

MBM300GS6AW

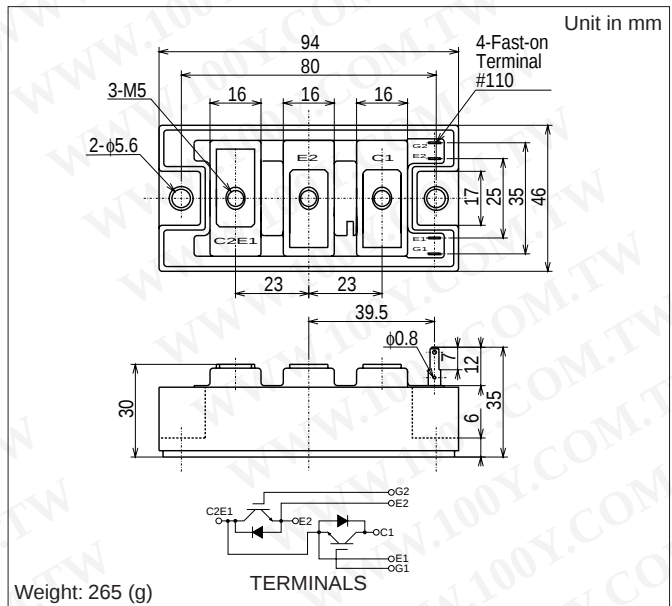
Silicon N-channel IGBT

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).

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
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ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

Item	Symbol	Unit	MBM300GS6AW
Collector Emitter Voltage	V_{CES}	V	600
Gate Emitter Voltage	V_{GES}	V	±20
Collector Current	DC	I_C	300
	1ms	I_{Cp}	600
Forward Current	DC	I_F	300 (1)
	1ms	I_{FM}	600
Collector Power Dissipation	P_C	W	800
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)

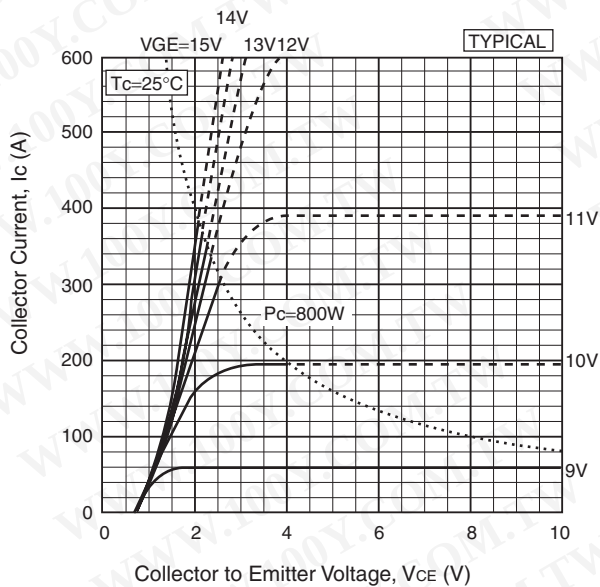
Notes:(1)RMS Current of Diode 90Arms max.

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

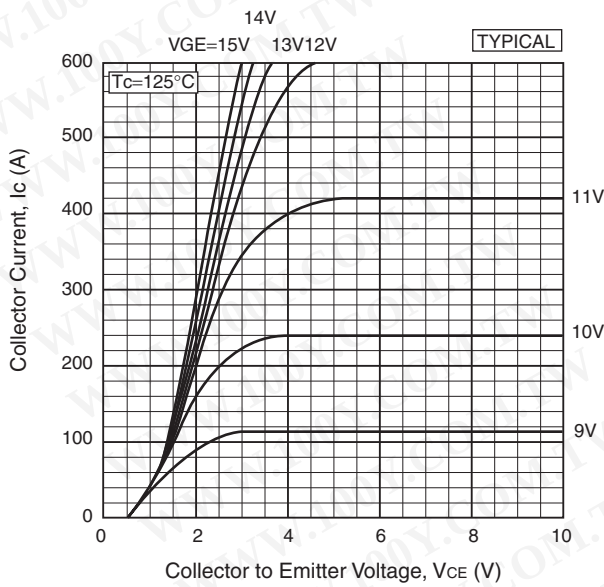
CHARACTERISTICS (Tc=25°C)

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	$I_C=300A, V_{GE}=15V$
Gate Emitter Threshold Voltage	$V_{GE(TH)}$	V	-	-	10	$V_{CE}=5V, I_C=300mA$
Input Capacitance	C_{ies}	pF	-	15,000	-	$V_{CE}=10V, V_{GE}=0V, f=1MHz$
Switching Times	Rise Time	t_r	-	0.25	0.5	$V_{CC}=300V$
	Turn On Time	t_{on}	-	0.35	0.7	$R_L=1.0\Omega$
	Fall Time	t_f	-	0.25	0.35	$R_G=8.2\Omega$ (4)
	Turn Off Time	t_{off}	-	0.8	1.1	$V_{GE}=±15V$
Peak Forward Voltage Drop	V_{FM}	V	-	2.2	3.0	$I_F=300A, V_{GE}=0V$
Reverse Recovery Time	t_{rr}	μs	-	-	0.3	$I_F=300A, V_{GE}=-10V, di/dt=300A/\mu s$
Thermal Impedance	IGBT	$R_{th(j-c)}$	°C/W	-	0.156	Junction to case
	FWD	$R_{th(j-c)}$	°C/W	-	0.28	

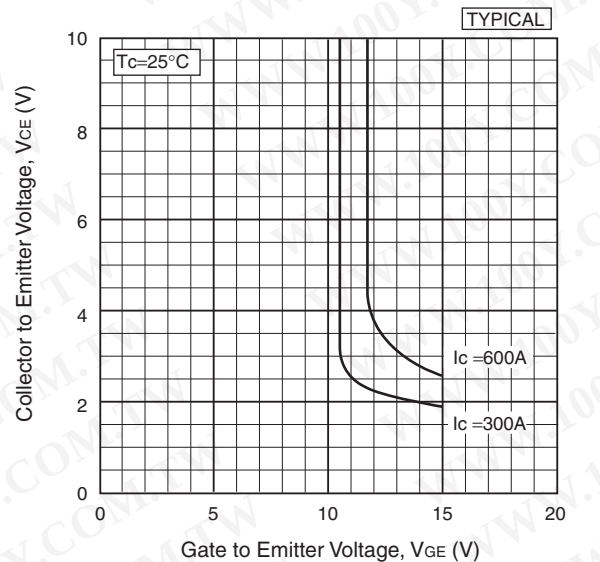
Notes:(4) R_G value is the test condition's value for decision of the switching times, not recommended value.Determine the suitable R_G value after the measurement of switching waveforms (overshoot voltage, etc.) with appliance mounted.



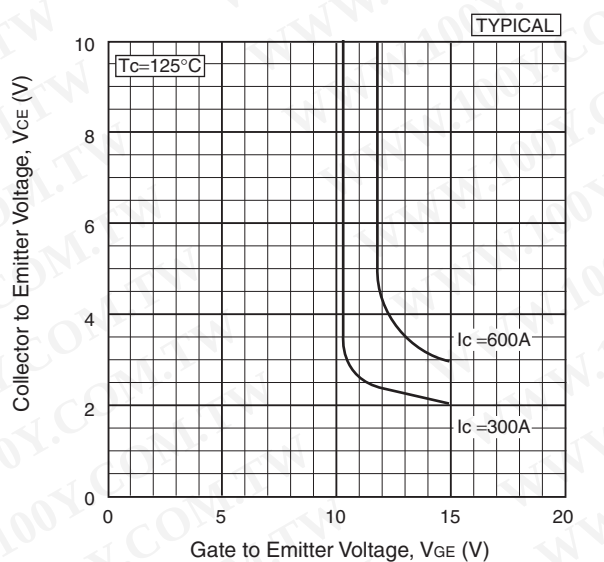
Collector current vs. Collector to Emitter voltage



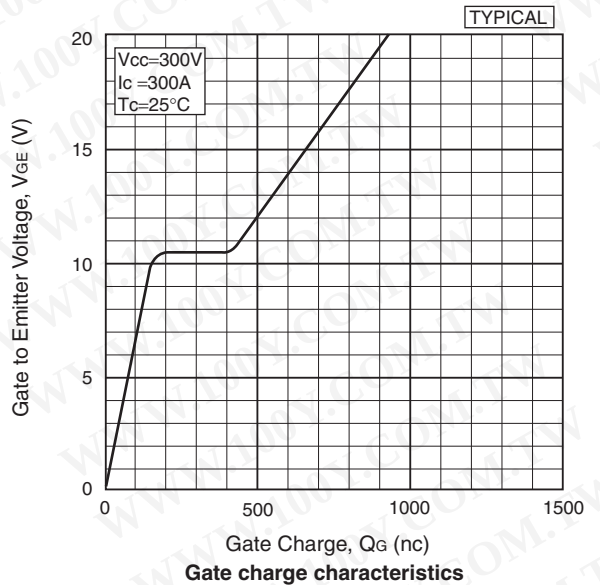
Collector current vs. Collector to Emitter voltage



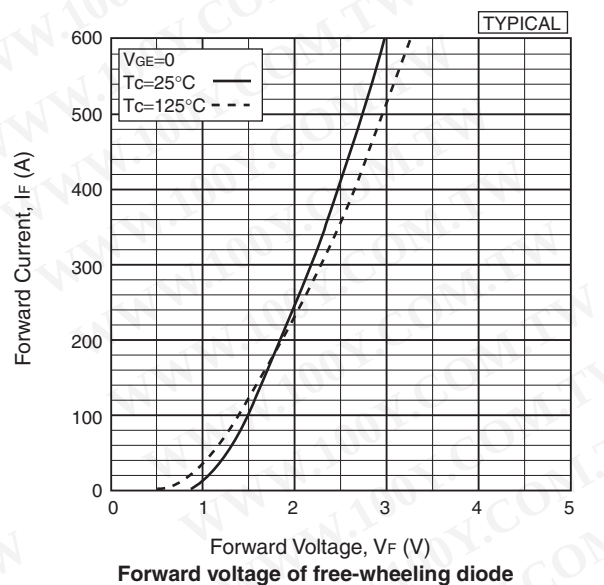
Collector to Emitter voltage vs. Gate to Emitter voltage



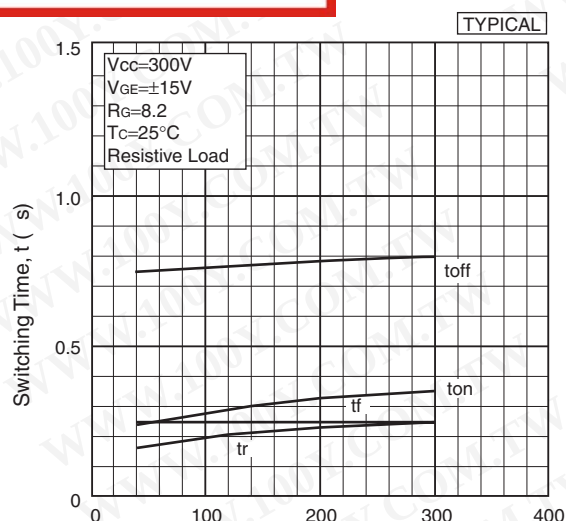
Collector to Emitter voltage vs. Gate to Emitter voltage



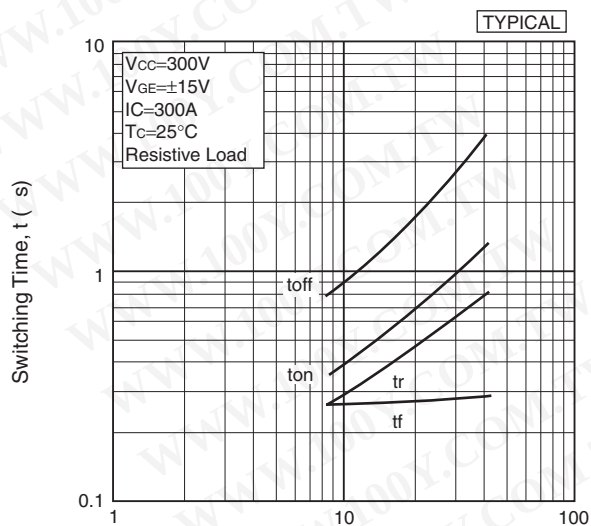
Gate charge characteristics



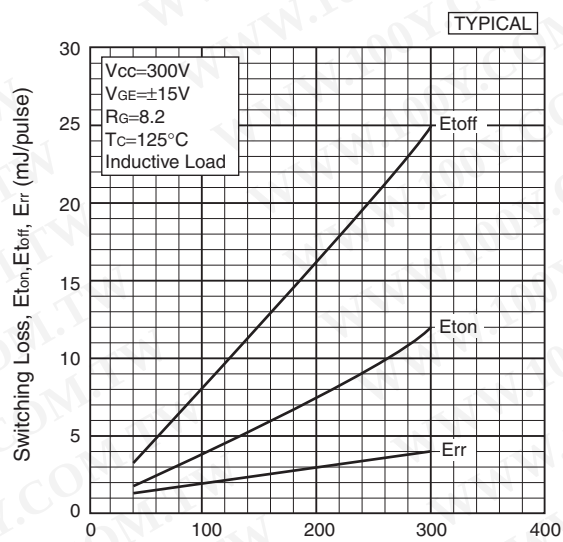
Forward voltage of free-wheeling diode



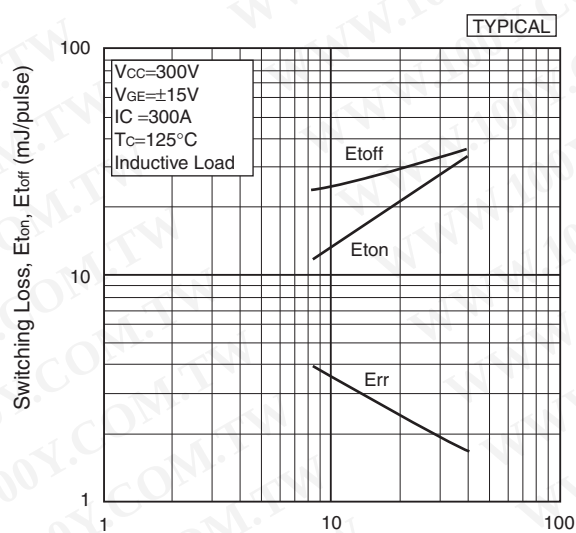
Switching time vs. Collector current



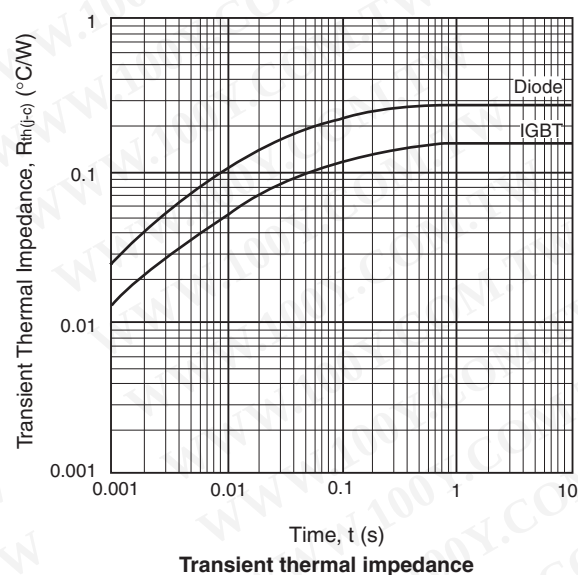
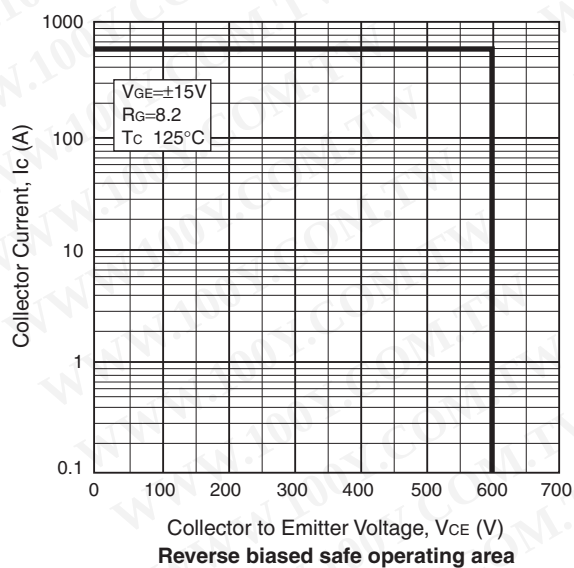
Switching time vs. Gate resistance



Switching loss vs. Collector current



Switching loss vs. Gate resistance



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