

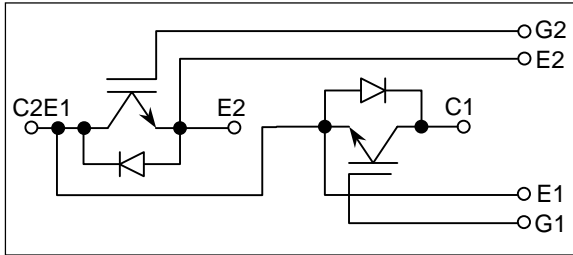
MBM300GR12A

[Rated 300A/1200V, Dual-pack type]

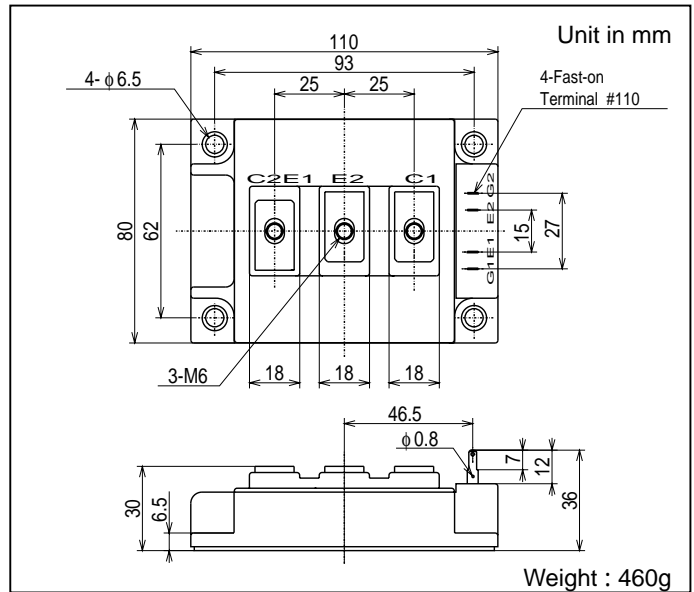
FEATURES

- Low saturation voltage and high speed.
- Low turn-OFF switching loss.
- Low noise due to built-in free-wheeling diode.
(Ultra Soft and Fast recovery Diode (USFD))
- High reliability structure.
- Isolated heat sink (terminals to base).

CIRCUIT DIAGRAM



OUTLINE DRAWING



ABSOLUTE MAXIMUM RATINGS (T_c=25°C)

Item	Symbol	Unit	Value
Collector-Emitter Voltage	V _{CES}	V	1200
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	1980
Junction Temperature	T _j	°C	-40 ~ +150
Storage Temperature	T _{stg}	°C	-40 ~ +125
Isolation Voltage	V _{iso}	V _{RMS}	2500(AC 1 minute)
Screw Torque	Terminals	—	2.94 ^{*2}
	Mounting		2.94 ^{*3}

Notes; *1 : RMS current of diode ≤ 90 Arms

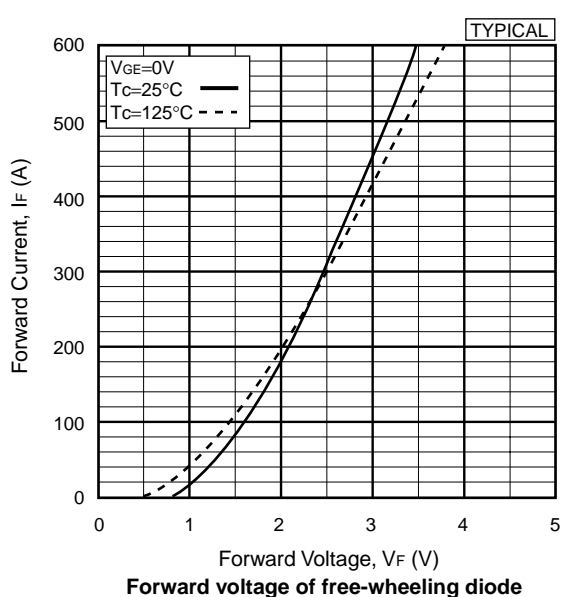
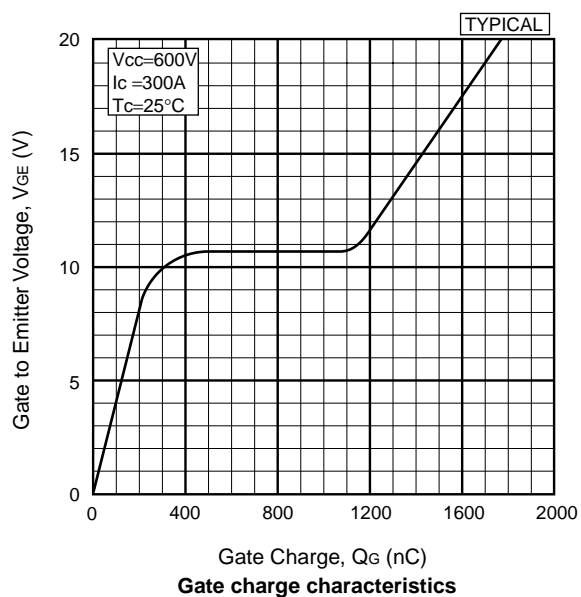
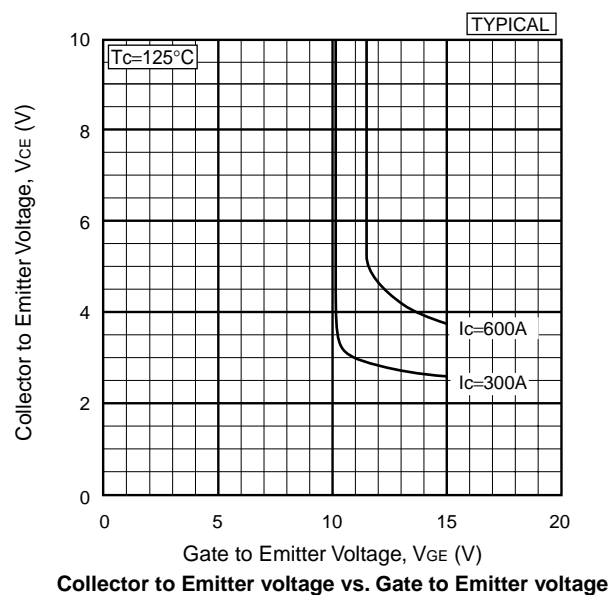
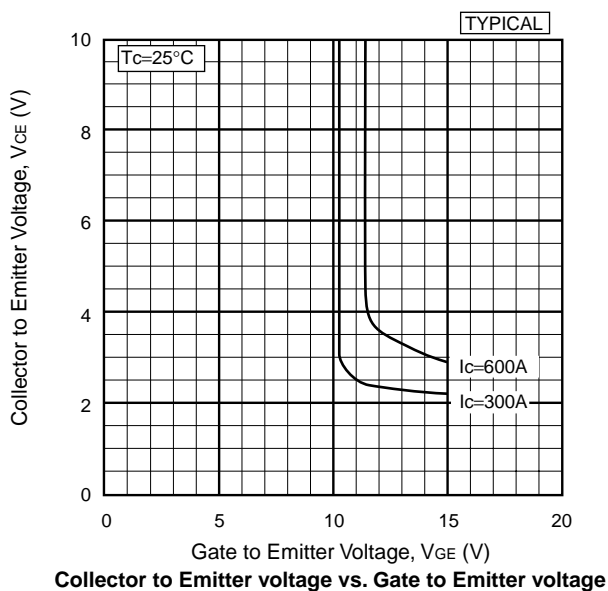
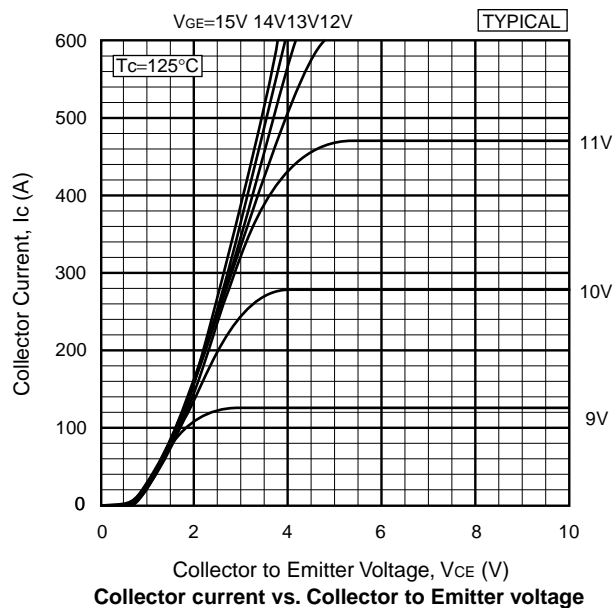
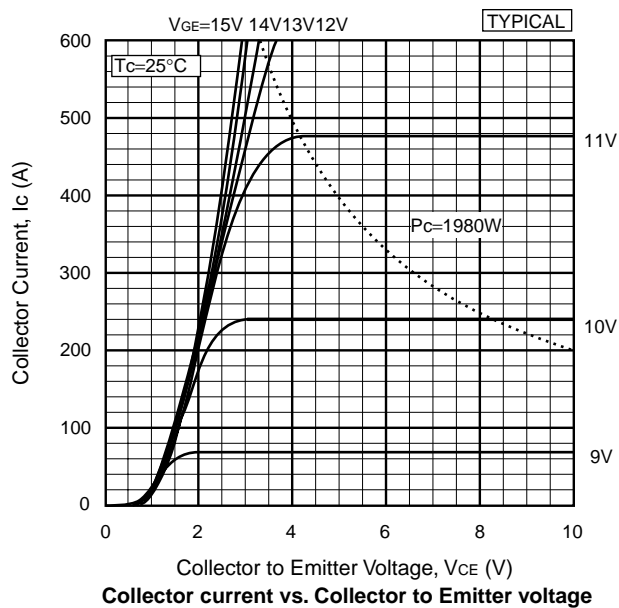
*2, *3 : Recommended value 2.45 N·m

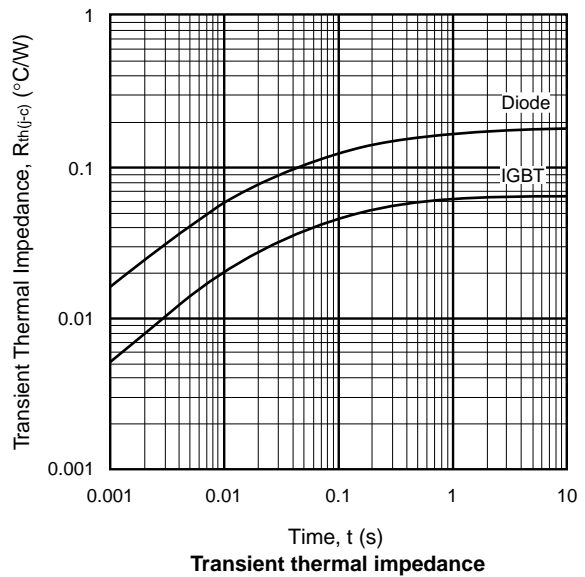
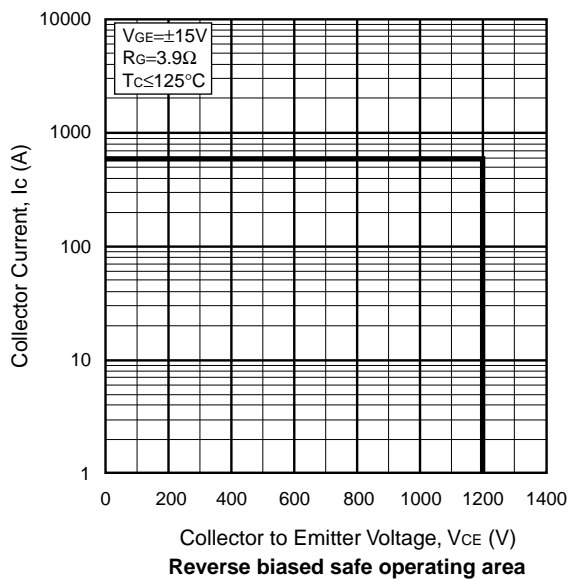
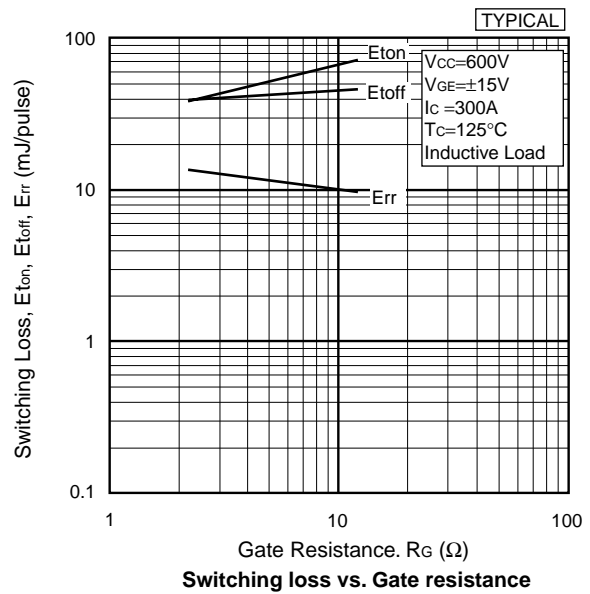
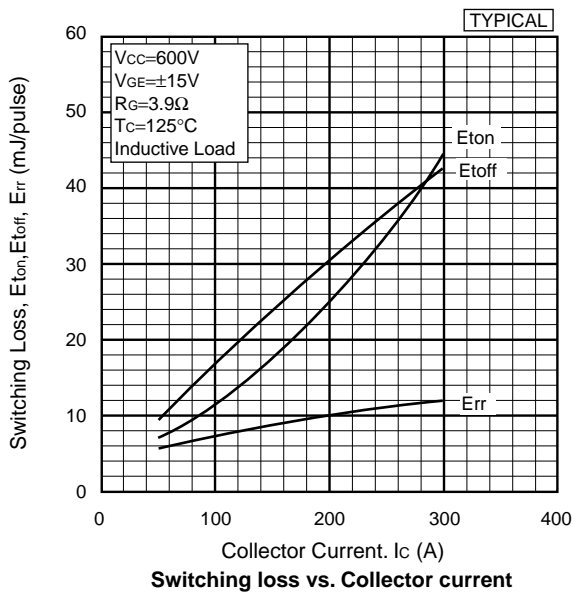
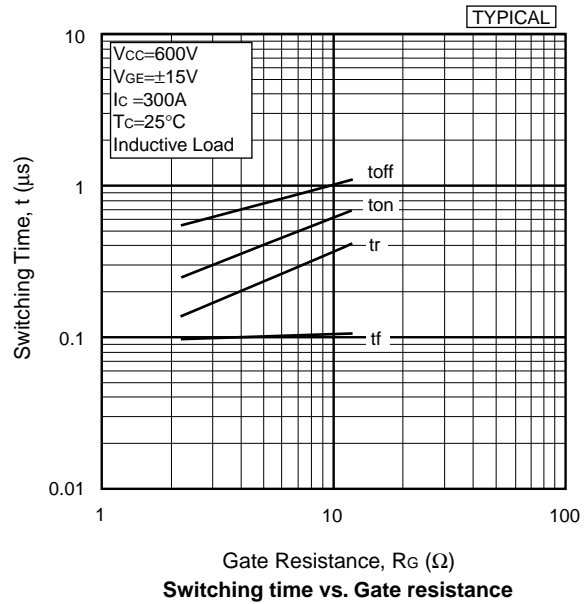
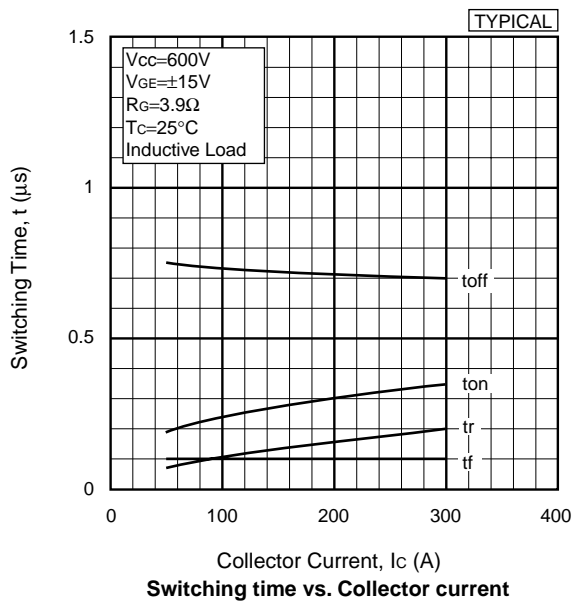
CHARACTERISTICS (T_c=25°C)

Item	Symbol	Unit	Min.	Typ.	Max.	Test Conditions
Collector-Emitter Cut-Off Current	I _{CES}	mA	—	—	1.0	V _{CE} =1200V, 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	—	2.2	2.8	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	—	24000	—	V _{CE} =10V, V _{GE} =0V, f=1MHz
Switching Times	Rise Time	t _r	—	0.2	0.5	V _{CC} =600V, I _C =300A R _G =3.9Ω ^{*4} V _{GE} =±15V Inductive Load I _F =300A
	Turn-On Time	t _{on}	—	0.35	0.7	
	Fall Time	t _f	—	0.1	0.3	
	Turn-Off Time	t _{off}	—	0.7	1.1	
Reverse Recovery Time	t _{rr}	μs	—	0.2	0.4	
Peak Forward Voltage Drop	V _{FM}	V	—	2.5	3.5	I _F =300A, V _{GE} =0V
Thermal Impedance	IGBT	R _{th(j-c)}	°C/W	—	0.063	Junction to case
	FWD	R _{th(j-c)}			0.18	

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

Remark; For actual application, please confirm this spec. sheet is the newest revision.





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