

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16133

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T-33-27

# TOSHIBA SEMICONDUCTOR

## TECHNICAL DATA

TOSHIBA GTR MODULE

MG50H2YS1

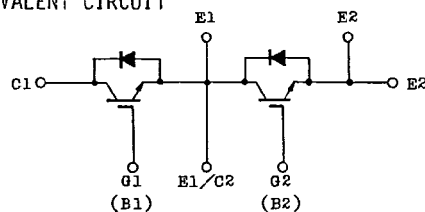
SILICON N CHANNEL IGBT

HIGH POWER SWITCHING APPLICATIONS.  
MOTOR CONTROL APPLICATIONS.

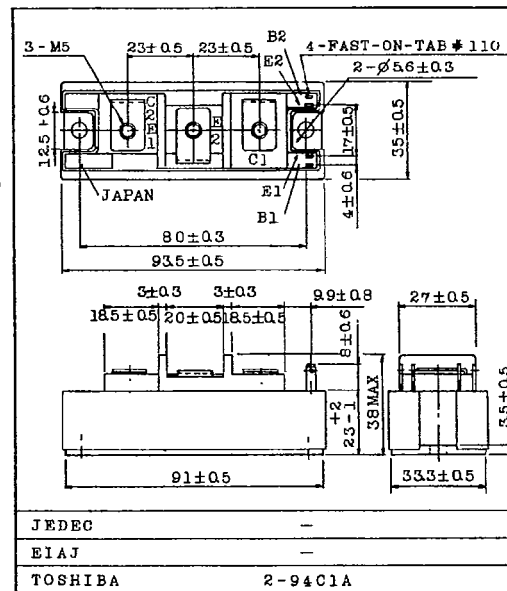
## FEATURES:

- High Input Impedance
- High Speed :  $t_f=1.0\mu s(\text{Max.})$   
 $t_{rr}=0.5\mu s(\text{Max.})$
- Low Saturation Voltage:  $V_{CE(sat)}=5.0V(\text{Max.})$
- Enhancement-Mode
- Includes a Complete Half Bridge in one Package.
- The Electrodes are Isolated from Case.

## EQUIVALENT CIRCUIT



Unit in mm



Weight : 222g

MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CES}$	500	V
Gate-Emitter Voltage	$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	50
	1ms	$I_{CP}$	100
Forward Current	DC	$I_F$	50
	1ms	$I_{FM}$	100
Collector Power Dissipation	$P_C$	300	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ\text{C}$
Isolation Voltage	$V_{isol}$	2500 (AC 1 Minute)	V
Screw Torque (Terminal/Mounting)	-	30/30	kg·cm

EGA-MG50H2YS1-1

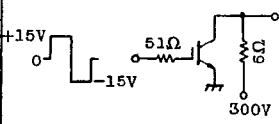
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TOSHIBA CORPORATION

**TOSHIBA** SEMICONDUCTOR  
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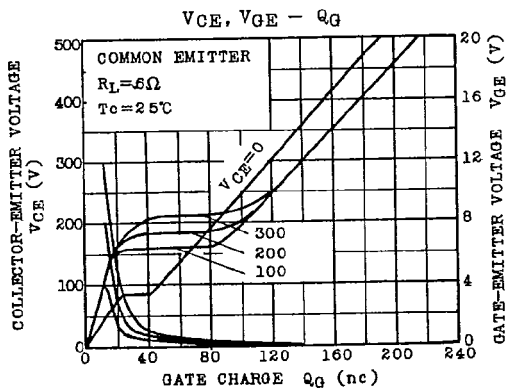
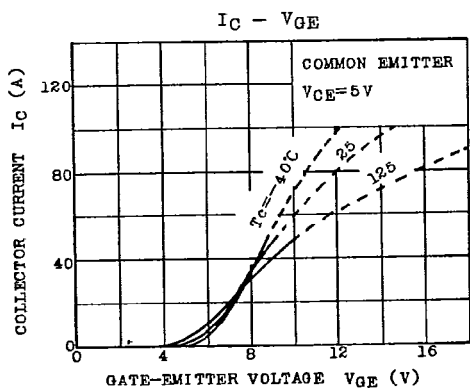
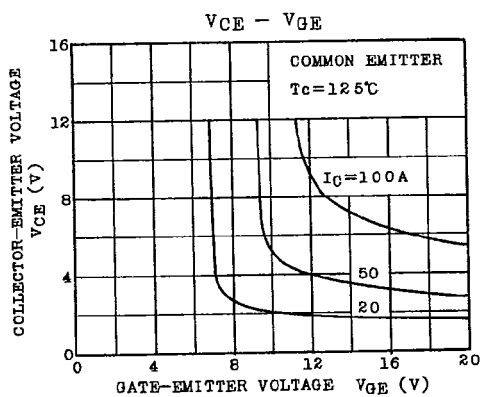
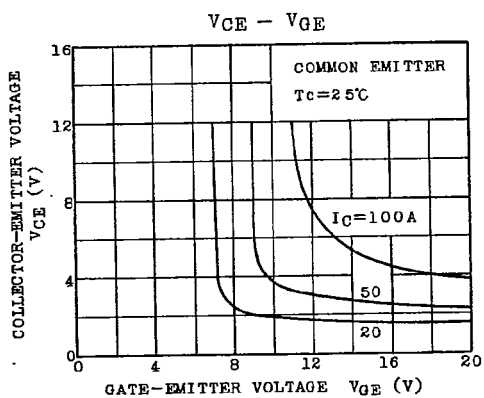
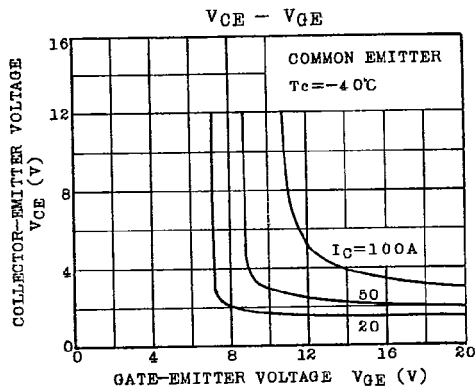
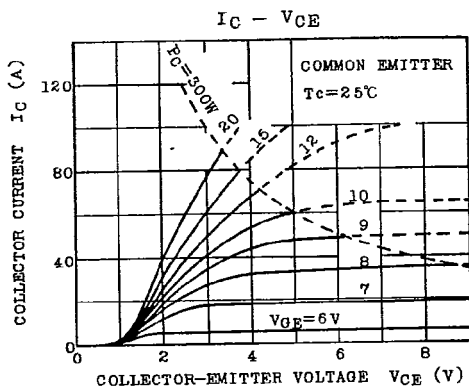
MG50H2YS1

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		ICGS	VGE=±20V, VCE=0	-	-	±500	nA
Collector Cut-off Current		ICES	VCE=500V, VGE=0	-	-	1.0	mA
Collector-Emitter Breakdown Voltage		V(BR)CES	IC=10mA, VGE=0	500	-	-	V
Gate-Emitter Turn-on Voltage		VGE(th)	IC=50mA, VCE=5V	3.0	-	6.0	V
Collector-Emitter Saturation Voltage		VCE(sat)	IC=50A, VGE=15V	-	3.0	5.0	V
Input Capacitance		Cies	VCE=10V, VGE=0, f=1MHz	-	3000	-	pF
Switching Time	Rise Time	tr		-	0.5	1.0	μs
	Turn-on Time	ton		-	0.6	1.0	
	Fall Time	tf		-	0.4	1.0	
	Turn-off Time	toff		-	0.9	1.5	
Forward Voltage		VF	IF=50A, VGE=-10V	-	1.5	2.5	V
Reverse Recovery Time		trr	IF=50A, VGE=0 di/dt=100A/μs	-	0.25	0.5	μs
Thermal Resistance		Rth(j-c)	Transistor	-	-	0.41	°C/W
			Diode	-	-	0.83	

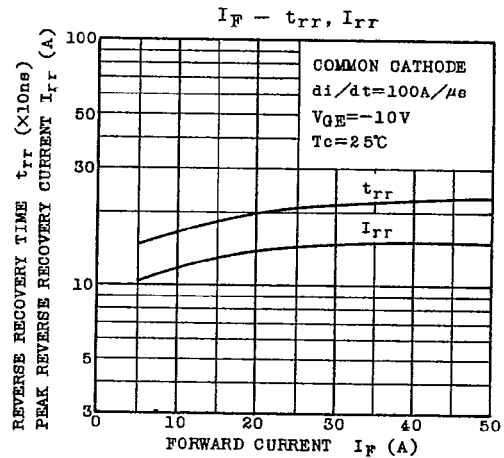
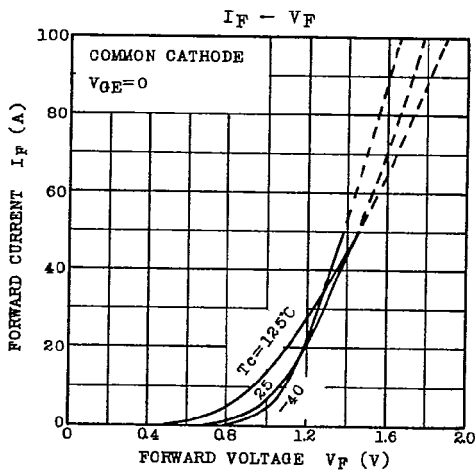
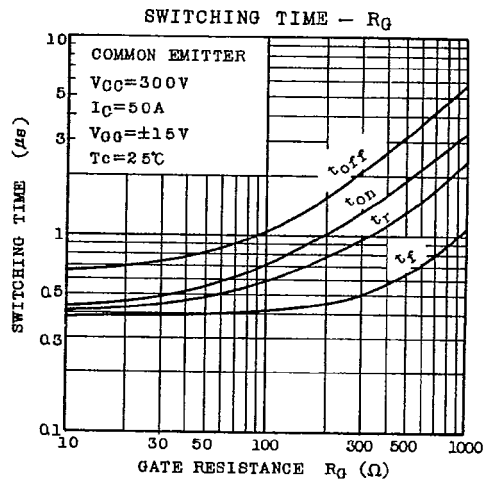
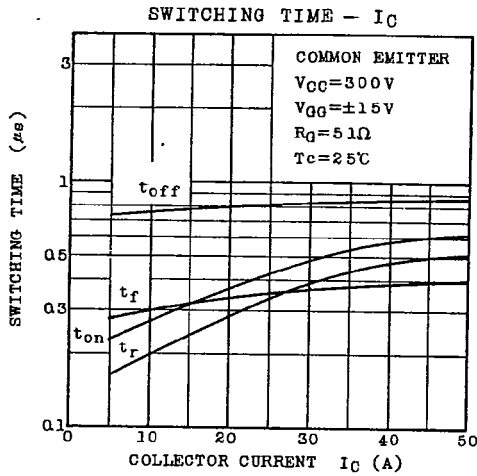
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