

# TOSHIBA SEMICONDUCTOR

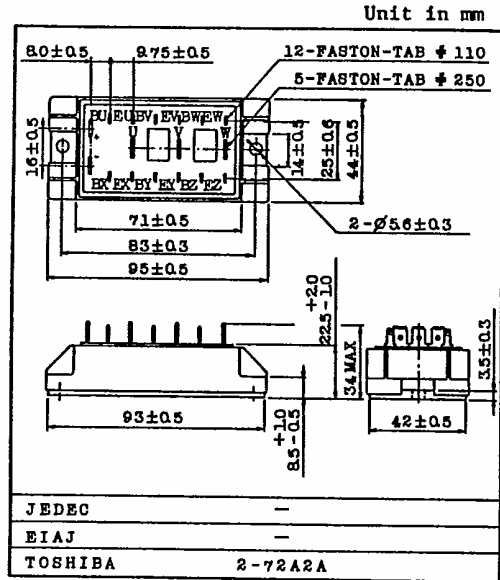
## TECHNICAL DATA

TOSHIBA GTR MODULE  
**MG30G6EL2**  
 SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.  
 MOTOR CONTROL APPLICATIONS.

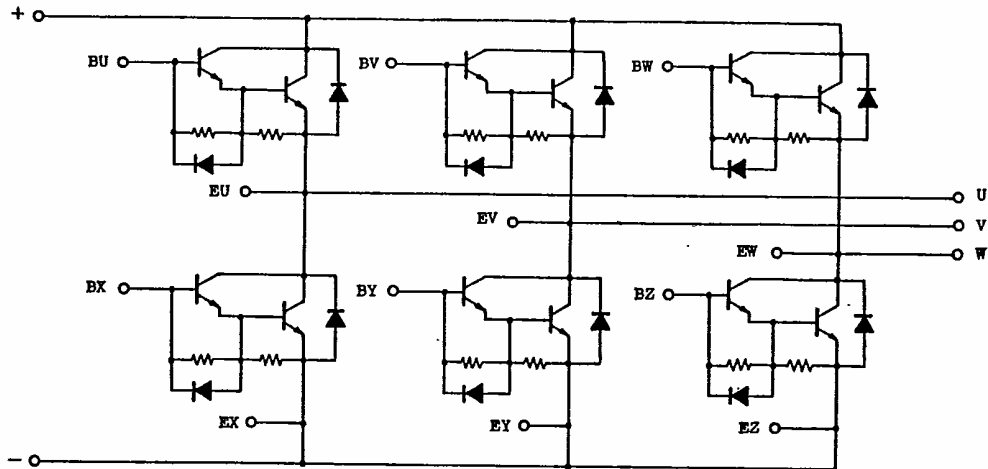
**FEATURES:**

- . The Collector is Isolation from Case.
- . 6 Power Transistors and 6 Free Wheeling Diodes are Built Into 1 Package.
- . High DC Current Gain :  $h_{FE}=100(\text{Min.})$  ( $I_C=30A$ )
- . Low Saturation Voltage  
     :  $V_{CE(\text{sat})}=2.0V(\text{Max.})$  ( $I_C=30A$ )
- . High Speed :  $t_f=3\mu s(\text{Max.})$  ( $I_C=30A$ )



Weight : 240g

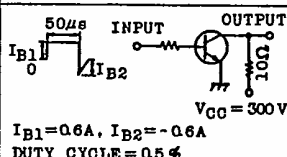
**EQUIVALENT CIRCUIT**



MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V <sub>CB0</sub>	600	V
Collector-Emitter Sustaining Voltage		V <sub>CEX(SUS)</sub>	600	V
		V <sub>CEO(SUS)</sub>	450	
Emitter-Base Voltage		V <sub>EBO</sub>	6	V
Collector Current	DC	I <sub>C</sub>	30	A
	1ms	I <sub>CP</sub>	60	
Forward Current	DC	I <sub>F</sub>	30	A
	1ms	I <sub>FM</sub>	60	
Base Current		I <sub>B</sub>	2	A
Collector Power Dissipation (Tc=25°C)		P <sub>C</sub>	200	W
Junction Temperature		T <sub>j</sub>	150	°C
Storage Temperature Range		T <sub>stg</sub>	-40~125	°C
Isolation Voltage		V <sub>isol</sub>	2500 (AC 1 Minute)	V
Screw Torque			30	kg·cm

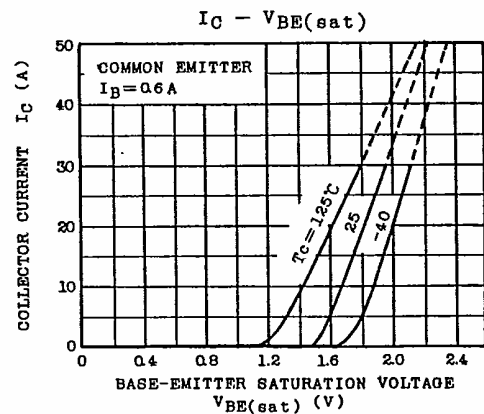
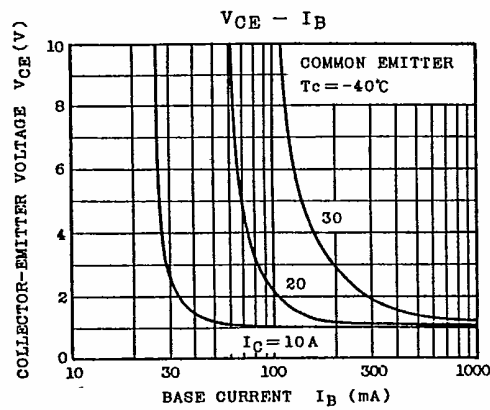
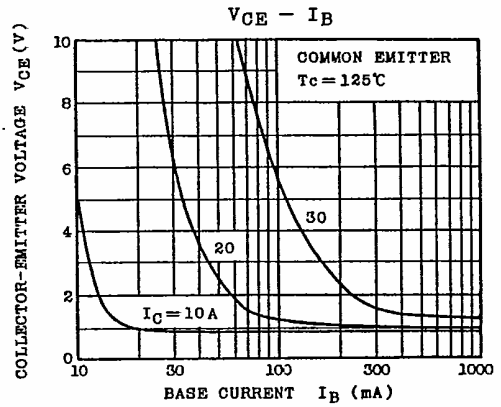
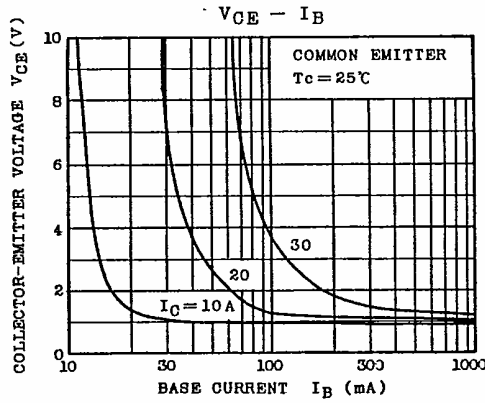
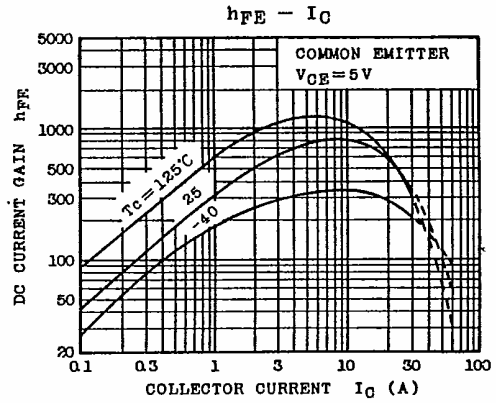
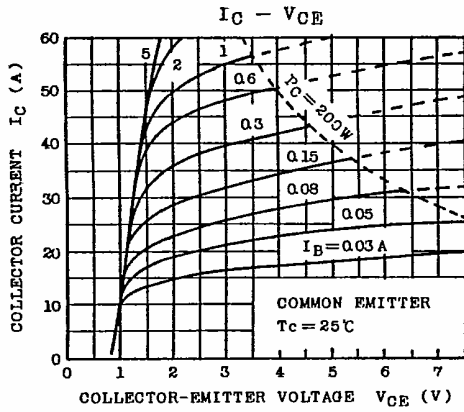
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I <sub>CB0</sub>	V <sub>CB</sub> =600V, I <sub>E</sub> =0	-	-	1.0	mA
Emitter Cut-off Current		I <sub>EBO</sub>	V <sub>EB</sub> =6V, I <sub>C</sub> =0	-	-	200	mA
Collector-Emitter Sustaining Voltage		V <sub>CEO(SUS)</sub>	I <sub>C</sub> =0.5A, L=40mH	450	-	-	V
DC Current Gain		h <sub>FE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =30A	100	-	-	
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =30A, I <sub>B</sub> =0.6A	-	-	2.0	V
Base-Emitter Saturation Voltage		V <sub>BE(sat)</sub>		-	-	2.5	V
Switching Time	Turn-on Time	t <sub>on</sub>	 <p>50µs INPUT OUTPUT I<sub>B1</sub> I<sub>B2</sub> V<sub>CC</sub>=300V I<sub>B1</sub>=0.6A, I<sub>B2</sub>=-0.6A DUTY CYCLE=0.5%</p>	-	-	1.0	µs
	Storage Time	t <sub>stg</sub>		-	-	12	
	Fall Time	t <sub>f</sub>		-	-	3.0	
Forward Voltage		V <sub>F</sub>	I <sub>F</sub> =30A, I <sub>B</sub> =0	-	-	1.6	V
Reverse Recovery Time		t <sub>rr</sub>	I <sub>F</sub> =30A, V <sub>BE</sub> =-2V di/dt=60A/µs	-	-	0.7	µs
Thermal Resistance		R <sub>th(j-c)</sub>	Transistor	-	-	0.625	°C/W
			Diode	-	-	1.8	

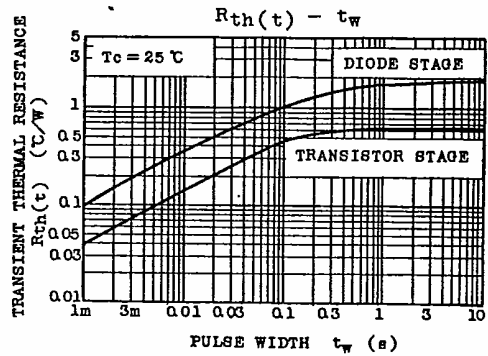
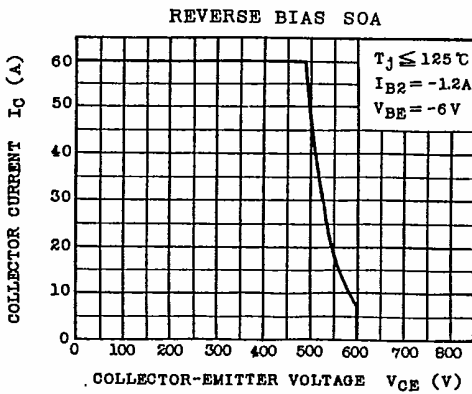
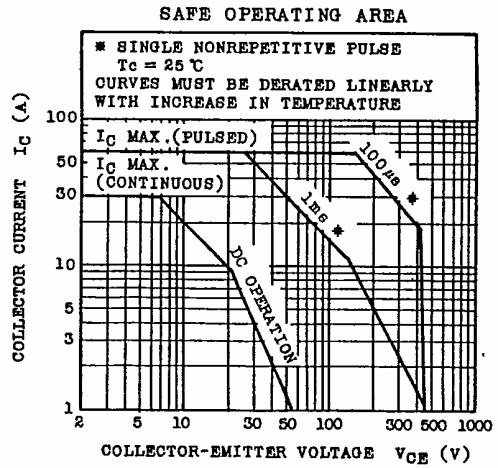
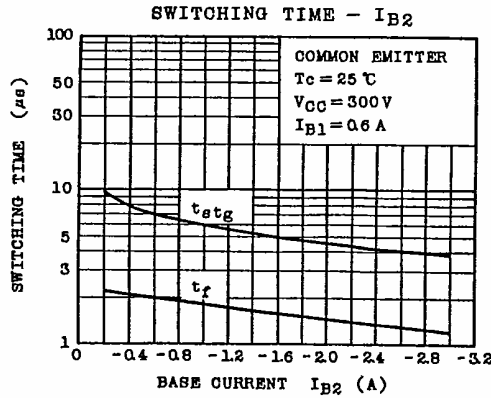
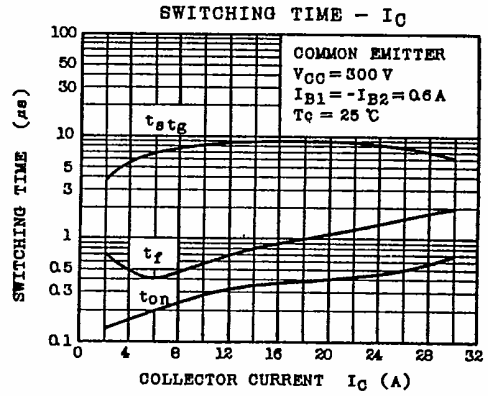
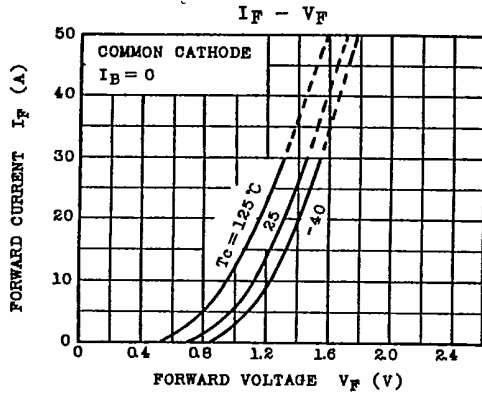
EGA-MG30G6EL2-2

1986-4-10

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Datasheets for electronic components.