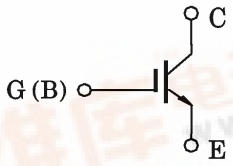
TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

MG25Q1BS11

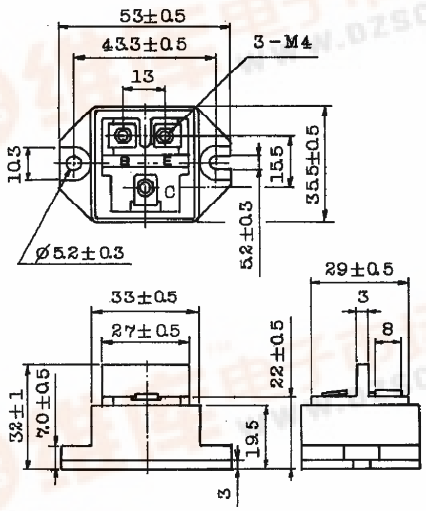
HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

- High Input Impedance
- High Speed : $t_f = 1.0\mu s$ (Max.)
- Low Saturation Voltage : $V_{CE(sat)} = 2.7V$ (Max.)
- Enhancement-Mode
- The Electrodes are Isolated from Case.

EQUIVALENT CIRCUIT



Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-33D1A

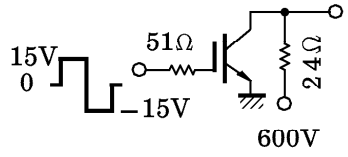
Weight : 90g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	1200	V
Gate-Emitter Voltage		V_{GES}	±20	V
Collector Current	DC	I_C	25	A
	1ms	I_{CP}	50	
Collector Power Dissipation (Tc = 25°C)		P_C	150	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)		—	2 / 3	N·m

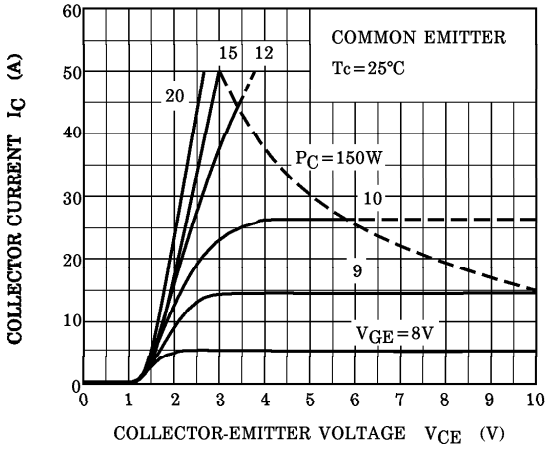
961001EAA2

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

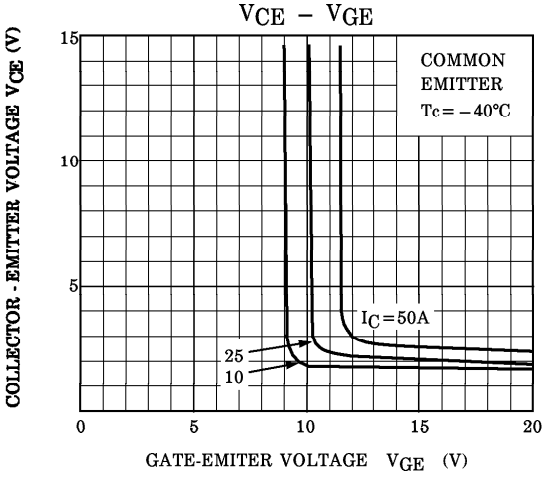
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	±500	nA
Collector Cut-off Current		I_{CES}	$V_{CE} = 1200V, V_{GE} = 0$	—	—	1.0	mA
Collector-Emitter Voltage		V_{CES}	$I_C \leqq 1mA, V_{GE} = 0$ Note 1	1200	—	—	V
Gate-Emitter Cut-off Voltage		$V_{GE(OFF)}$	$I_C = 25mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 25A, V_{GE} = 15V$	—	2.3	2.7	V
Input Capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	3000	—	pF
Switching Time	Rise Time	t_r		—	0.3	0.6	μs
	Turn-on Time	t_{on}		—	0.4	0.8	
	Fall Time	t_f		—	0.6	1.0	
	Turn-off Time	t_{off}		—	1.2	1.8	
Thermal Resistance		$R_{th\,(j\text{-}c)}$	—	—	—	0.83	°C/W

Note 1 : Do not apply the over rating voltage.

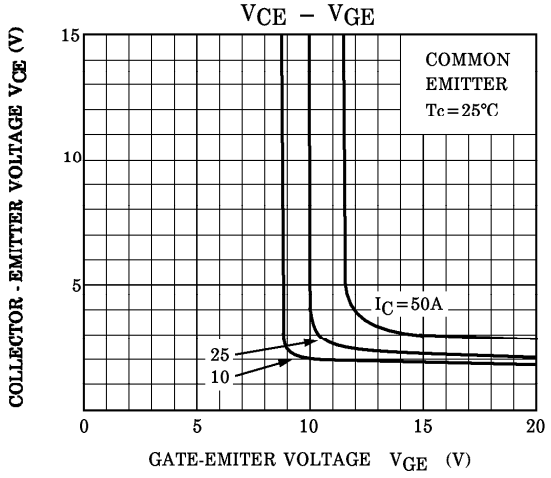
I_C – V_{CE}



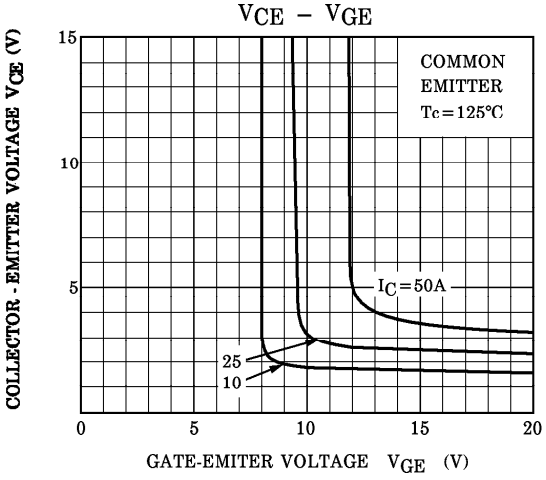
V_{CE} – V_{GE}



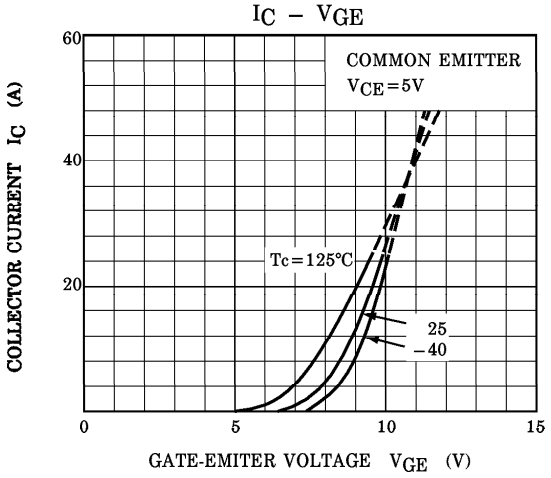
V_{CE} – V_{GE}



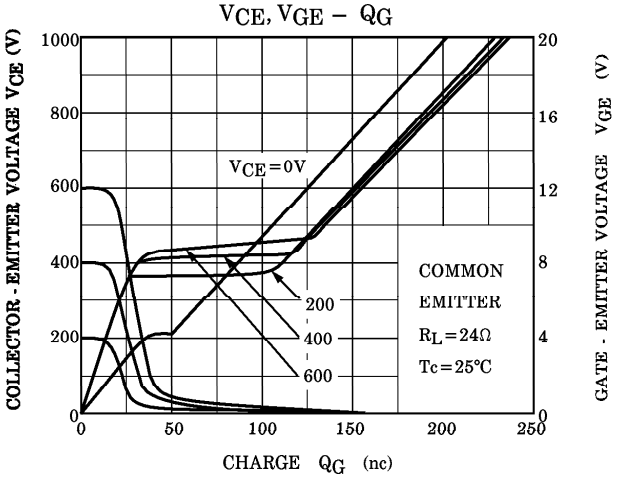
V_{CE} – V_{GE}



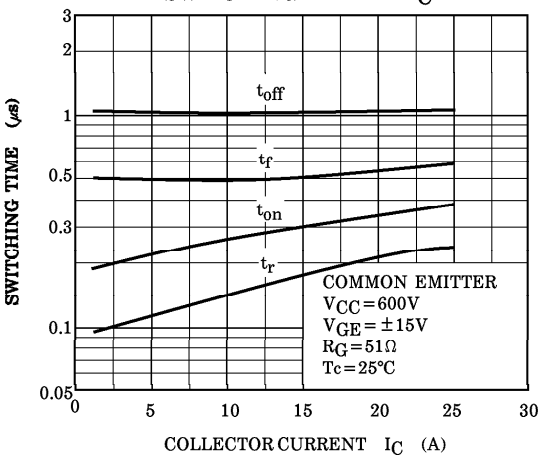
I_C – V_{GE}



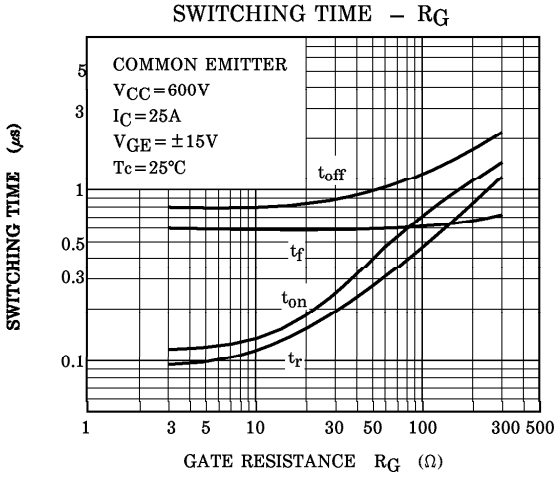
V_{CE}, V_{GE} – Q_G



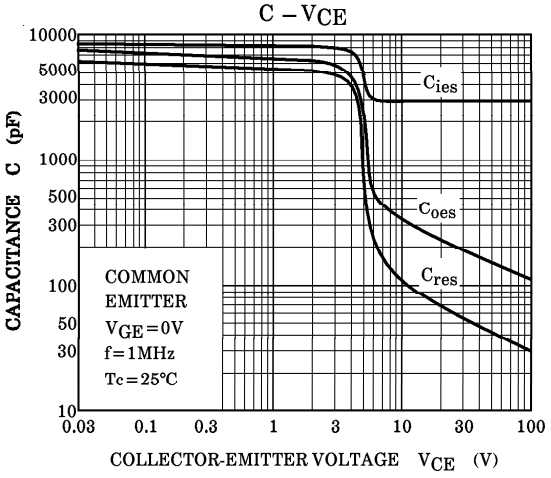
SWITCHING TIME – I_C



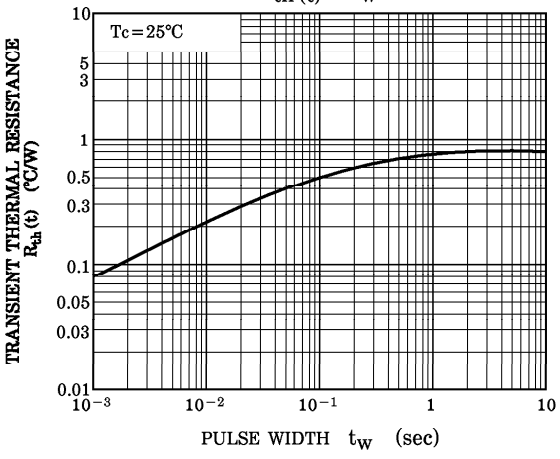
SWITCHING TIME – R_G



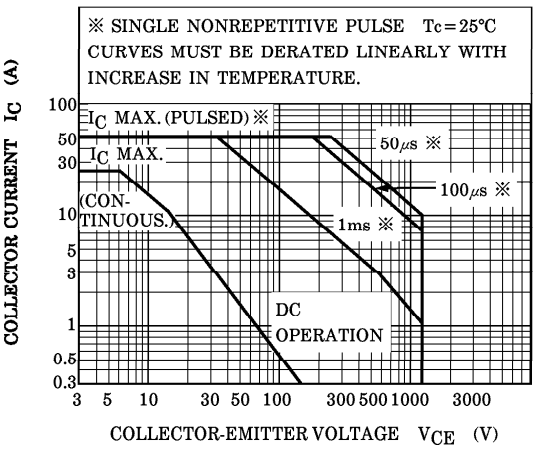
C – V_{CE}



R_{th} (t) – t_w



SAFE OPERATING AREA



REVERSE BIAS SOA