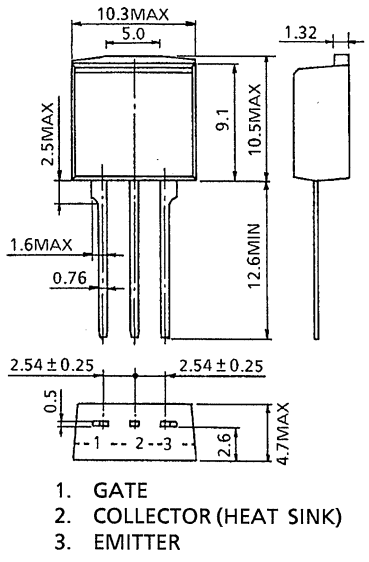
TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N−CHANNEL IGBT

GT25G101

STROBE FLASH APPLICATIONS

- High Input Impedance
- Low Saturation Voltage : $V_{CE\ (sat)}$=8V (Max.) (I_C=170A)
- Enhancement−Mode
- 20V Gate Drive

Unit in mm



1. GATE
2. COLLECTOR (HEAT SINK)
3. EMITTER

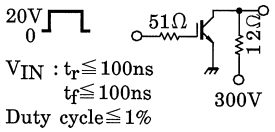
JEDEC	—
EIAJ	—
TOSHIBA	2−10S1C

Weight : 1.5g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector−Emitter Voltage		V_{CES}	400	V
Gate−Emitter Voltage		V_{GES}	±25	V
Collector Current	DC	I_C	25	A
	1ms	I_{CP}	170	
Collector Power Dissipation	Ta=25°C	P_C	1.3	W
	Tc=25°C	P_C	75	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	V_{GE}=±25V, V_{CE}=0	—	—	±100	nA
Collector Cut−off Current		I_{CES}	V_{CE}=400V, V_{GE}=0	—	—	10	μA
Gate−Emitter Cut−off Voltage		$V_{GE\ (OFF)}$	I_C=1mA, V_{CE}=5V	4	5	7	V
Collector−Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C=170A, V_{GE}=20V (Pulsed)	—	5	8	V
Input Capacitance		C_{ies}	V_{CE}=10V, V_{GE}=0, f=1MHz	—	2000	—	pF
Switching Time	Rise Time	t_r		—	0.1	0.5	μs
	Turn−on Time	t_{on}		—	0.15	0.5	
	Fall Time	t_f		—	4.0	6.0	
	Turn−off Time	t_{off}		—	4.5	7.0	
Thermal Resistance		$R_{th\ (j-c)}$	—	—	—	1.66	°C / W

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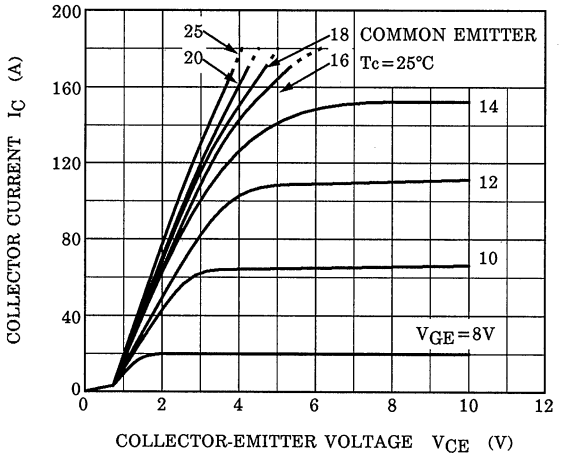
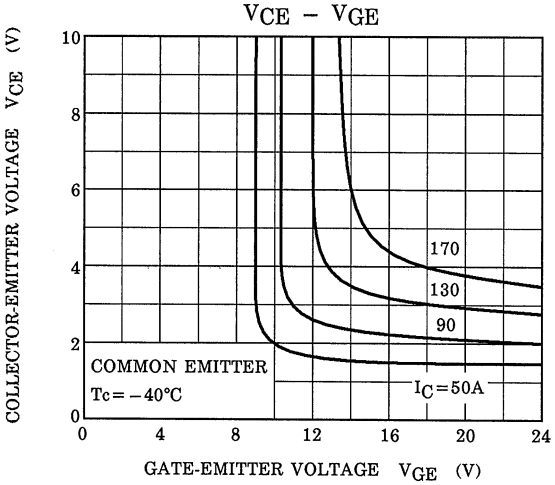
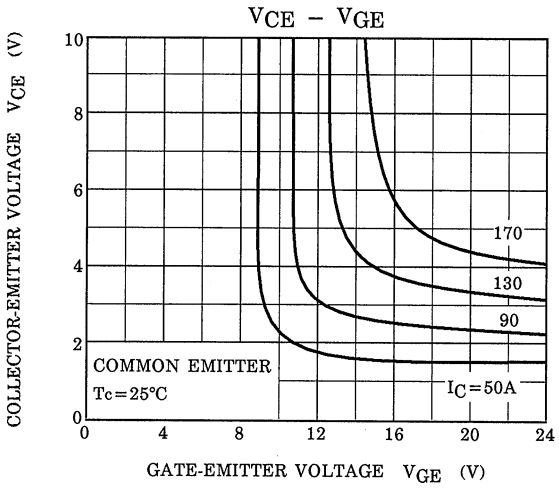
$I_C - V_{CE}$



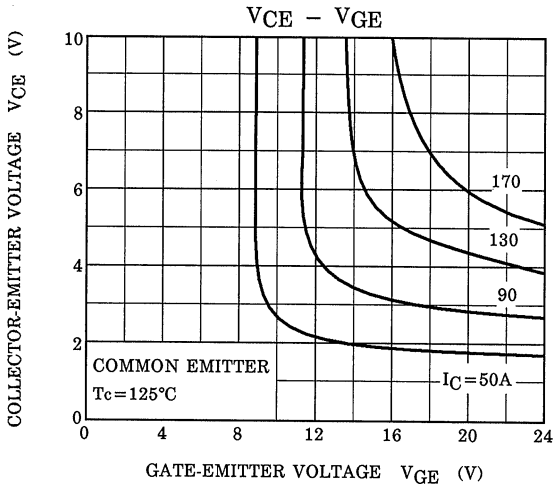
$V_{CE} - V_{GE}$



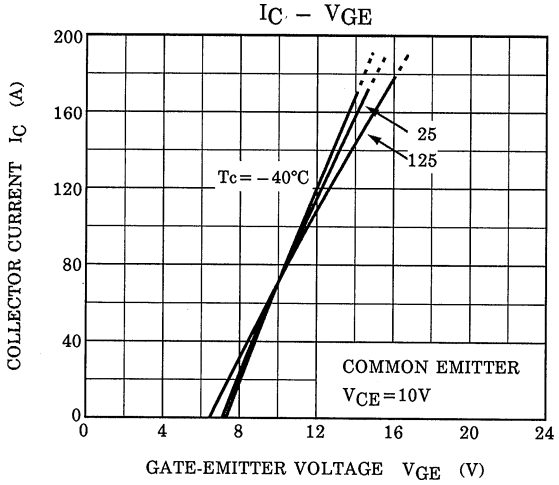
$V_{CE} - V_{GE}$



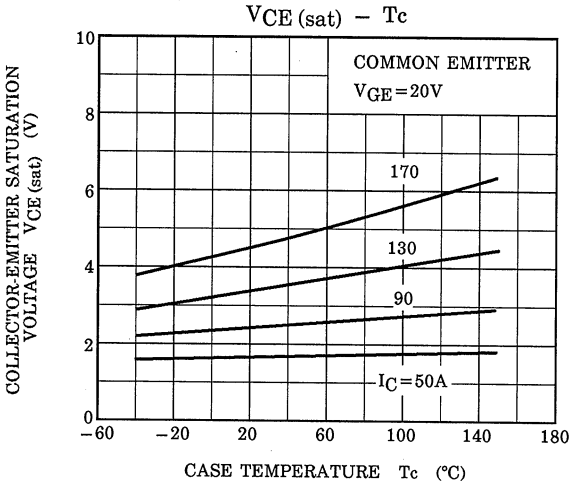
$V_{CE} - V_{GE}$



$I_C - V_{GE}$



$V_{CE\,(sat)} - Tc$



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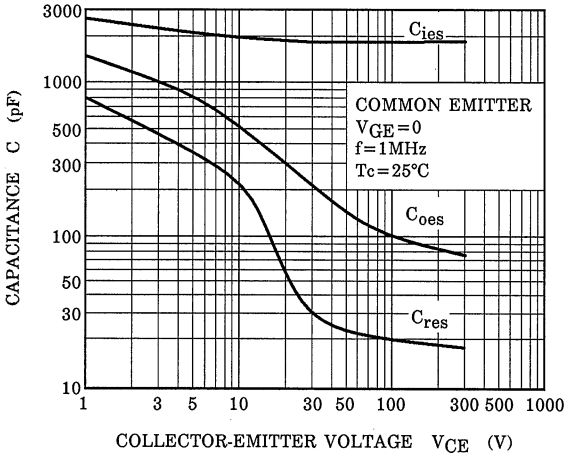
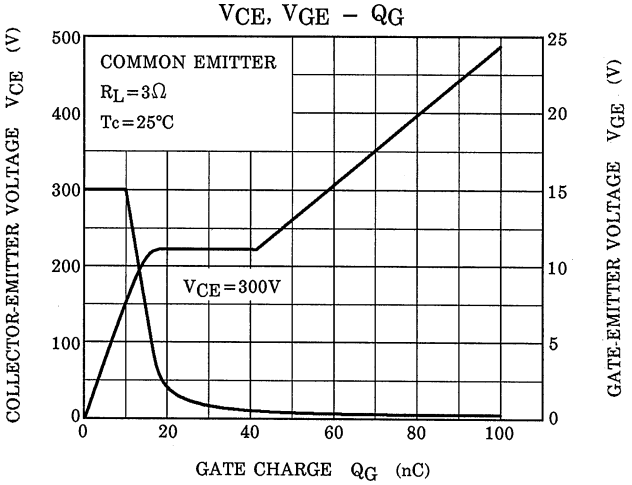
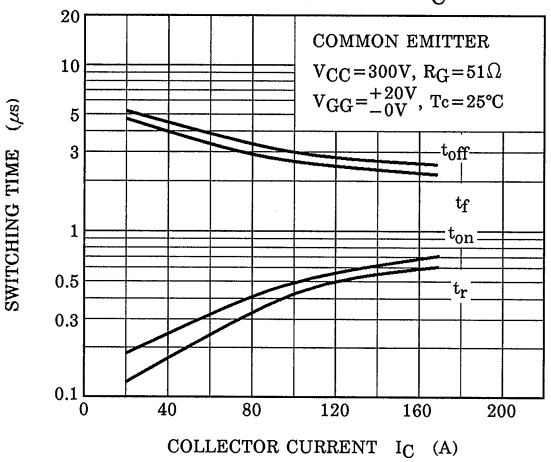
C – V_{CE}



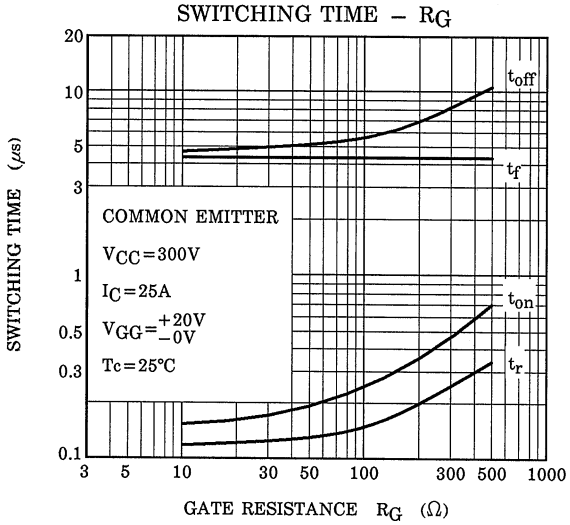
V_{CE}, V_{GE} – Q_G



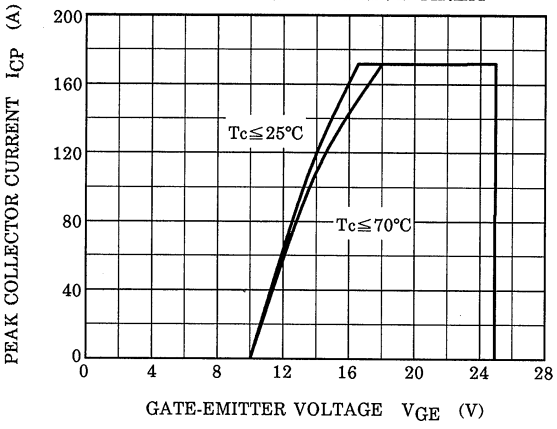
SWITCHING TIME – I_C



SWITCHING TIME – R_G



MINIMUM GATE DRIVE AREA



MAXIMUM OPERATING AREA