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Find the *Toshiba MG50J2YS1* at our website: *Click HERE*

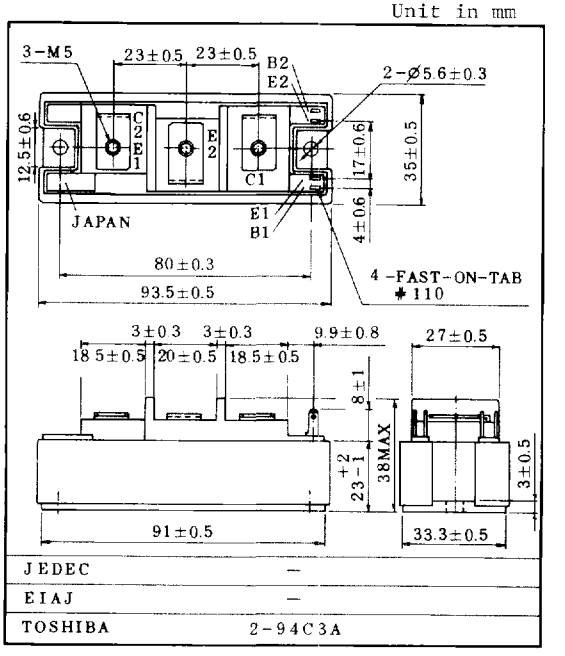
GTR MODULE
SILICON N CHANNEL IGBT

MG50J2YS1

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

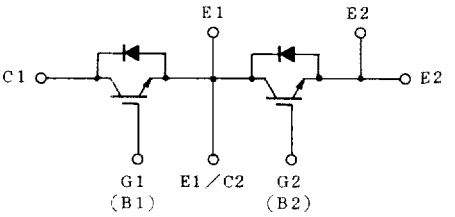
- High Input Impedance
- High Speed : t_f=0.35μs(Max.)
  t_{rr}=0.25μs(Max.)
- Low Saturation Voltage
  : $V_{CE(sat)}$=4.0V(Max.)
- Enhancement-Mode
- Includes a Complete Half Bridge in One Package.
- The Electrodes are Isolated from Case.

Unit in mm



Weight: 205g

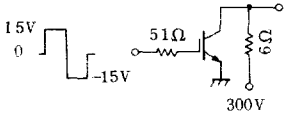
EQUIVALENT CIRCUIT



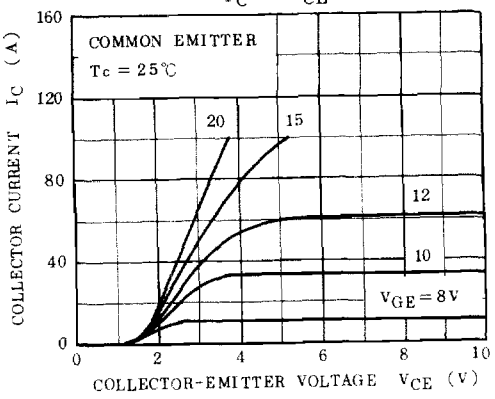
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collector Current	DC	I_C	50	A
	1ms	I_{CP}	100	
Forward Current	DC	I_F	50	A
	1ms	I_{FM}	100	
Collector Power Dissipation		P_C	250	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-40~125	°C
Isolation Voltage		V_{Isol}	2500 (AC, 1 Minute)	V
Screw Torque (Terminal/Mounting)		-	30/30	kg·cm

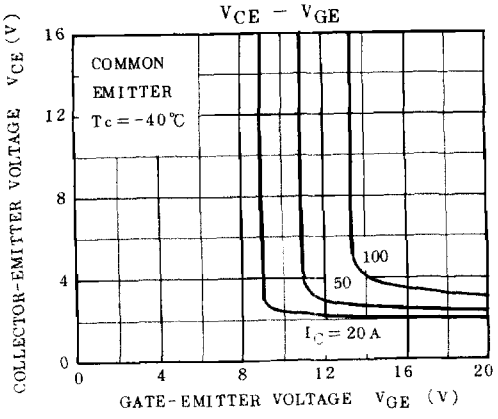
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	V_{GE}=±20V, V_{CE}=0	-	-	±500	nA
Collector Cut-off Current		I_{CES}	V_{CE}=600V, V_{GE}=0	-	-	1.0	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CES}$	I_C=10mA, V_{GE}=0	600	-	-	V
Gate-Emitter Cut-off Voltage		$V_{GE(OFF)}$	I_C=50mA, V_{CE}=5V	3.0	-	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=50A, V_{GE}=15V	-	3.0	4.0	V
Input Capacitance		C_{ies}	V_{CE}=10V, V_{GE}=0, f=1MHz	-	3500	-	pF
Switching Time	Rise Time	t_r		-	0.30	0.60	μs
	Turn-on Time	t_{on}		-	0.40	0.80	
	Fall Time	t_f		-	0.15	0.35	
	Turn-off Time	t_{off}		-	0.50	1.00	
Forward Voltage		V_F	I_F=50A, V_{GE}=0	-	2.0	2.7	V
Reverse Recovery Time		t_{rr}	I_F=50A, V_{GE}=-10V di/dt=100A/μs	-	0.15	0.25	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	-	-	0.50	°C/W
			Diode	-	-	0.83	

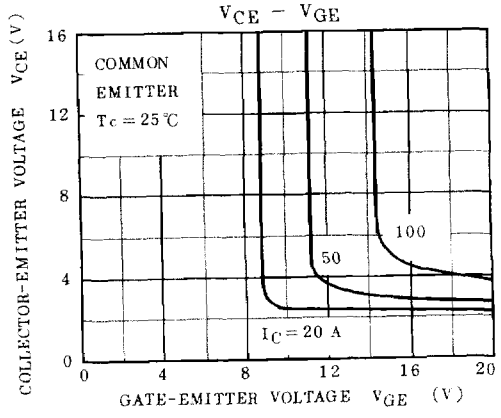
I_C – V_{CE}



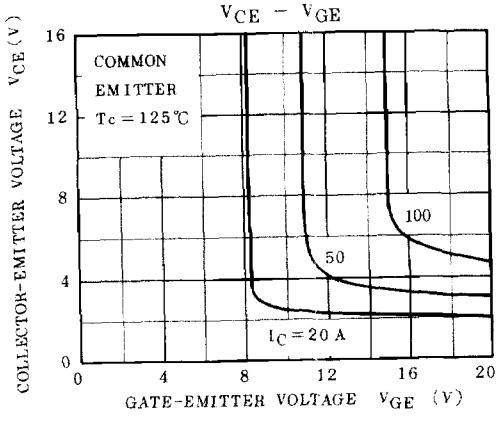
V_{CE} – V_{GE}



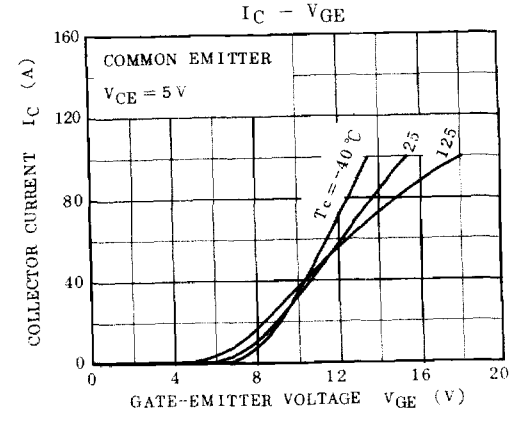
V_{CE} – V_{GE}



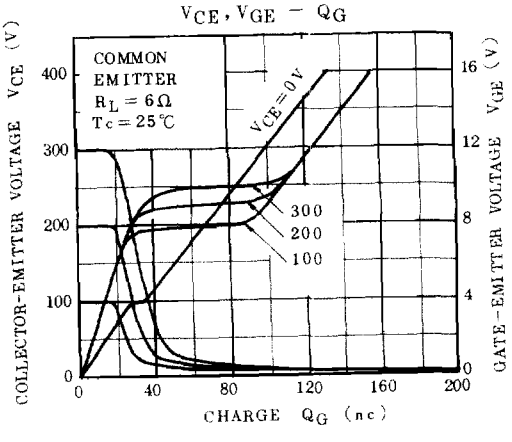
V_{CE} – V_{GE}



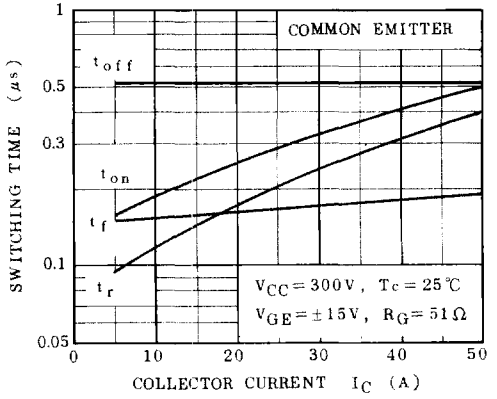
I_C – V_{GE}



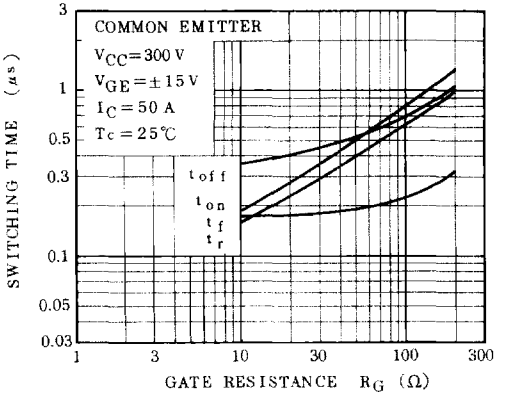
V_{CE}, V_{GE} – Q_G



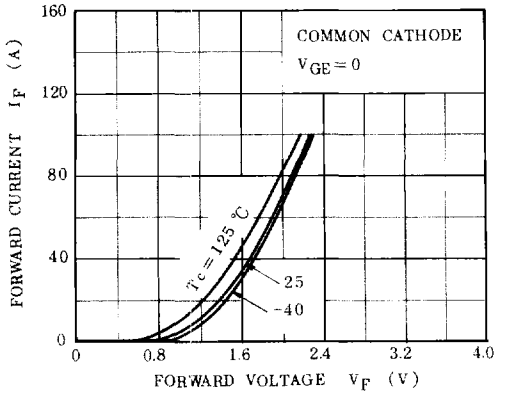
SWITCHING TIME – I_C



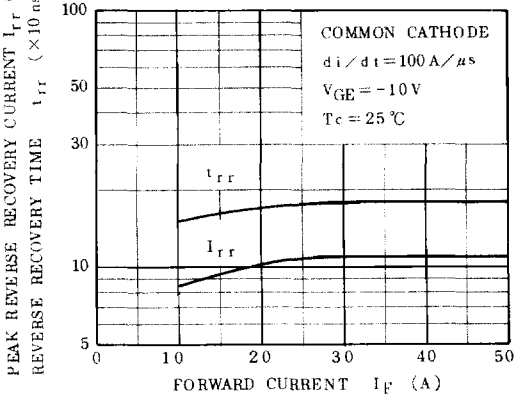
SWITCHING TIME – R_G



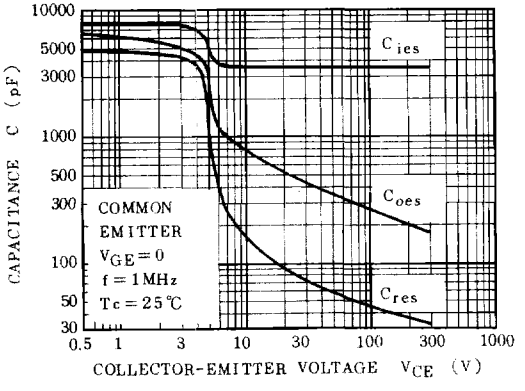
I_F – V_F



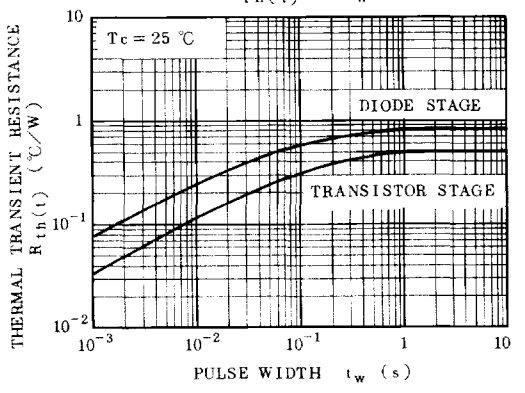
t_{rr}, I_{rr} – I_F



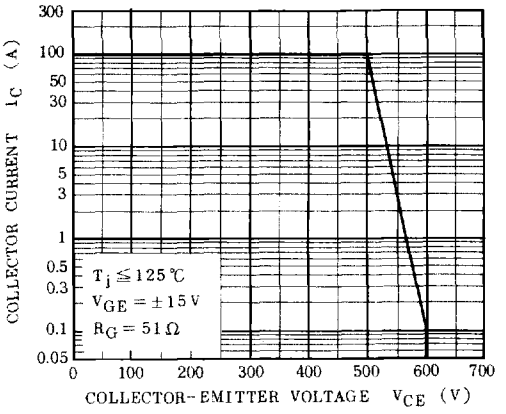
C – V_{CE}



$R_{th(t)}$ – t_w



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