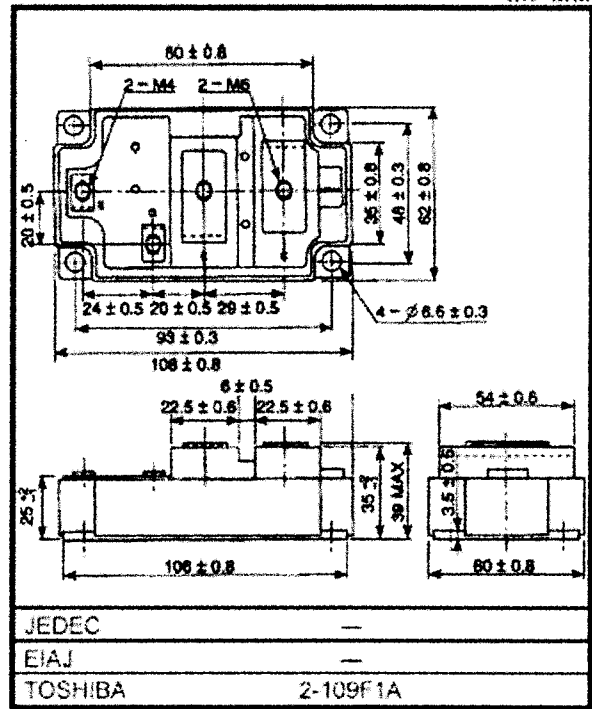
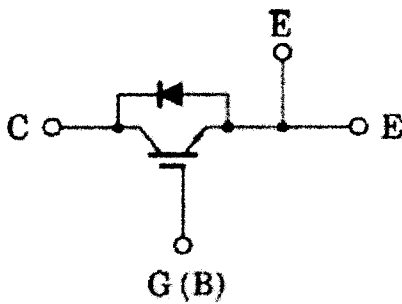


TOSHIBA GTR MODULE SILICON N CHANNEL IGBT
MG400Q1US65H

○ HIGH POWER & HIGH SPEED SWITCHING APPLICATIONS

- High Input impedance
- Enhancement-Mode
- The Electrodes are Isolated from Case.

Equivalent Circuit



Weight: 465g

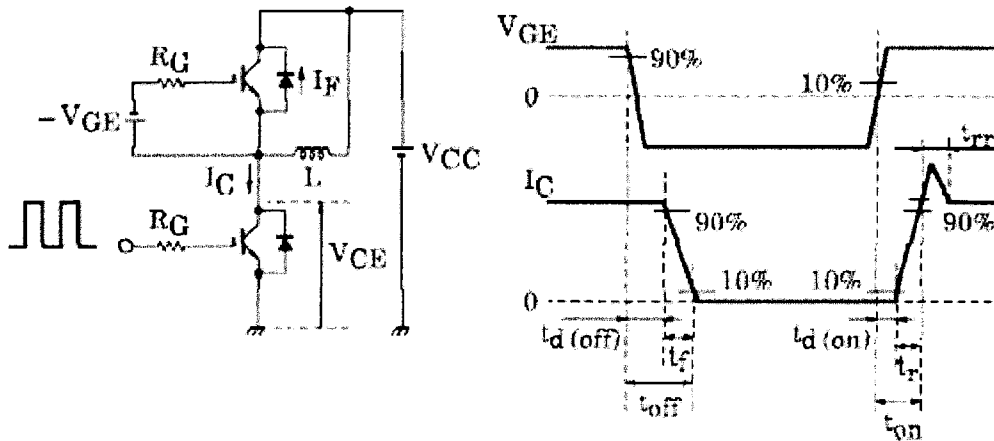
MAXIMUM RATINGS (Ta=25°C)

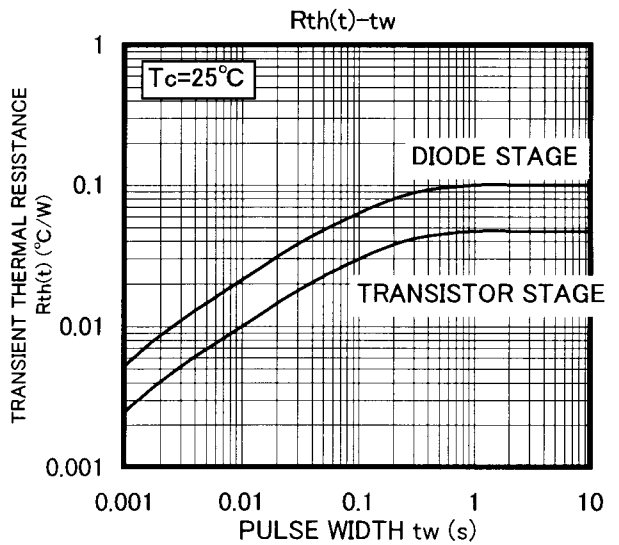
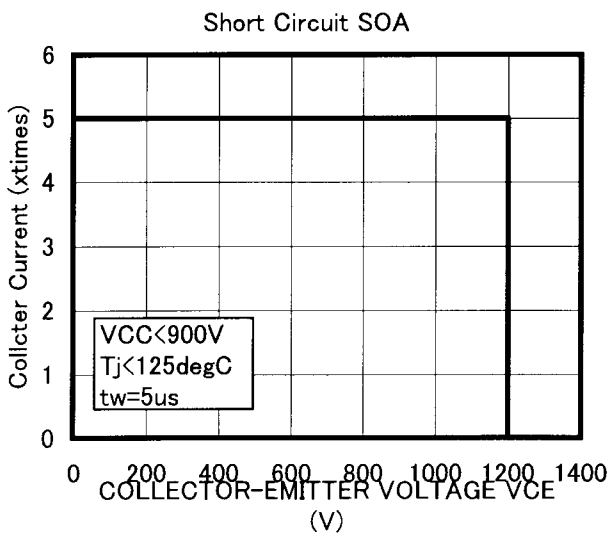
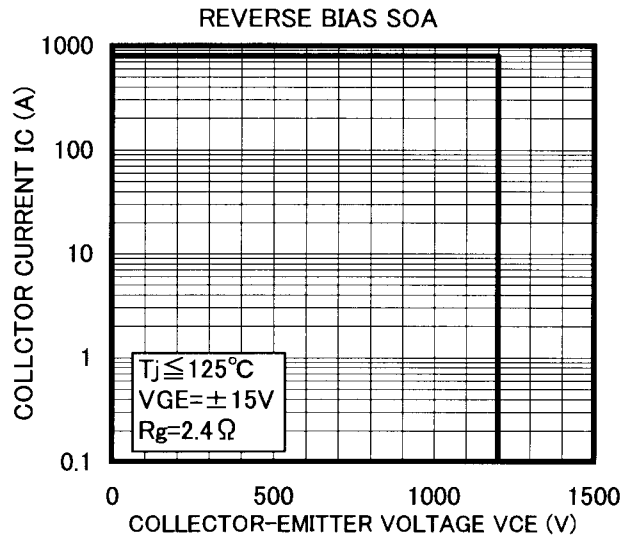
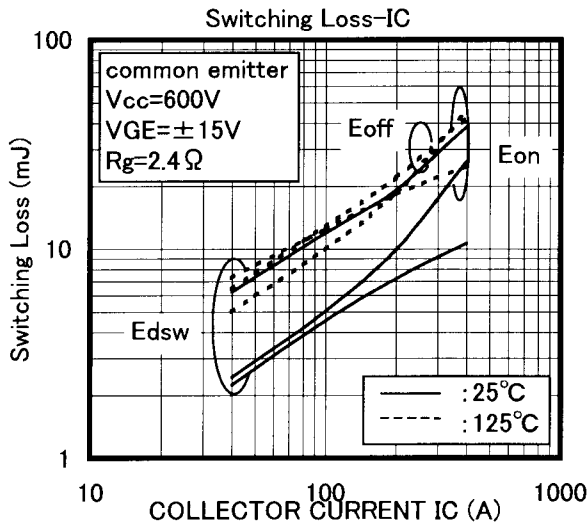
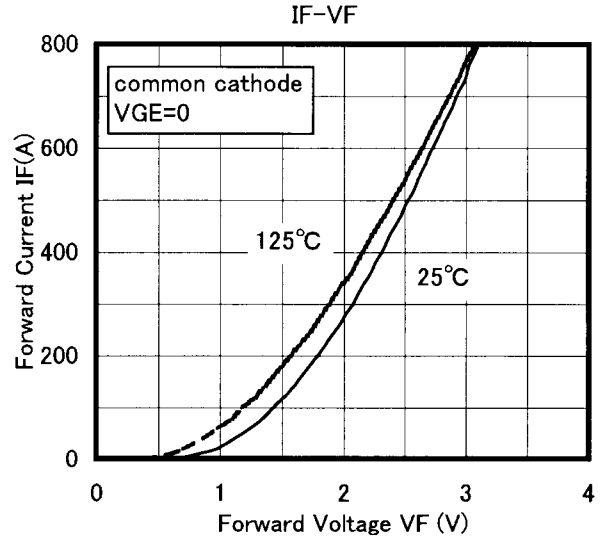
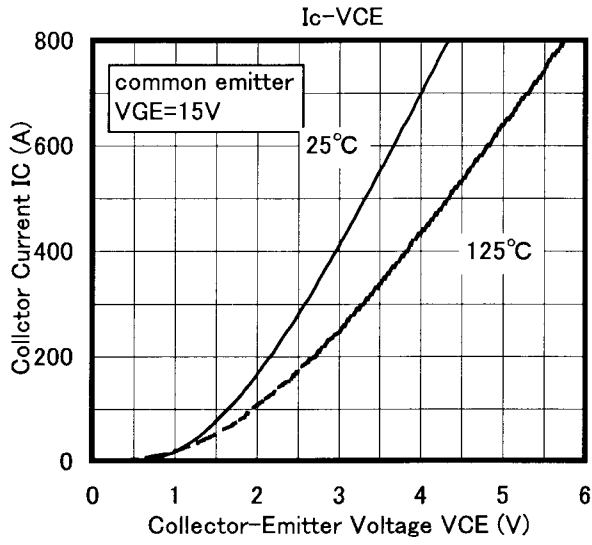
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	VCES	1200	V
Gate-Emitter voltage	VGES	±20	V
Collector Current	DC	Ic	400
	1ms	Icp	800
Forward Current	DC	IF	400
	1ms	IFM	800
Collector Power Dissipation (Tc=25°C)	Pc	2650	W
Junction Temperature	Tj	150	°C
Storage Temperature Range	Tstg	-40~125	°C
Isolation Voltage	VIsol	2500 (AC1minutes)	V
Screw Torque	Terminal	—	3
	Mounting	—	3
			N·m

ELECTRICAL CHARACTERISTICS(T_a=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		IGES	VGE=±20V, VCE=0	—	—	±500	nA
Collector Cut-Off Current		ICES	VCE=1200V, VGE=0	—	—	4.0	mA
Gate-Emitter Cut-Off Voltage		VGE(OFF)	VCE=5V, Ic=400mA	4.0	—	7.0	V
Collector-Emitter Saturation Voltage		VCE(sat)	Ic=400A, VGE=15V, Tc=25°C	—	3.0	4.0	V
			Ic=400A, VGE=15V, Tc=125°C	—	3.6	—	
Input Capacitance		Cies	VCE=10V, VGE=0, f=1MHz	—	—	—	pF
Switching Time	Turn-on delay Time	td(on)	Inductive Load Vcc=600V Ic=400A VGE=±15V RG=2.4Ω	—	0.05	—	μs
	Rise Time	tr		—	0.05	—	
	Turn-on Time	ton		—	0.10	—	
	Turn-off delay Time	td(off)		—	0.55	—	
	Fall Time	tf		—	0.05	0.15	
	Turn-Off Time	toff		—	0.60	—	
Forward Voltage		VF	IF=400A, VGE=0	—	2.4	3.5	V
Reverse Recovery Time		trr	IF=400A, VGE=-10V di/dt=1000A/μs	—	0.25	—	μs
Thermal Resistance	Transistor Stage	Rth(j-c)		—	—	0.047	°C/W
	Diode Stage			—	—	0.1	
Switching Loss	Turn-on	Eon	Inductive Load Vcc=600V, Ic=400A VGE=±15V, TG=2.4Ω Tc=125°C	—	40	—	mJ
	Turn-Off	Eoff		—	40	—	

(Note) : Switching time measurement circuit and input/output waveforms





RESTRICTIONS ON PRODUCT USE

000707EAA

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- The Information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.