

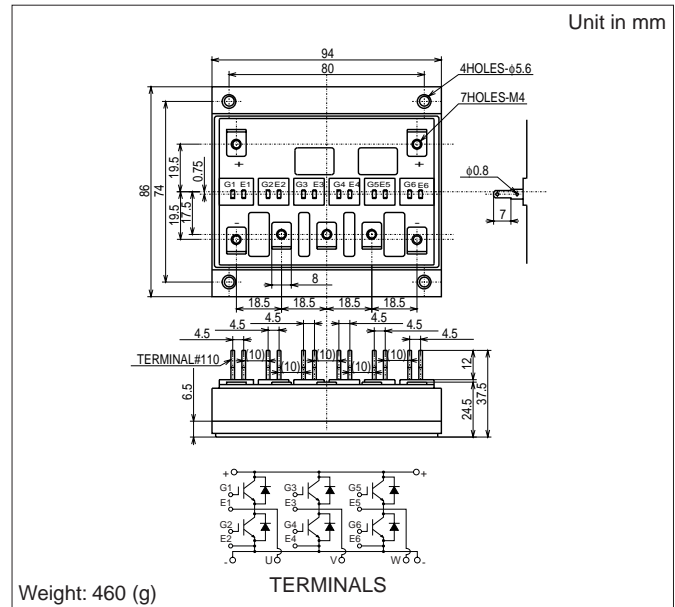
MBB200GS6AW

Silicon N-channel IGBT

OUTLINE DRAWING

FEATURES

- * High speed and low saturation voltage.
- * low noise due to built-in free-wheeling diode - ultra soft fast recovery diode(USFD).
- * Isolated head sink (terminal to base).



ABSOLUTE MAXIMUM RATINGS (T_c=25°C)

Item	Symbol	Unit	MBB200GS6AW	
Collector Emitter Voltage	V _{CES}	V	600	
Gate Emitter Voltage	V _{GES}	V	±20	
Collector Current	DC	I _C	200	
	1ms	I _{Cp}	400	
Forward Current	DC	I _F	200 (1)	
	1ms	I _{FM}	400	
Collector Power Dissipation	P _C	W	600	
Junction Temperature	T _j	°C	-40 ~ +150	
Storage Temperature	T _{stg}	°C	-40 ~ +125	
Isolation Voltage	V _{ISO}	V _{RMS}	2,500(AC 1 minute)	
Screw Torque	Terminals	-	1.37(14)	(2)
	Mounting	-	1.96(20)	(3)

Notes:(1)RMS Current of Diode 60Arms max.

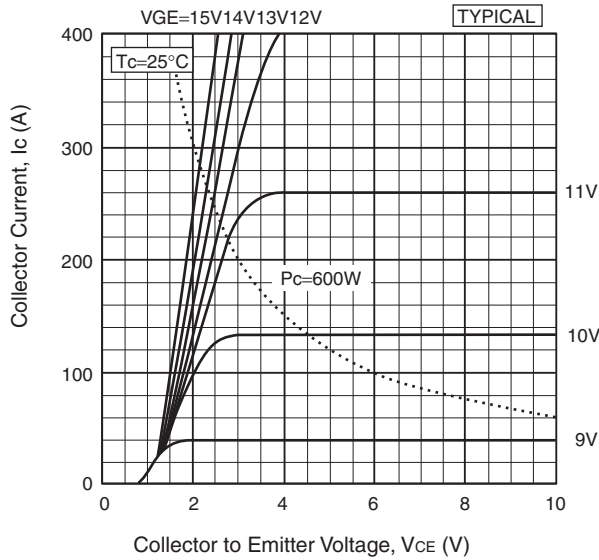
(2)Recommended Value 1.18N.m(12kgf.cm)

(3)Recommended Value 1.67N.m(17kgf.cm)

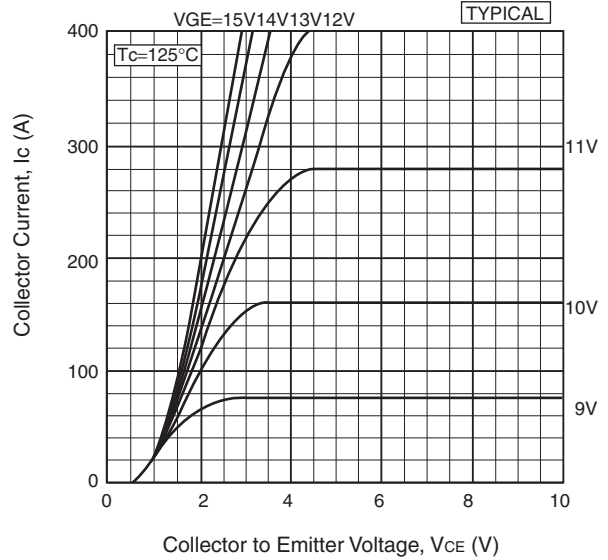
CHARACTERISTICS (T_c=25°C)

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions	
Collector Emitter Cut-Off Current	I _{CES}	mA	-	-	1.0	V _{CE} =600V, V _{GE} =0V	
Gate Emitter Leakage Current	I _{GES}	nA	-	-	±500	V _{GE} =±20V, V _{CE} =0V	
Collector Emitter Saturation Voltage	V _{CE(sat)}	V	-	1.9	2.6	I _C =200A, V _{GE} =15V	
Gate Emitter Threshold Voltage	V _{GE(TO)}	V	-	-	10	V _{CE} =5V, I _C =200mA	
Input Capacitance	C _{ies}	pF	-	9,700	-	V _{CE} =10V, V _{GE} =0V, f=1MHz	
Switching Times	Rise Time	t _r	-	0.3	0.5	V _{CC} =300V	
	Turn On Time	t _{on}	-	0.4	0.6	R _L =1.5Ω	
	Fall Time	t _f	-	0.25	0.35	R _G =12Ω	
	Turn Off Time	t _{off}	-	0.6	0.9	V _{GE} =±15V	
Peak Forward Voltage Drop	V _{FM}	V	-	2.2	3.1	I _F =200A, V _{GE} =0V	
Reverse Recovery Time	t _{rr}	μs	-	-	0.3	I _F =200A, V _{GE} =-10V, di/dt=200A/μs	
Thermal Impedance	IGBT	R _{th(j-c)}	°C/W	-	-	0.21	Junction to case
	FWD	R _{th(j-c)}	°C/W	-	-	0.5	

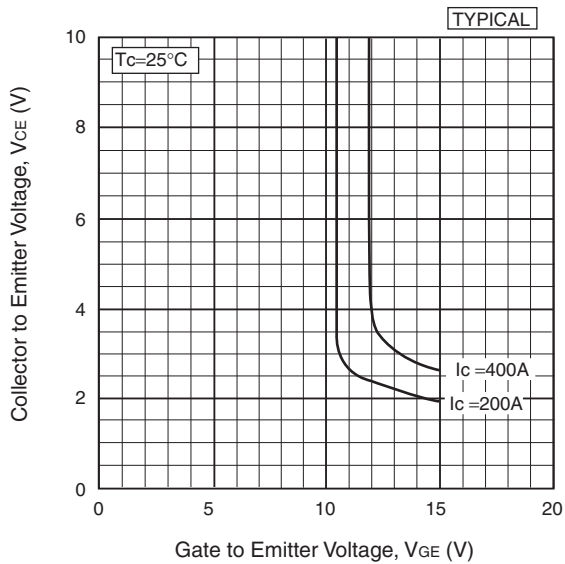
Notes:(4) R_G value is the test condition's value for decision of the switching times, not recommended value.Determine the suitable R_G value after the measurement of switching waveforms (overshoot voltage, etc.) with appliance mounted.



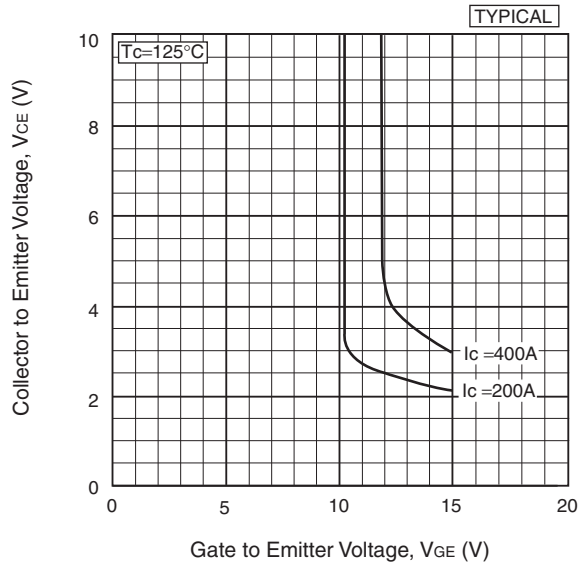
Collector current vs. Collector to Emitter voltage



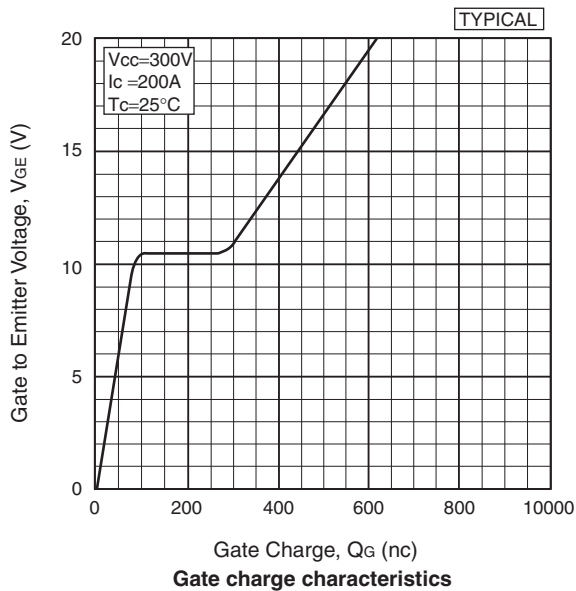
Collector current vs. Collector to Emitter voltage



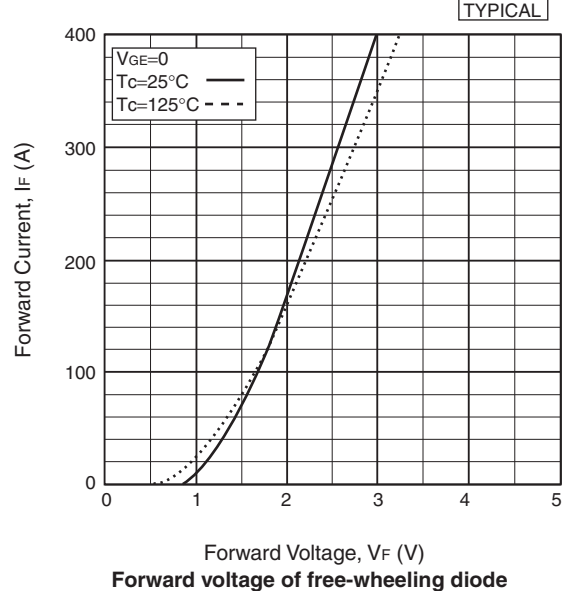
Collector to Emitter voltage vs. Gate to Emitter voltage



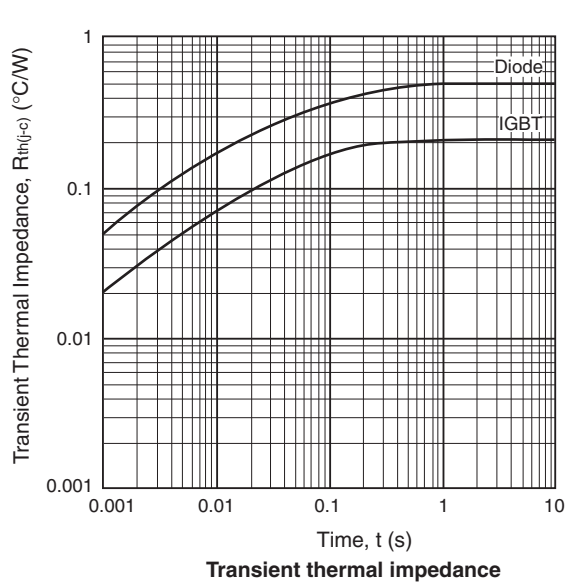
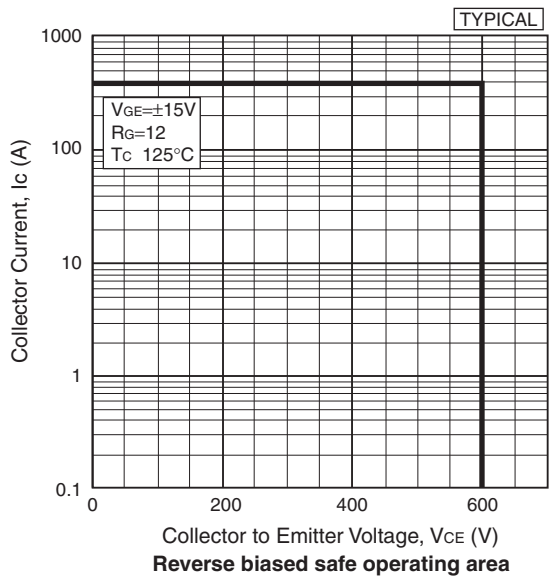
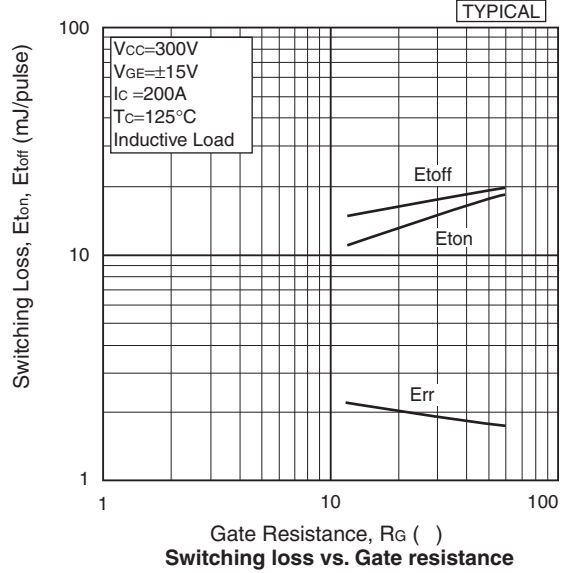
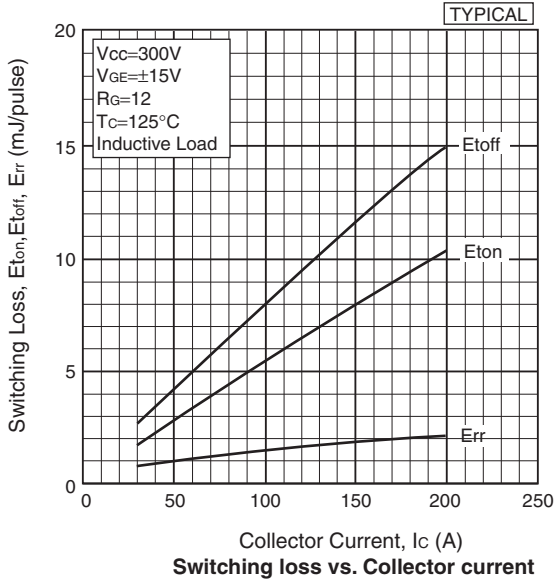
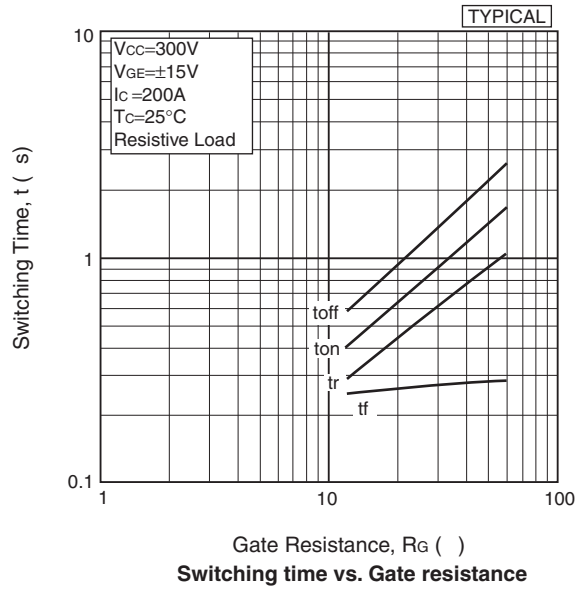
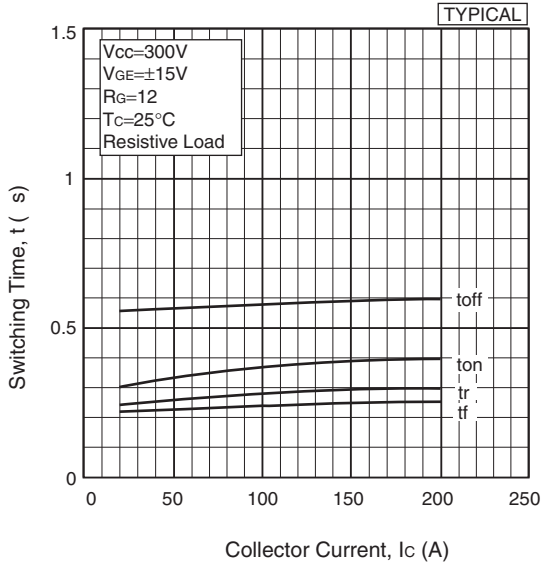
Collector to Emitter voltage vs. Gate to Emitter voltage



Gate charge characteristics



Forward voltage of free-wheeling diode



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