

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N-CHANNEL IGBT

GT25Q101

HIGH POWER SWITCHING APPLICATIONS

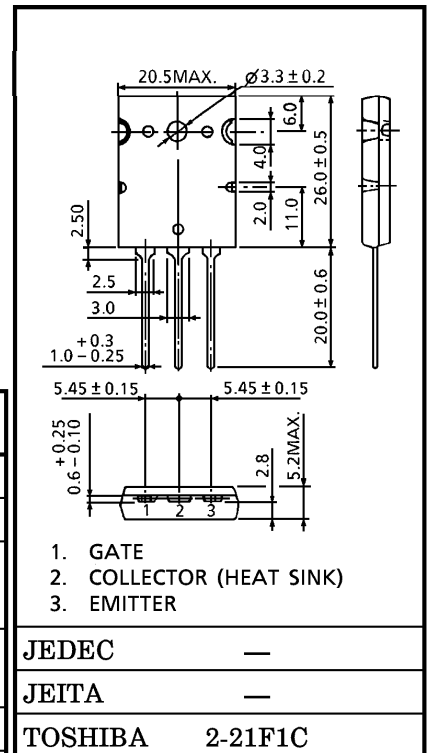
MOTOR CONTROL APPLICATIONS

Unit in mm

- High Input Impedance
- High Speed : $t_f = 0.5 \mu s$ (Max.)
- Low Saturation Voltage : $V_{CE(sat)} = 4.0 V$ (Max.)
- Enhancement-Mode

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

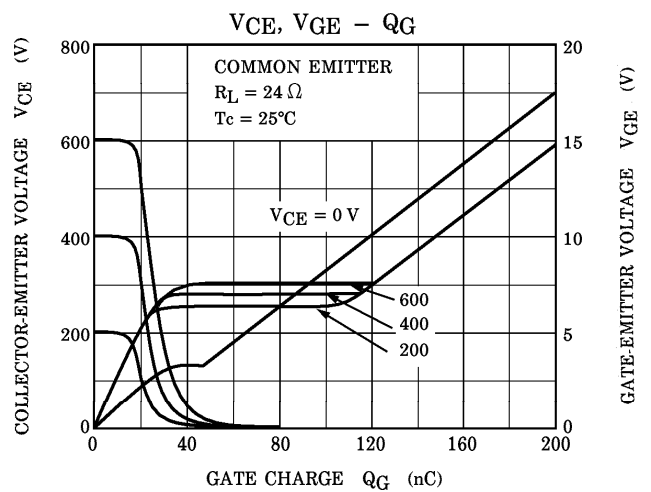
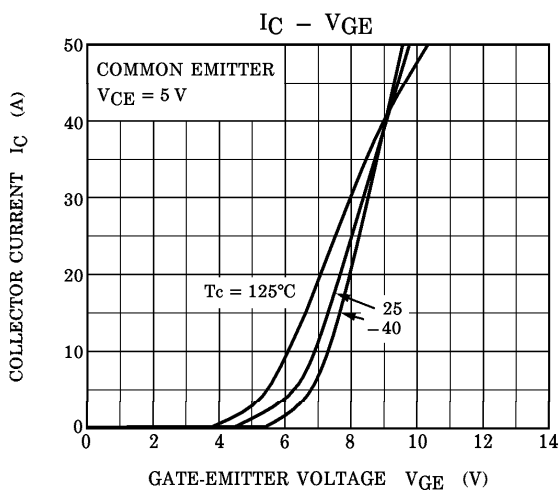
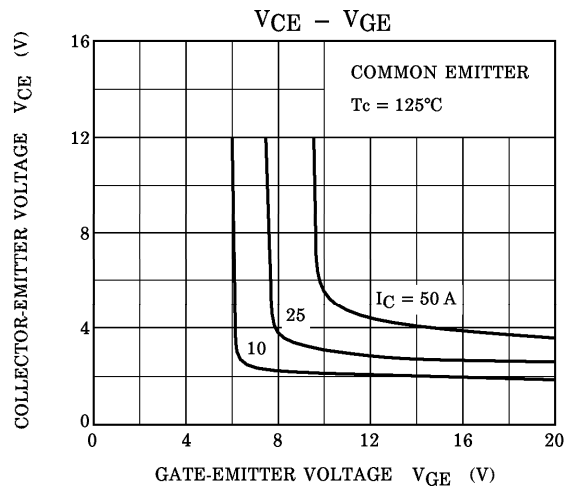
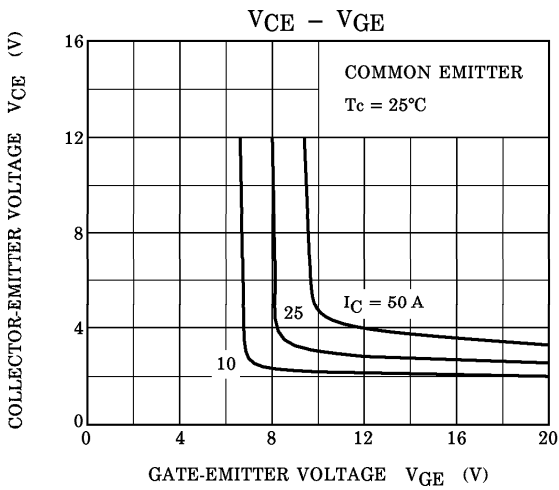
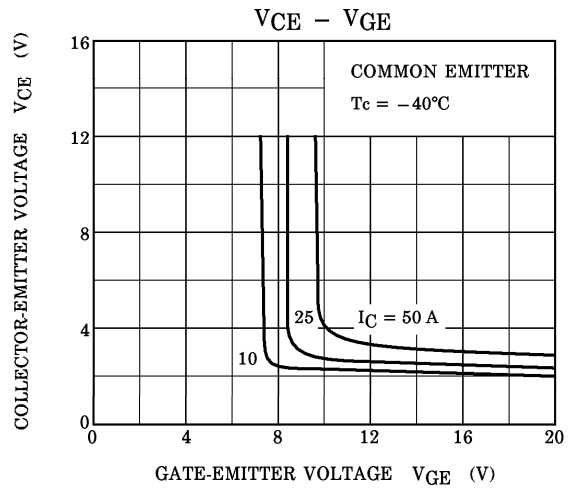
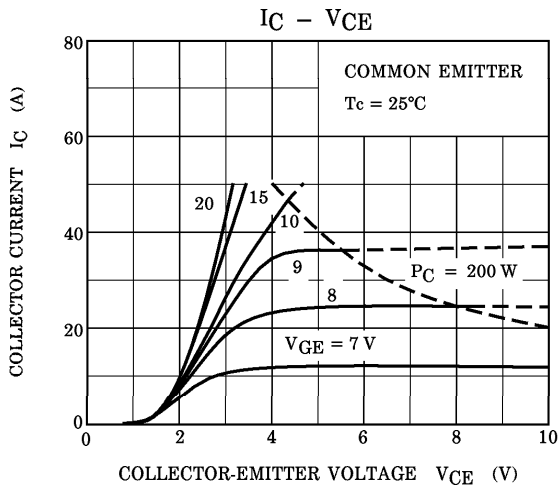
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CES}	1200	V
Gate-Emitter Voltage	V_{GES}	± 20	V
Collector Current	DC	I_C	25
	1ms	I_{CP}	50
Collector Power Dissipation ($T_c = 25^\circ C$)	P_C	200	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$



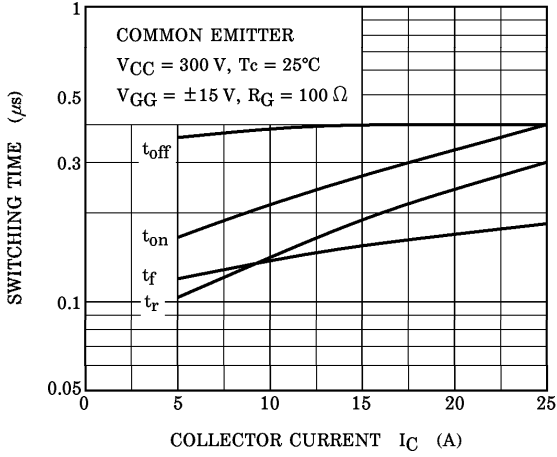
Weight : 9.75 g

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

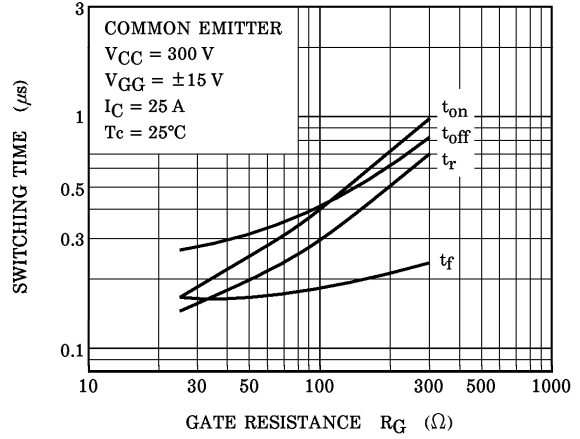
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GES}	$V_{GE} = \pm 20 V, V_{CE} = 0$	—	—	± 500	nA
Collector Cut-off Current	I_{CES}	$V_{CE} = 1200 V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage	$V_{GE(OFF)}$	$I_C = 25 mA, V_{CE} = 5 V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 25 A, V_{GE} = 15 V$	—	3.0	4.0	V
Input Capacitance	C_{ies}	$V_{CE} = 10 V, V_{GE} = 0, f = 1 MHz$	—	3200	—	pF
Switching Time	Rise Time	t_r	—	0.2	0.6	μs
	Turn-on Time	t_{on}	—	0.3	0.8	
	Fall Time	t_f	—	0.3	0.5	
	Turn-off Time	t_{off}	—	0.8	1.5	



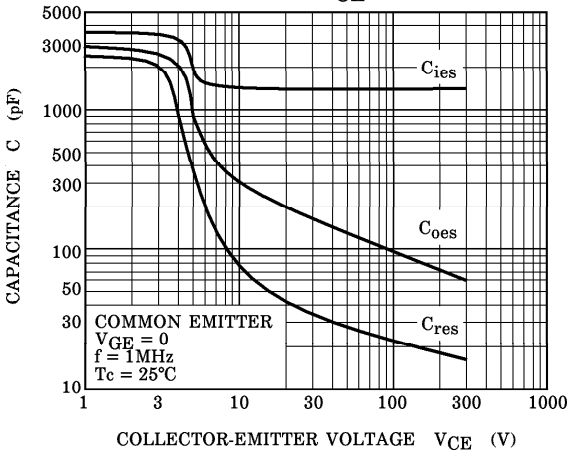
SWITCHING TIME - I_C



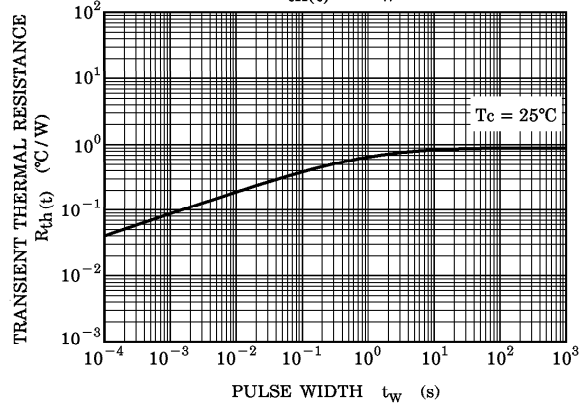
SWITCHING TIME - R_G



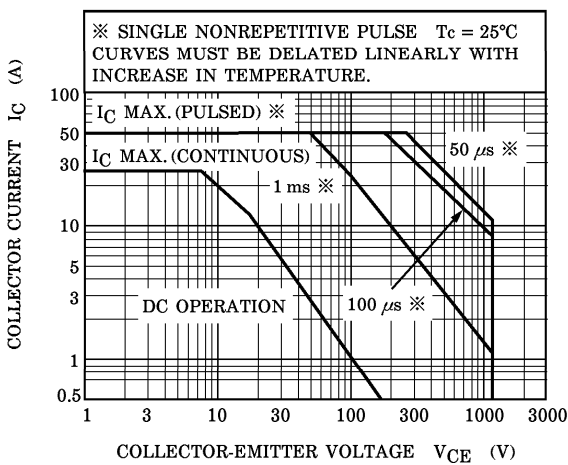
C - V_{CE}



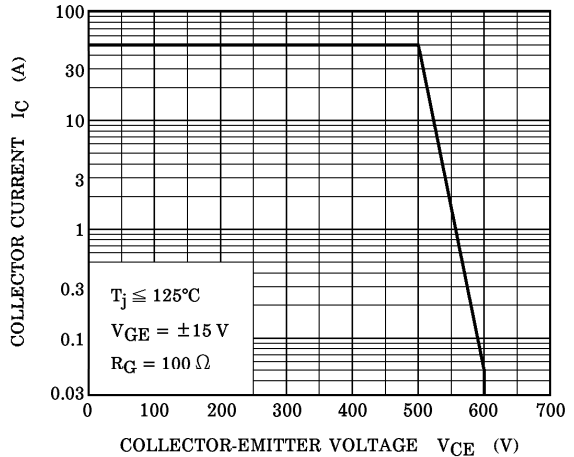
$R_{th}(t) - t_w$



SAFE OPERATING AREA



REVERSE BIAS SOA



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