

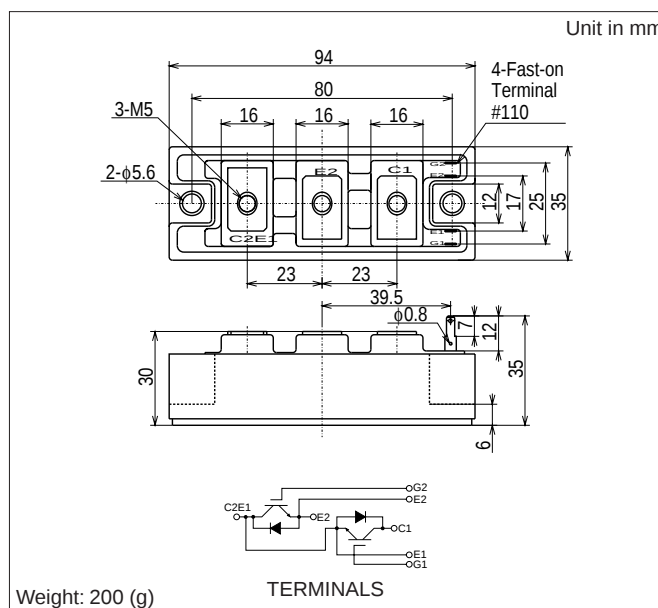
MBM200GS6AW

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 (Tc=25°C)

Item	Symbol	Unit	MBM200GS6AW
Collector Emitter Voltage	V_{CES}	V	600
Gate Emitter Voltage	V_{GES}	V	±20
Collector Current	DC	A	200
	1ms		400
Forward Current	DC	A	200 (1)
	1ms		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	-	1.96(20) (2)
	Mounting	-	1.96(20) (3)

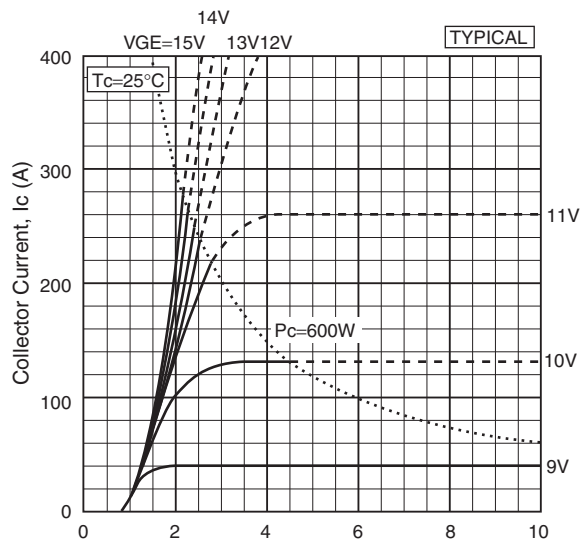
Notes:(1)RMS Current of Diode 60Arms max.

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

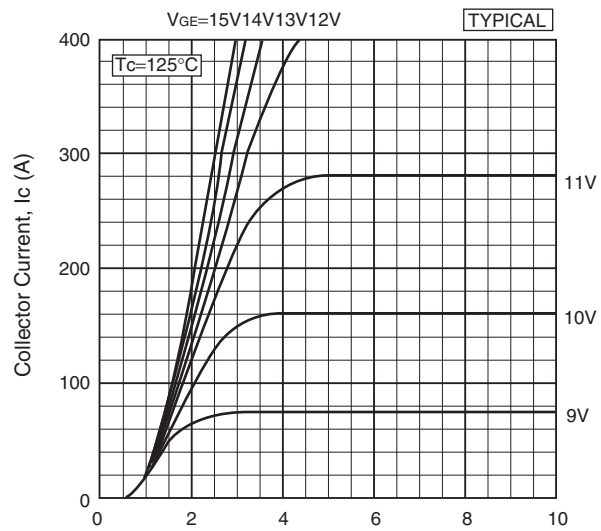
CHARACTERISTICS (Tc=25°C)

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	2.5	$I_C=200A, V_{GE}=15V$
Gate Emitter Threshold Voltage	$V_{GE(TH)}$	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	-	0.2	0.4	$V_{CC}=300V$
	Turn On Time	t_{on}	-	0.3	0.6	$R_L=1.5\Omega$
	Fall Time	t_f	-	0.25	0.35	$R_G=12\Omega$ (4)
	Turn Off Time	t_{off}	-	0.6	0.9	$V_{GE}=±15V$
Peak Forward Voltage Drop	V_{FM}	V	-	2.2	3.0	$I_F=200A, V_{GE}=0V$
Reverse Recovery Time	t_{rr}	μs	-	-	0.3	$I_F=200A, V_{GE}=-10V, di/dt=200A/\mu s$
Thermal Impedance	IGBT	$R_{th(j-c)}$	°C/W	-	0.21	Junction to case
	FWD	$R_{th(j-c)}$	°C/W	-	0.5	

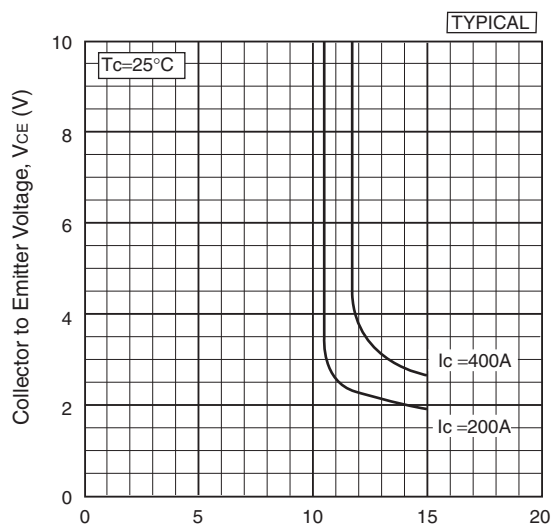
Notes:(4) R_G value is the test condition's value for decision of the switching times, not recommended value.Determine the suitable R_G value after the measurement of switching waveforms (overshoot voltage, etc.) with appliance mounted.



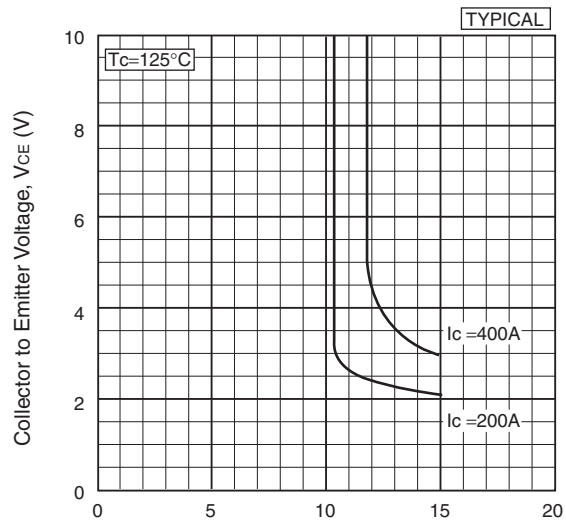
Collector current vs. Collector to Emitter voltage



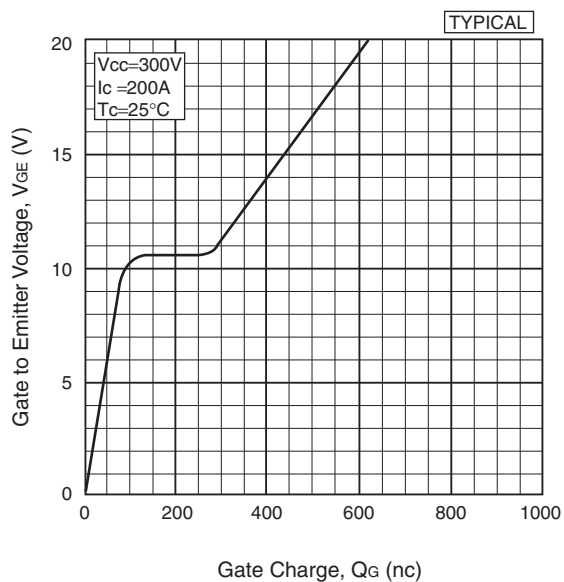
Collector current vs. Collector to Emitter voltage



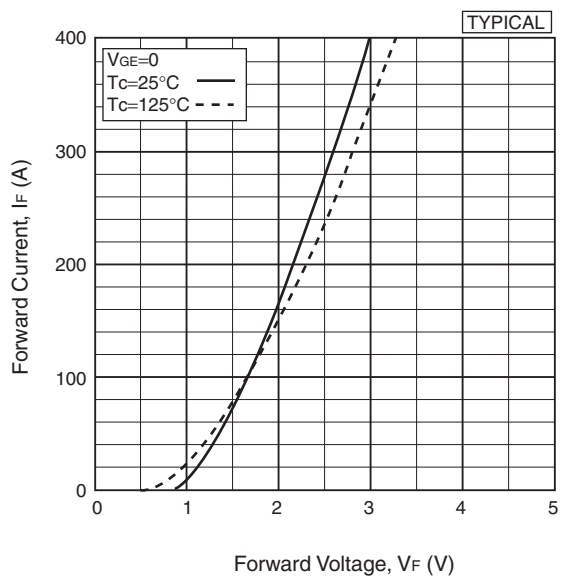
Collector to Emitter voltage vs. Gate to Emitter voltage



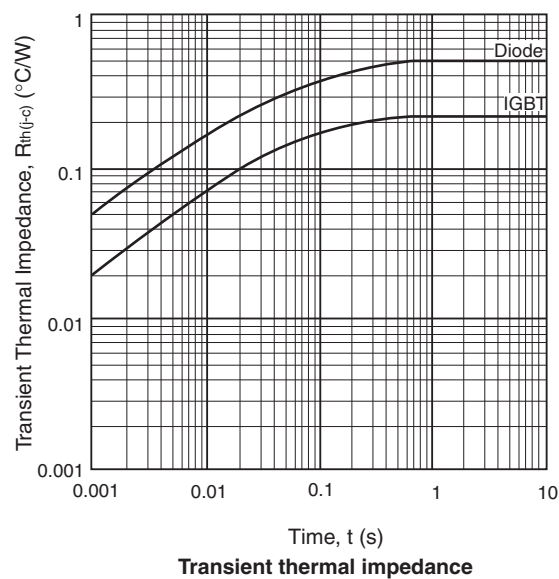
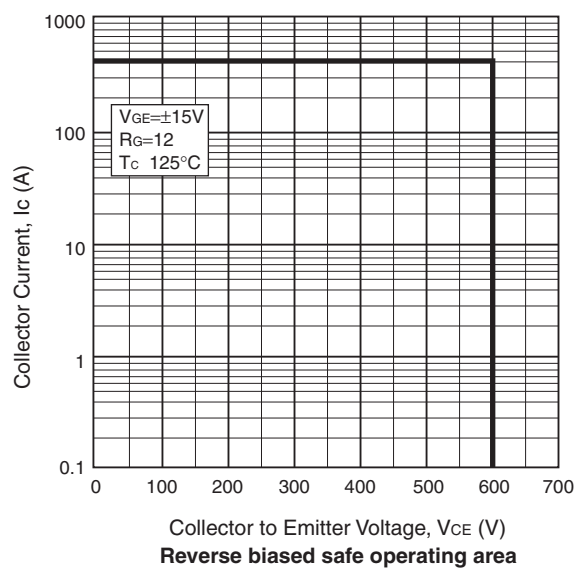
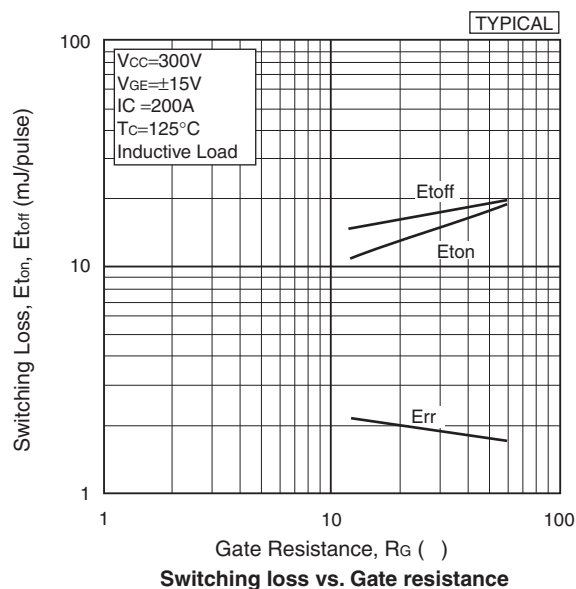
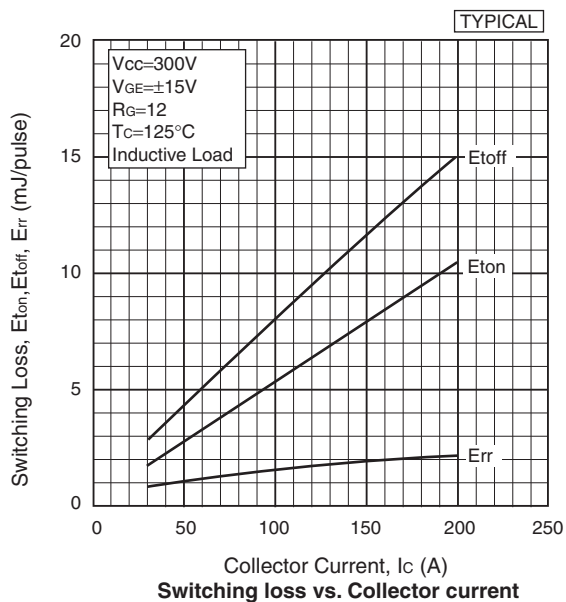
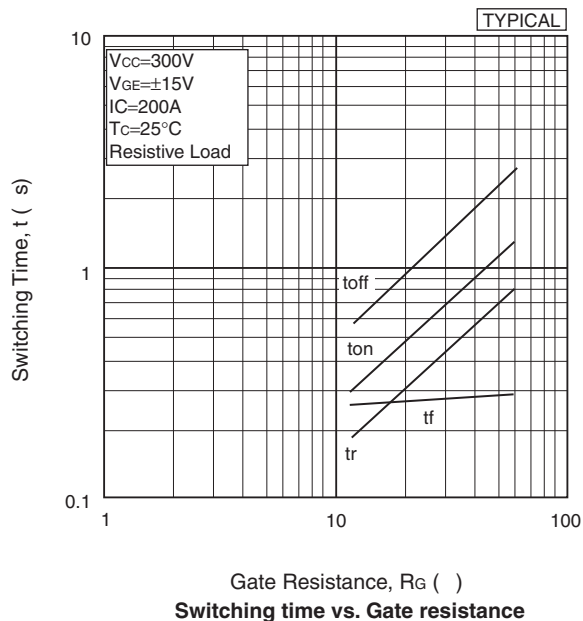
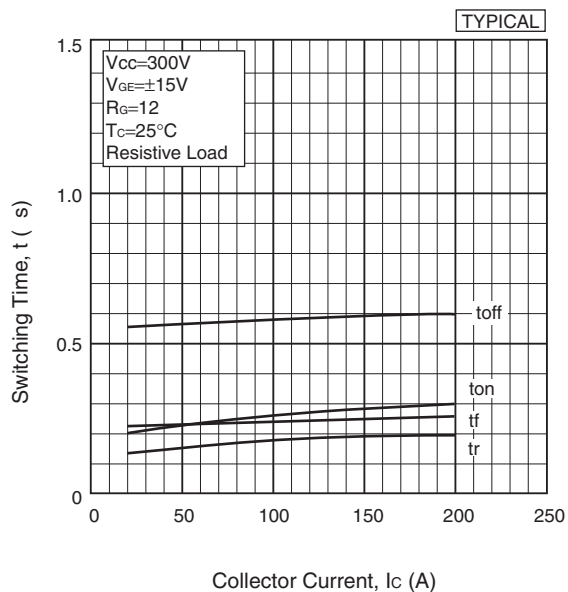
Collector to Emitter voltage vs. Gate to Emitter voltage



Gate charge characteristics



Forward voltage of free-wheeling diode



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