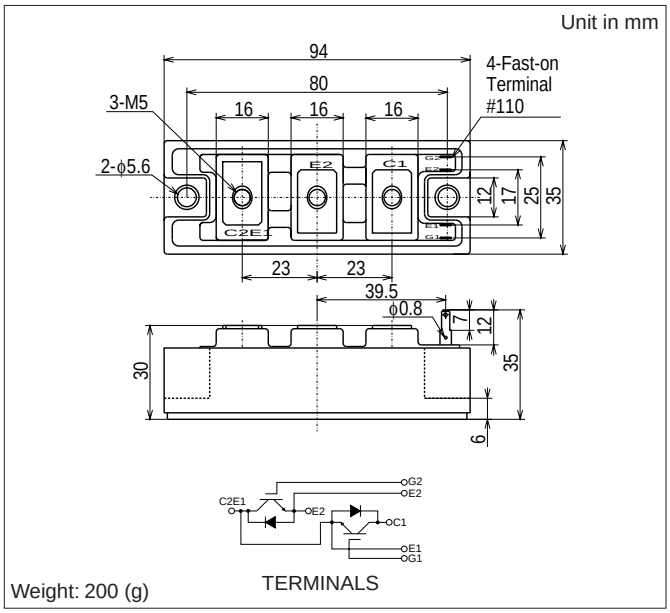
MBM150GS6AW

Silicon N-channel IGBT

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).

OUTLINE DRAWING



ABSOLUTE MAXIMUM RATINGS (Tc=25°C)

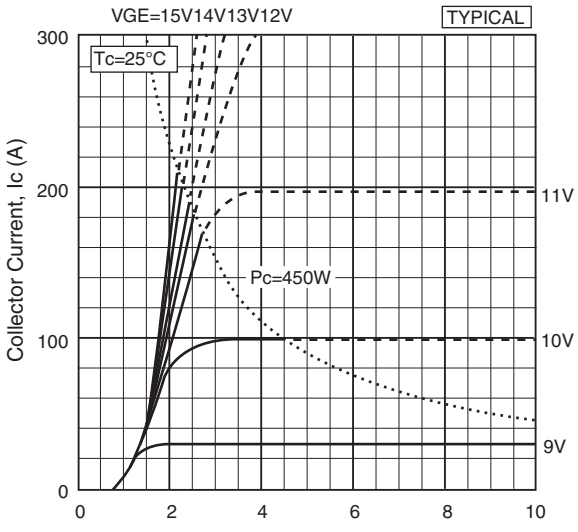
Item		Symbol	Unit	MBM150GS6AW	
Collector Emitter Voltage		V_{CES}	V	600	
Gate Emitter Voltage		V_{GES}	V	±20	
Collector Current	DC	I_C	A	150	(1)
	1ms	I_{Cp}		300	
Forward Current	DC	I_F	A	150	
	1ms	I_{FM}		300	
Collector Power Dissipation		Pc	W	450	
Junction Temperature		T_j	°C	-40 ~ +150	
Storage Temperature		T_{stg}	°C	-40 ~ +125	
Isolation Voltage		V_{ISO}	V_{RMS}	2,500(AC 1 minute)	
Screw Torque	Terminals	-	N.m (kgf.cm)	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 (Tc=25°C)

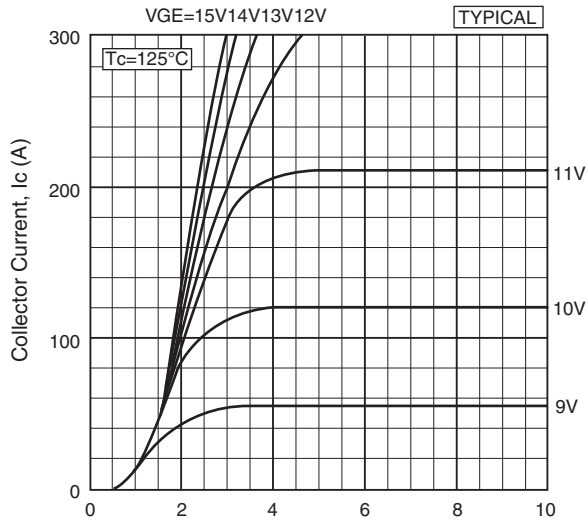
Item		Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Collector Emitter Cut-Off Current		I_{CES}	mA	-	-	1.0	V_{CE}=600V,V_{GE}=0V
Gate Emitter Leakage Current		I_{GES}	nA	-	-	±500	V_{GE}=±20V,V_{CE}=0V
Collector Emitter Saturation Voltage		$V_{CE(sat)}$	V	-	1.9	2.5	I_C=150A,V_{GE}=15V
Gate Emitter Threshold 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	μs	-	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	Rth(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.



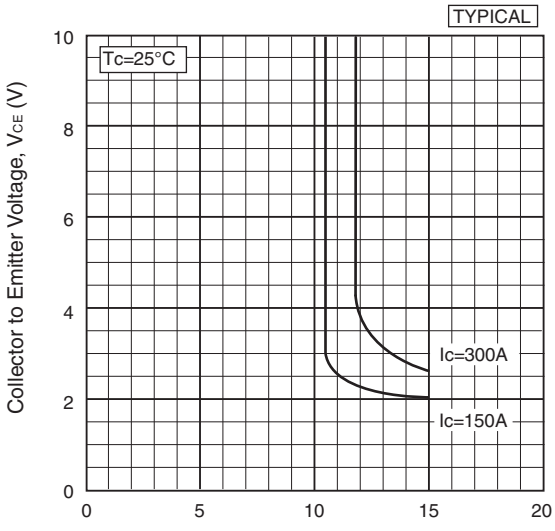
Collector to Emitter Voltage, V_{CE} (V)

Collector current vs. Collector to Emitter voltage



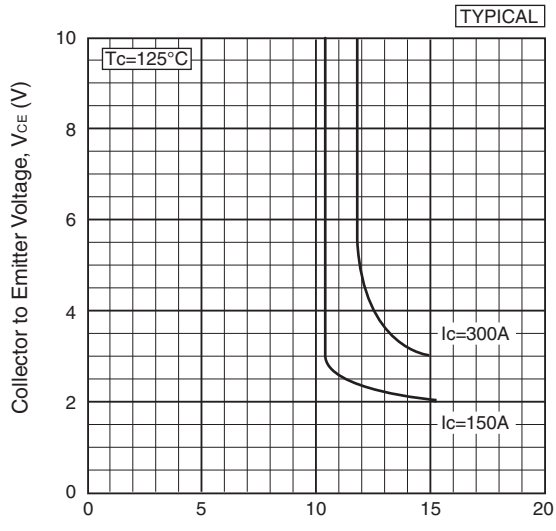
Collector to Emitter Voltage, V_{CE} (V)

Collector current vs. Collector to Emitter voltage



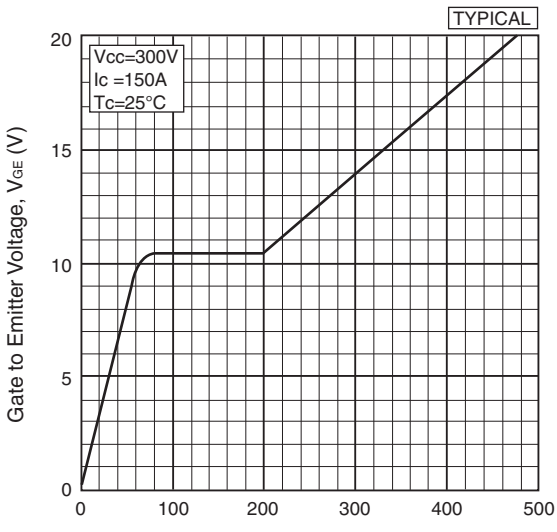
Gate to Emitter Voltage, V_{GE} (V)

Collector to Emitter voltage vs. Gate to Emitter voltage



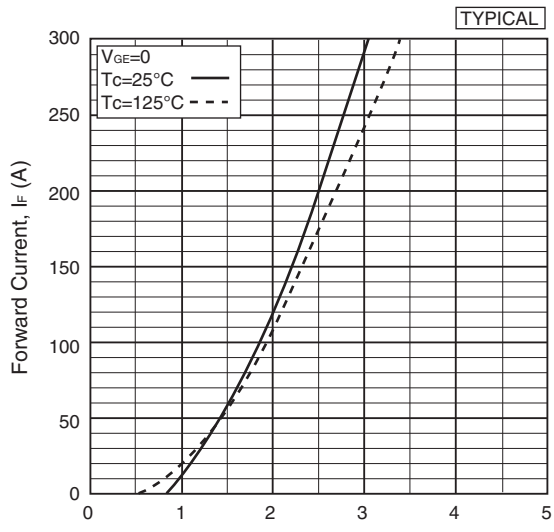
Gate to Emitter Voltage, V_{GE} (V)

Collector to Emitter voltage vs. Gate to Emitter voltage



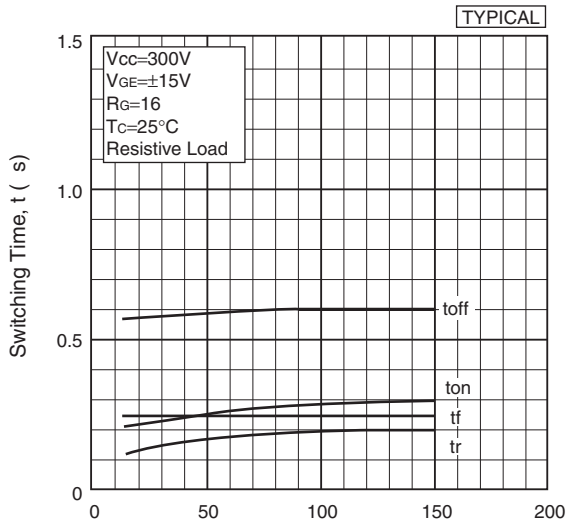
Gate Charge, Q_G (nc)

Gate charge characteristics

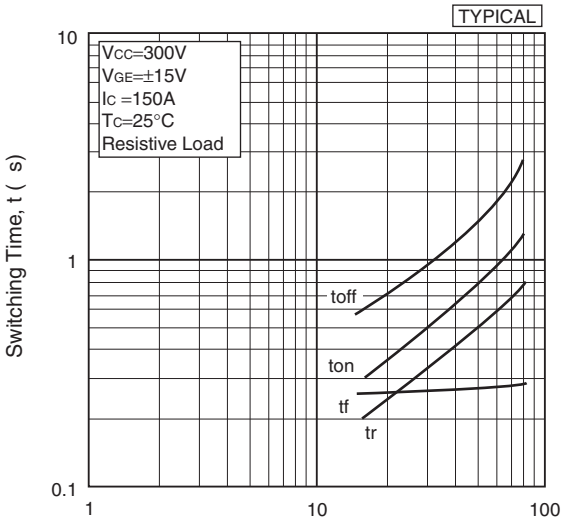


Forward Voltage, V_F (V)

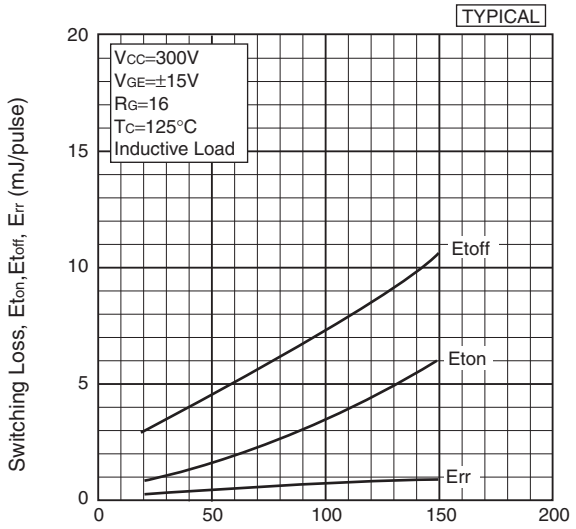
Forward voltage of free-wheeling diode



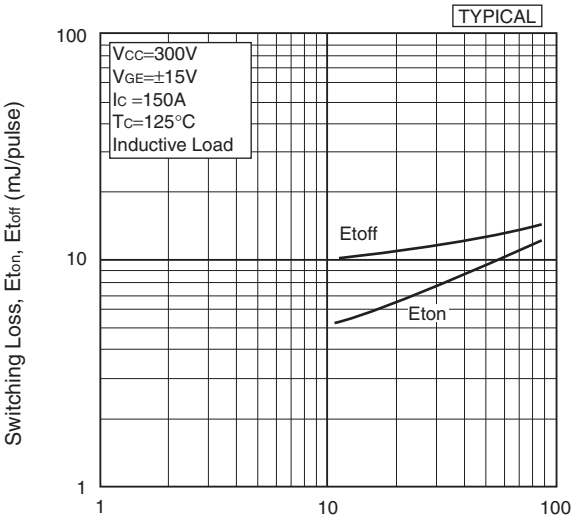
Switching time vs. Collector current



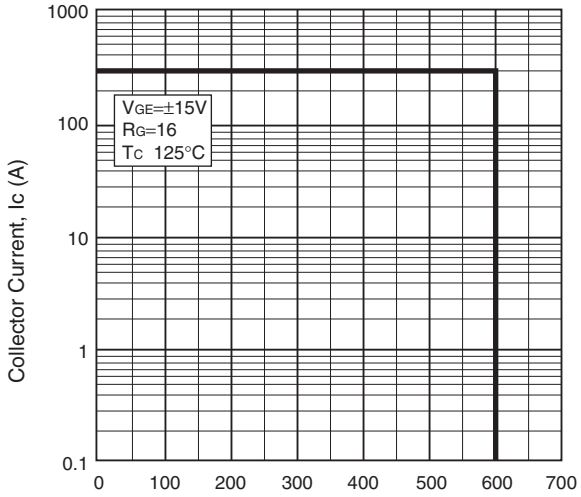
Switching time vs. Gate resistance



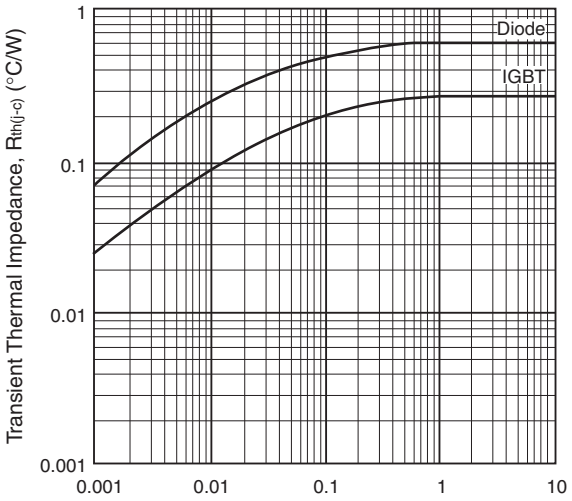
Switching loss vs. Collector current



Switching loss vs. Gate resistance



Reverse biased safe operating area



Transient thermal impedance

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