

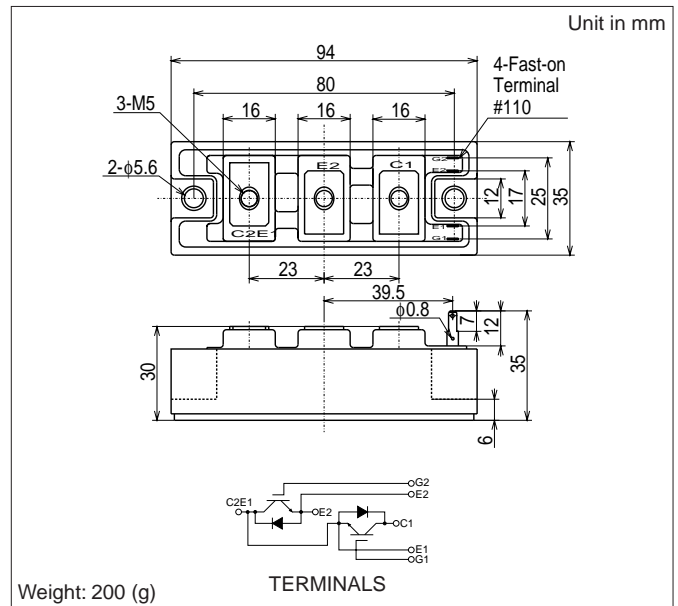
MBM150GS6AW

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)

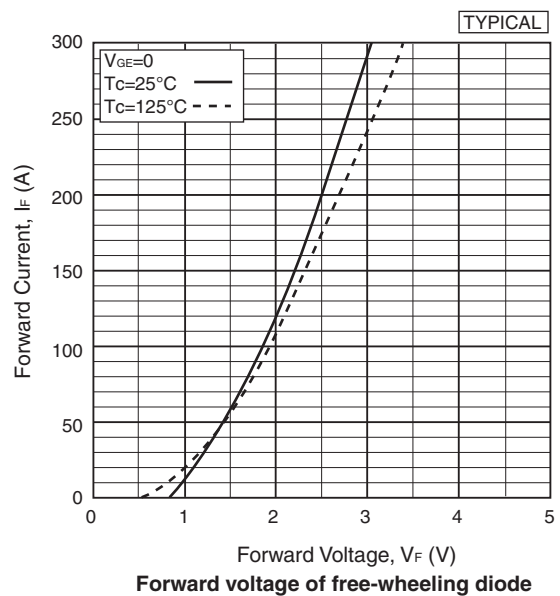
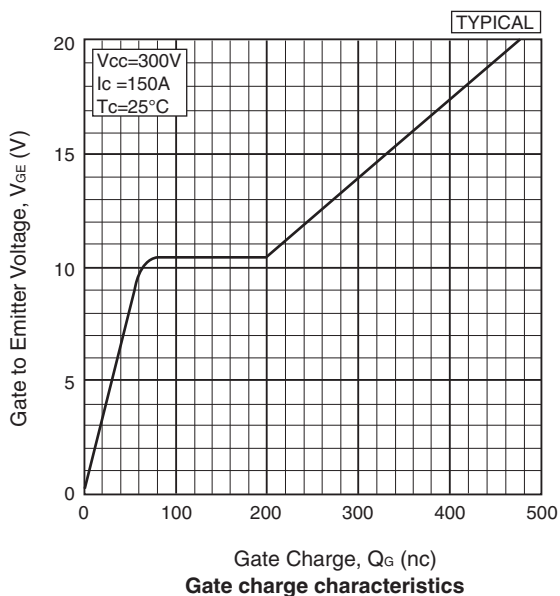
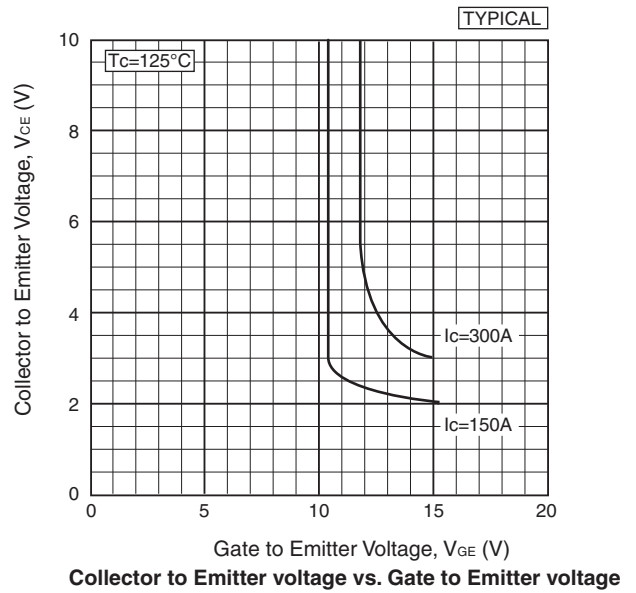
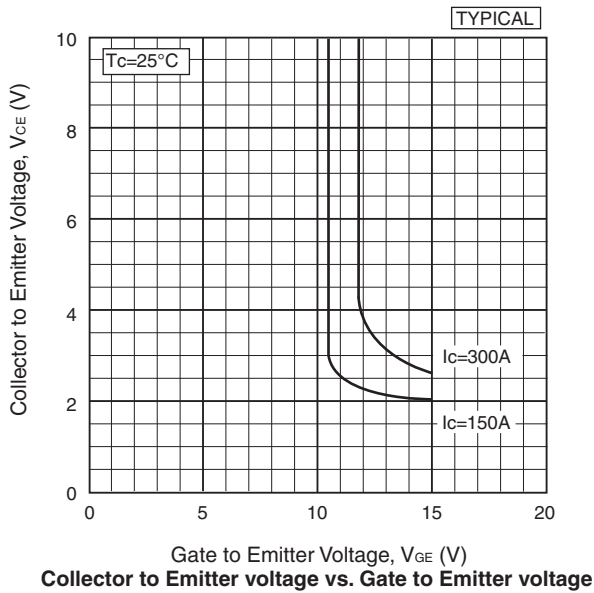
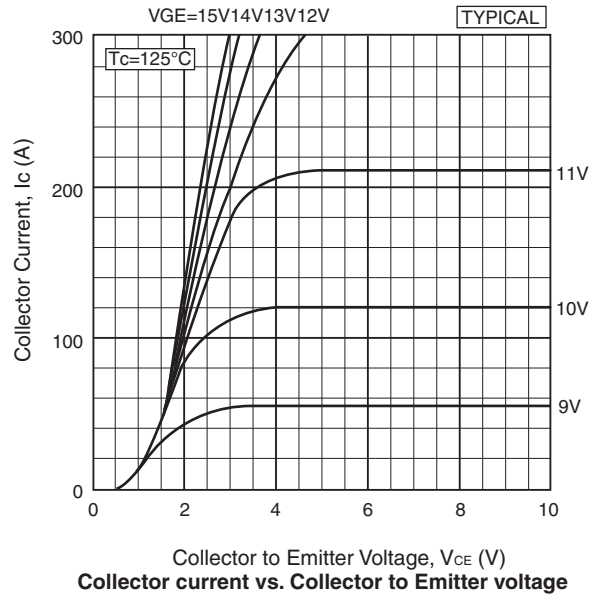
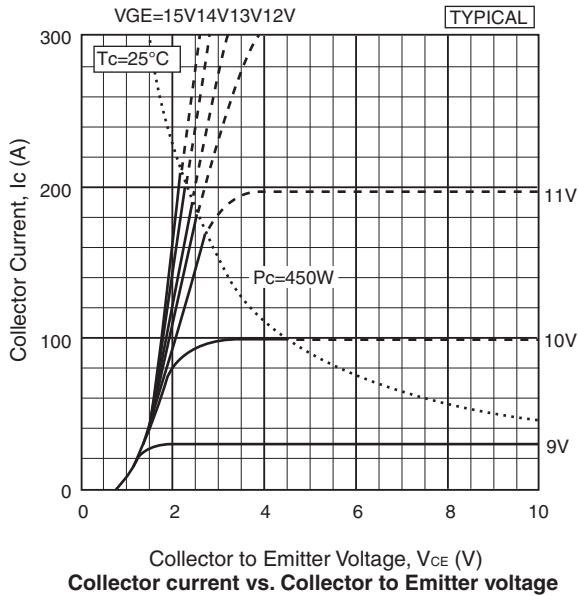
Item	Symbol	Unit	MBM150GS6AW
Collector Emitter Voltage	V _{CES}	V	600
Gate Emitter Voltage	V _{GES}	V	±20
Collector Current	DC	I _c	150 (1)
	1ms	I _{cp}	300
Forward Current	DC	I _F	150
	1ms	I _{FM}	300
Collector Power Dissipation	P _c	W	450
Junction Temperature	T _j	°C	-40 ~ +150
Storage Temperature	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)

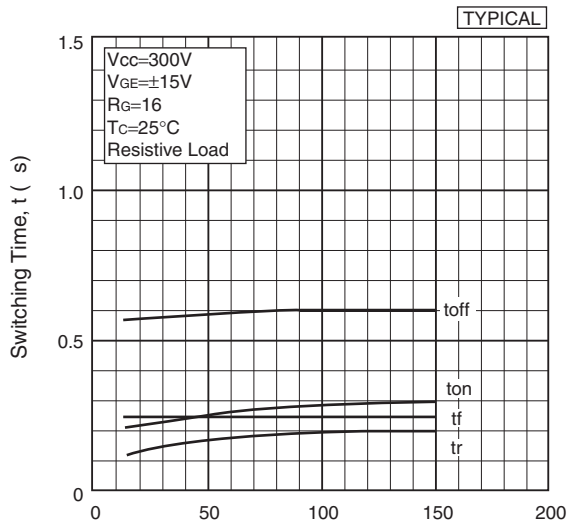
Notes:(1)RMS Current of Diode 45Arms max.
 (2)(3)Recommended Value 1.67N.m(17kgf.cm)

CHARACTERISTICS (T_c=25°C)

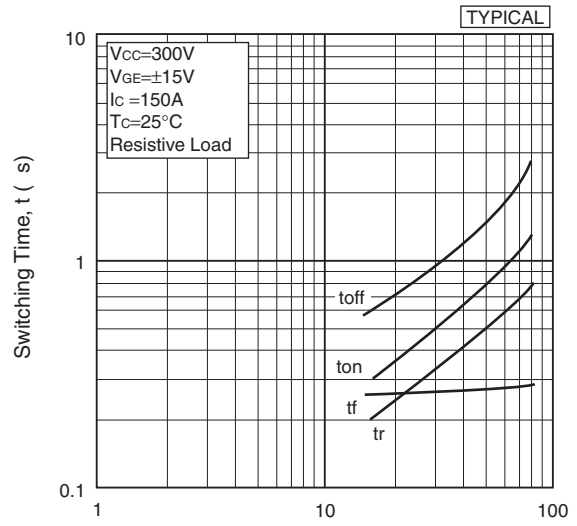
Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions	
Collector Emitter Cut-Off Current	I _{CES}	mA	-	-	1.0	V _{CE} =600V, V _{GE} =0V	
Gate Emitter Leakage Current	I _{GES}	nA	-	-	±500	V _{GE} =±20V, V _{CE} =0V	
Collector Emitter Saturation Voltage	V _{CE(sat)}	V	-	1.9	2.5	I _c =150A, V _{GE} =15V	
Gate Emitter Threshold Voltage	V _{GE(TO)}	V	-	-	10	V _{CE} =5V, I _c =150mA	
Input Capacitance	C _{ies}	pF	-	7,400	-	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 =2.0Ω	
	Fall Time	t _f	-	0.25	0.35	R _G =16Ω (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 =150A, V _{GE} =0V	
Reverse Recovery Time	t _{rr}	μs	-	-	0.3	I _F =150A, V _{GE} =-10V, di/dt=200A/μs	
Thermal Impedance	IGBT	IGBT	R _{th(j-c)}	-	-	0.28	Junction to case
	FWD	FWD		-	-	0.6	

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.

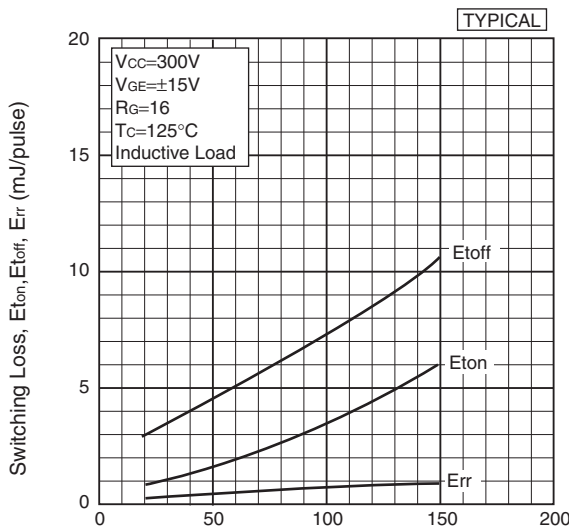




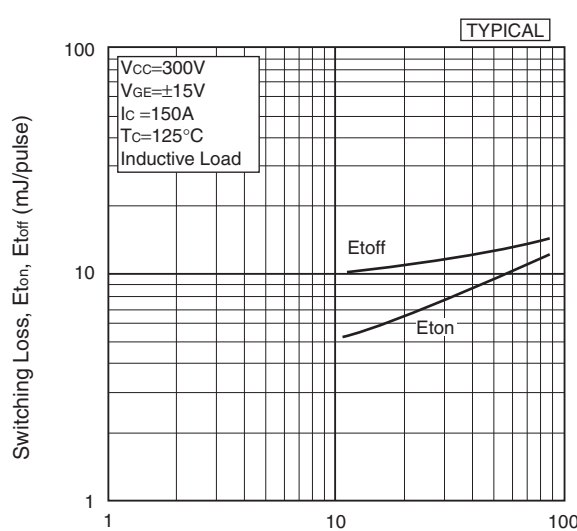
Switching time vs. Collector current



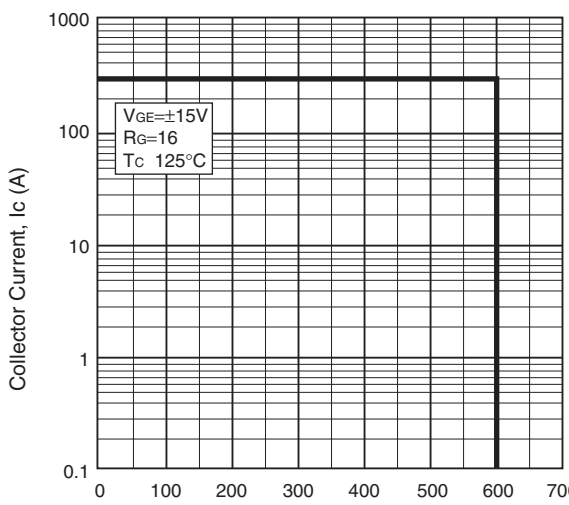
Switching time vs. Gate resistance



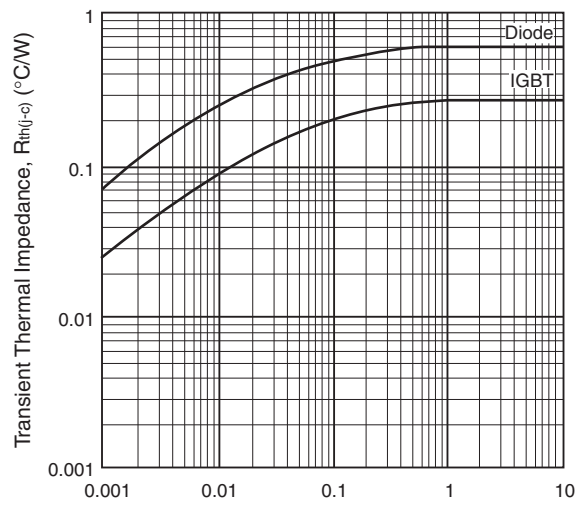
Switching loss vs. Collector current



Switching loss vs. Gate resistance



Reverse biased safe operating area



Transient thermal impedance

HITACHI POWER SEMICONDUCTORS

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