

**TOSHIBA SEMICONDUCTOR**  
TECHNICAL DATA

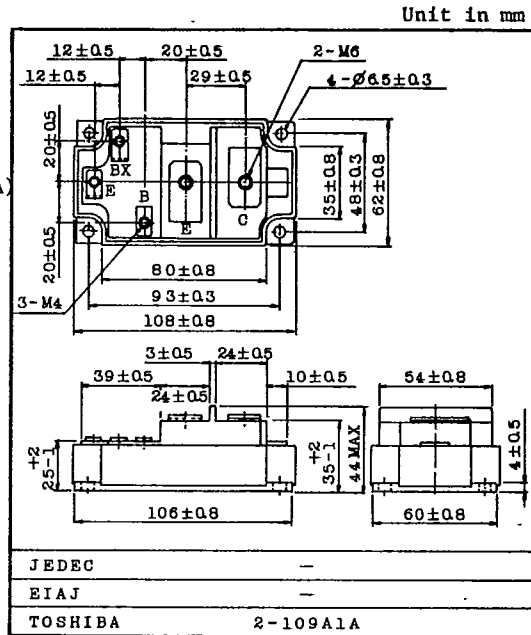
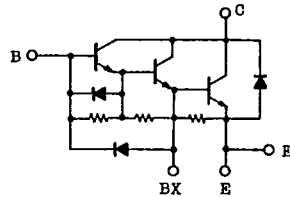
TOSHIBA GTR MODULE  
MG200M1UK1  
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.  
MOTOR CONTROL APPLICATIONS.

FEATURES:

- . The Collector is Isolated from Case.
- . With Built-in Free Wheeling Diode
- . High DC Current Gain:  $h_{FE}=100(\text{Min.})(I_C=200A)$
- . Low Saturation Voltage  
:  $V_{CE(sat)}=2.5V(\text{Max.})(I_C=200A)$
- . Excellent Collector Balance by Direct Parallel Connection of Each All Terminals.

EQUIVALENT CIRCUIT



Weight :

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	VCBO	1000	V
Collector-Emitter Sustaining Voltage	VCEX(SUS)	1000	V
	VCEO(SUS)	880	
Emitter-Base Voltage	VEBO	7	V
Collector Current	DC	IC	A
	lms	ICP	
Forward Current	DC	IF	A
	lms	IFM	
Base Current	IB	20	A
Collector Power Dissipation (Tc=25°C)	PC	1400	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-40~125	°C
Isolation Voltage	VIsol	2500 (AC 1 Minute)	V
Screw Torque (Terminal M4/M6/Mounting)	-	20/30/30	kg·cm

MG200M1UK1

TOSHIBA CORPORATION

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## TECHNICAL DATA

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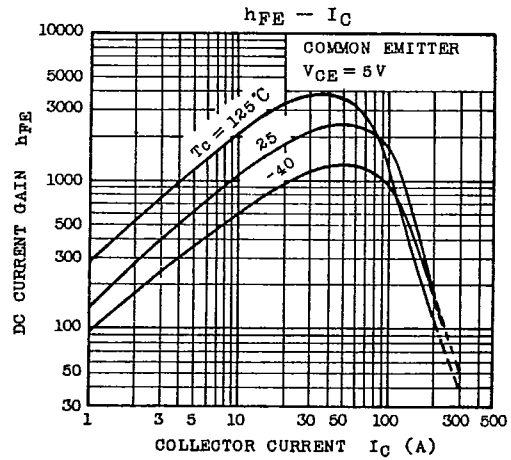
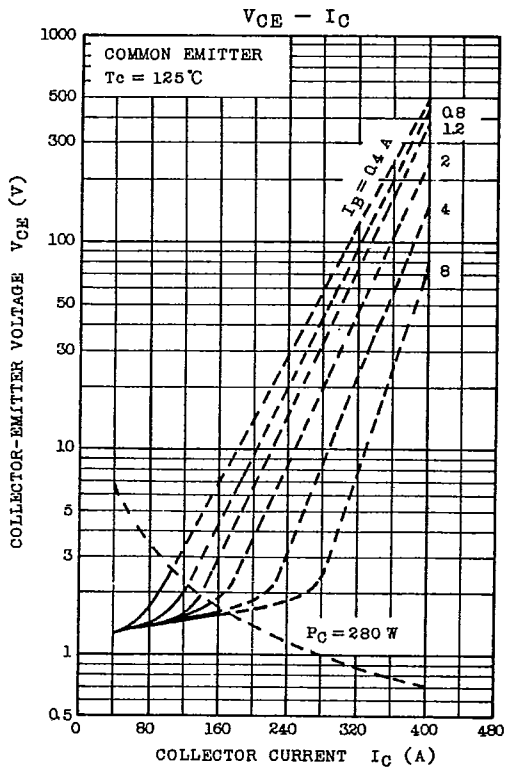
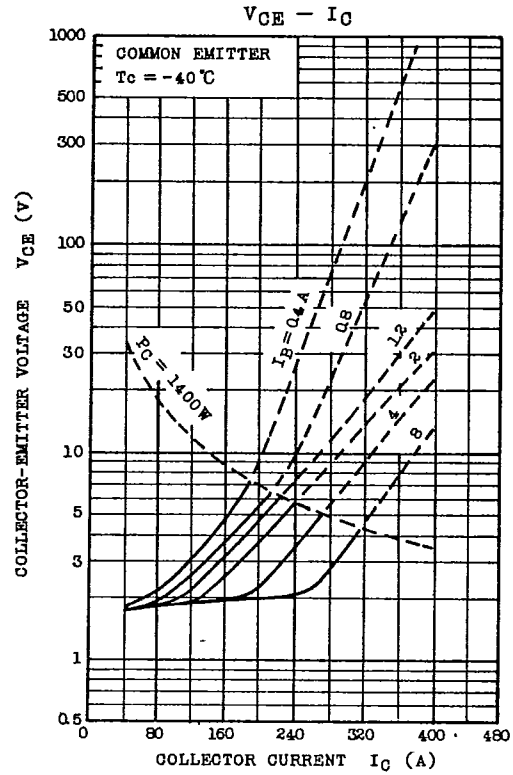
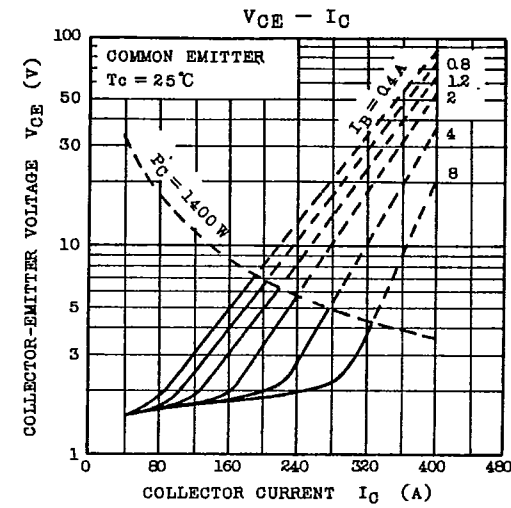
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> =1000V, I <sub>E</sub> =0	-	-	8	mA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> =7V, I <sub>C</sub> =0	-	-	800	mA
Collector-Emitter Sustaining Voltage		V <sub>CEO(SUS)</sub>	I <sub>C</sub> =1A, L=40mH	880	-	-	V
DC Current Gain		h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =200A	100	-	-	
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =200A, I <sub>B</sub> =4A	-	-	2.5	V
Base-Emitter Saturation Voltage		V <sub>BE(sat)</sub>		-	-	3.5	V
Switching Time	Turn-on Time	t <sub>on</sub>	<p>INPUT</p> <p>OUTPUT</p> <p>50µs</p> <p>I<sub>B1</sub></p> <p>I<sub>B2</sub></p> <p>V<sub>CC</sub>=600V</p> <p>5C</p>	-	-	2.0	µs
	Storage Time	t <sub>stg</sub>		-	-	15	
	Fall Time	t <sub>f</sub>		I <sub>B1</sub> =-I <sub>B2</sub> =4A DUTY CYCLE=0.5%	-	-	
Forward Voltage		V <sub>F</sub>	I <sub>F</sub> =200A, I <sub>B</sub> =0	-	-	1.8	V
Reverse Recovery Time		t <sub>rr</sub>	I <sub>F</sub> =200A, V <sub>BE</sub> =-3V di/dt=100A/µs	-	-	1.0	µs
Thermal Resistance		R <sub>th(j-c)</sub>	Transistor	-	-	0.089	°C/W
			Diode	-	-	0.325	

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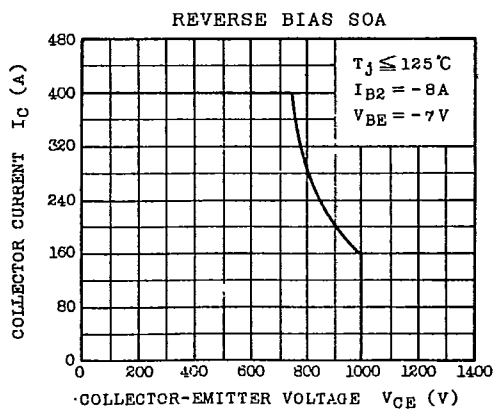
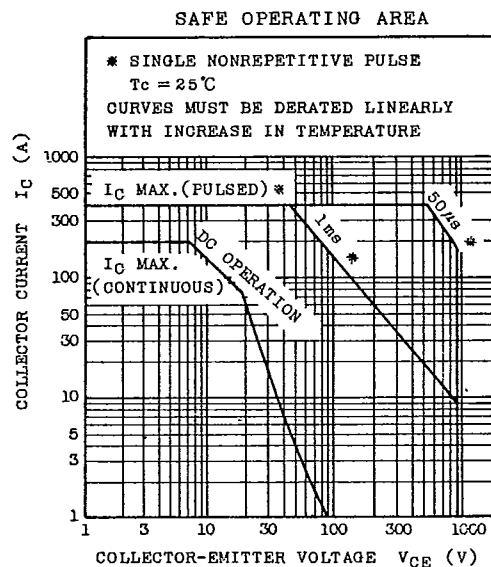
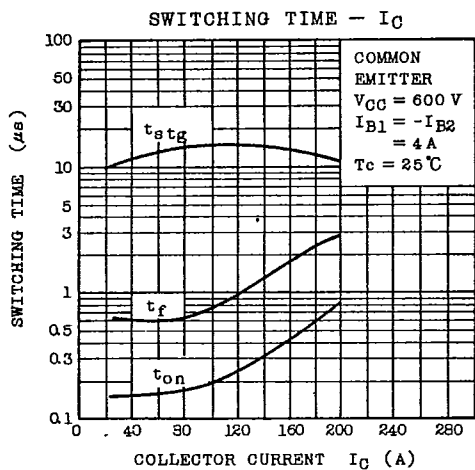
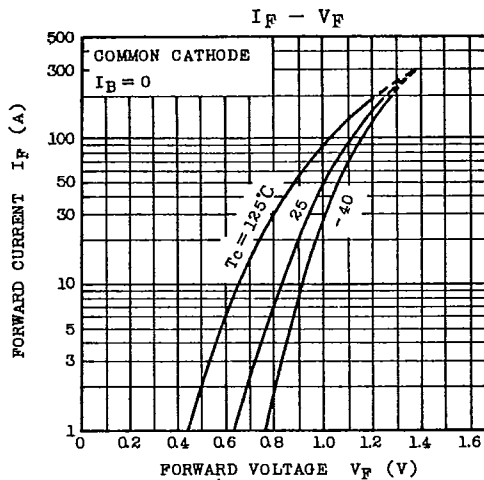
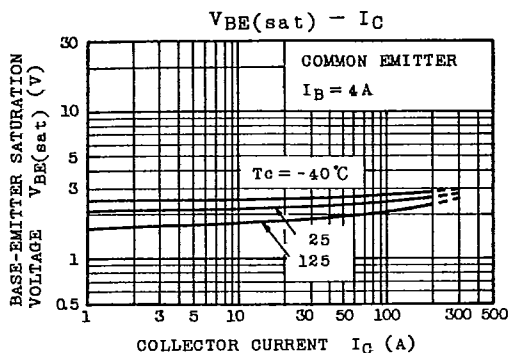
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