 15Ω V _{GE} = ±15V	-	0.15	0.30	μs
	ターンオン時間 Turn-on Time		-	0.25	0.40	
	下降時間 Fall Time		-	0.20	0.35	
	ターンオフ時間 Turn-off Time		-	0.45	0.70	

□ フリーホイーリングダイオードの特性: FREE WHEELING DIODE RATINGS & CHARACTERISTICS (T_c=25)

Item	Symbol	Rated Value	Unit
順電流 Forward Current	DC	I _F	A
	1ms	I _{FM}	

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
順電圧 Peak Forward Voltage	V _F	I _F = 50A, V _{GE} = 0V	-	1.9	2.4	V
逆回復時間 Reverse Recovery Time	t _{rr}	I _F = 50A, V _{GE} = -10V di/dt = 50A/μs	-	0.15	0.25	μs

□ 熱的特性 : THERMAL CHARACTERISTICS

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
熱抵抗 Thermal Impedance	IGBT	Junction to Case	-	-	0.50	/W
	Diode		-	-	1.00	

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Fig.1- Output Characteristics (Typical)

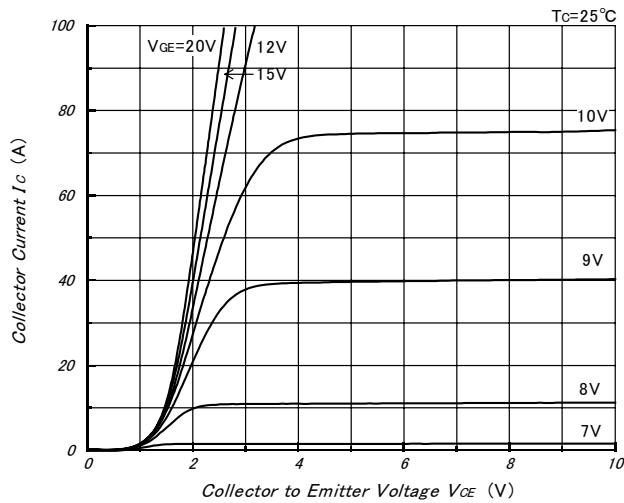


Fig.2- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

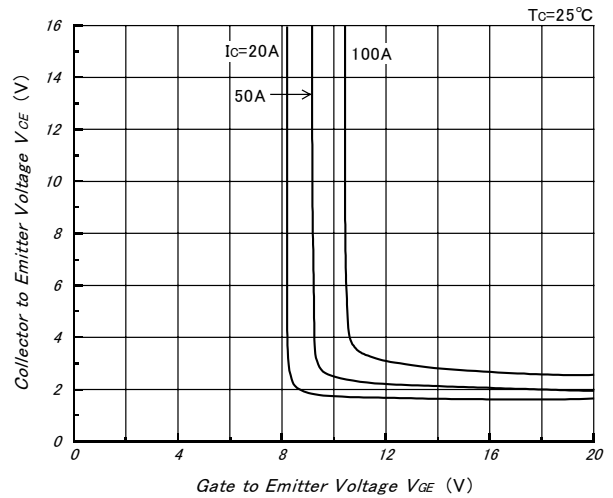


Fig.3- Collector to Emitter On Voltage vs. Gate to Emitter Voltage (Typical)

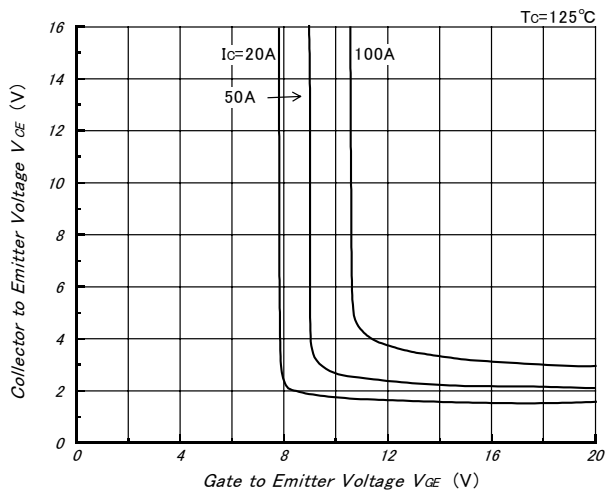


Fig.4- Gate Charge vs. Collector to Emitter Voltage (Typical)

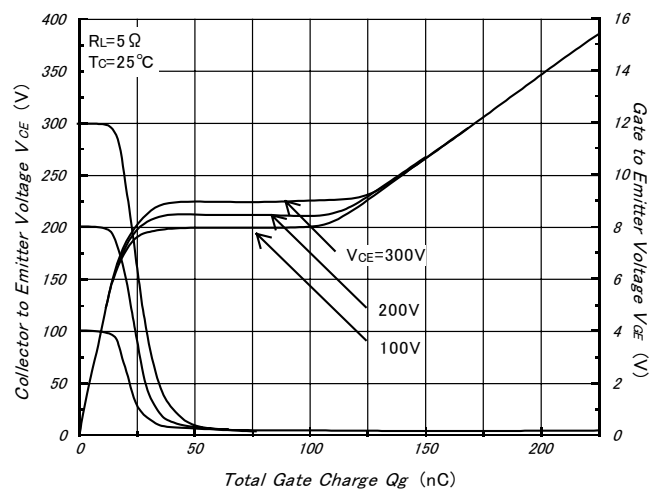


Fig.5- Capacitance vs. Collector to Emitter Voltage (Typical)

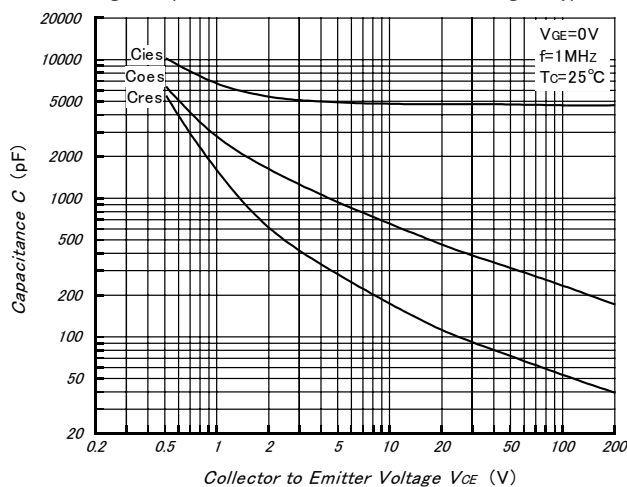
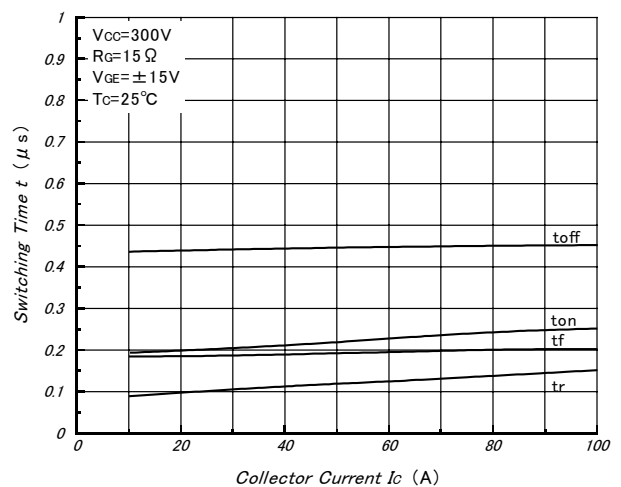


Fig.6- Collector Current vs. Switching Time (Typical)



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Fig.7- Series Gate Impedance vs. Switching Time (Typical)

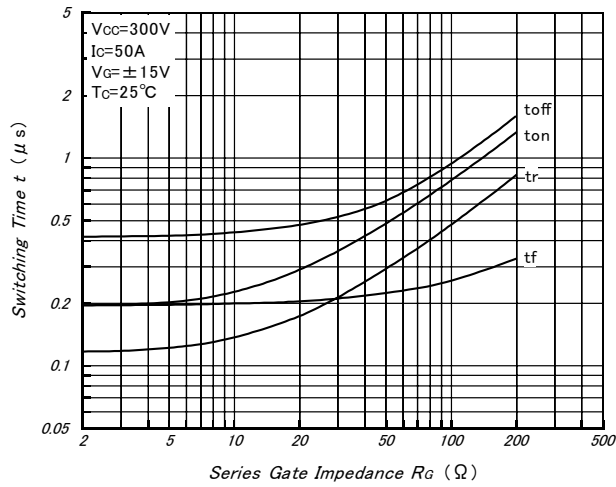


Fig.8- Forward Characteristics of Free Wheeling Diode (Typical)

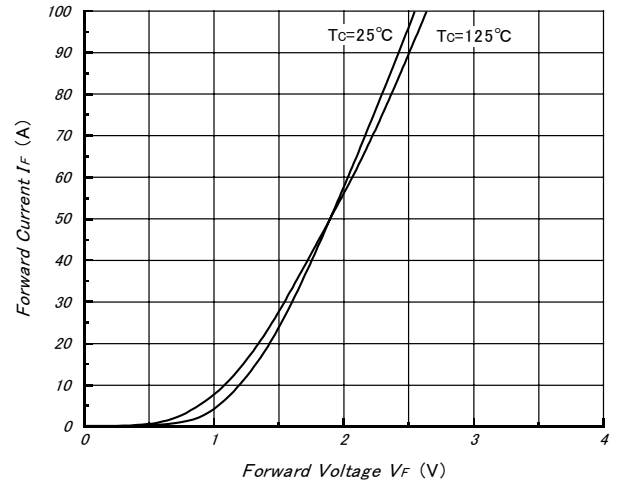


Fig.9- Reverse Recovery Characteristics (Typical)

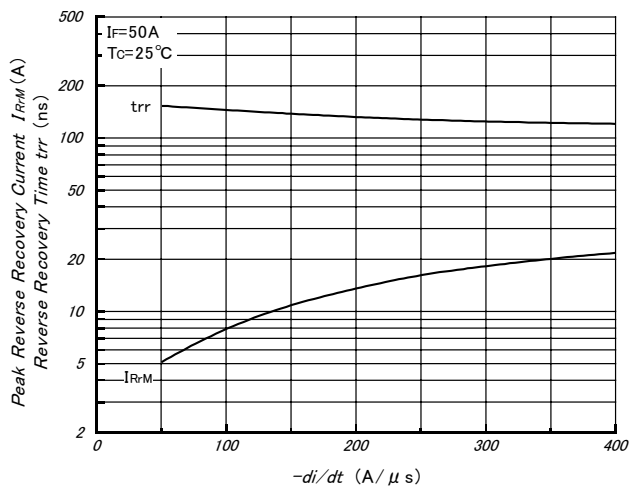


Fig.10- Reverse Bias Safe Operating Area (Typical)

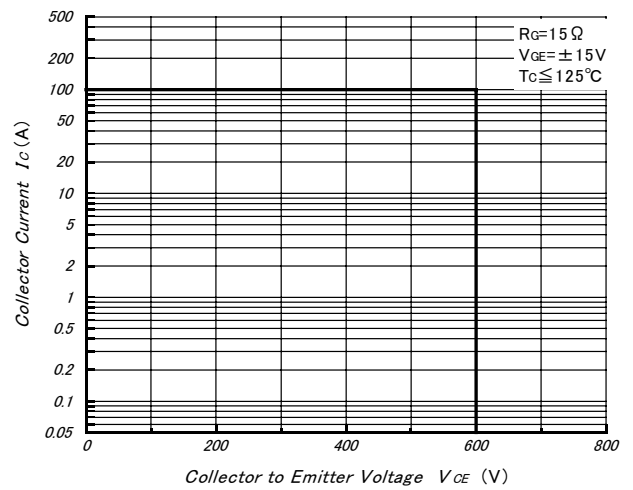


Fig.11- Transient Thermal Impedance

