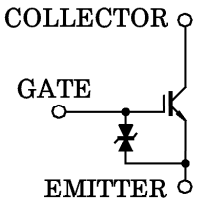
TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL MOS TYPE

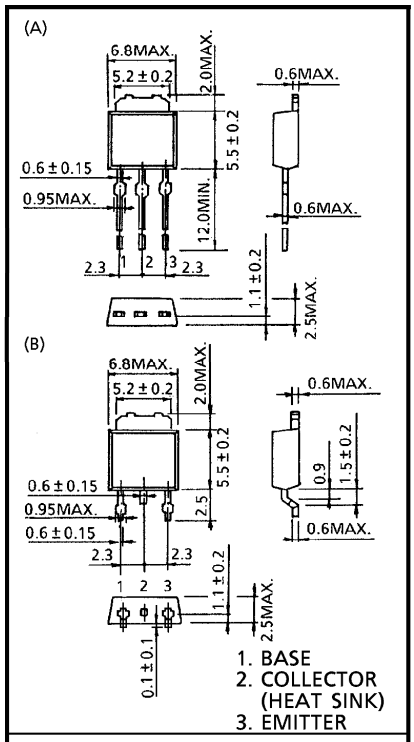
GT8G121

STROBE FLASH APPLICATIONS

Unit in mm

- 4th Generation (Trench Gate Structure)
- Enhancement-Mode
- Low Saturation Voltage
  : $V_{CE\,(sat)}$ = 7 V (Max.) (@I_C = 150 A)
- 4 V Gate Drive





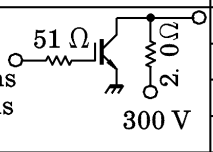
JEDEC	—
EIAJ	—
TOSHIBA	(A) 2-7B5C (B) 2-7B6C

Weight : 0.36 g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	400	V
Gate-Emitter Voltage	DC	V_{GES}	±6	V
	Pulse	V_{GES}	±8	V
Collector Current	DC	I_C	8	A
	1 ms	I_{CP}	150	A
Collector Power Dissipation	Ta = 25°C	P_C	1.1	W
	Tc = 25°C	P_C	20	W
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} = 6 V, V_{CE} = 0	—	—	10	μA
Collector Cut-off Current		I_{CES}	V_{CE} = 400 V, V_{GE} = 0	—	—	10	μA
Gate-Emitter Cut-off Voltage		$V_{GE\,(OFF)}$	I_C = 1 mA, V_{CE} = 5 V	0.8	—	1.5	V
Collector-Emitter Saturation Voltage		$V_{CE\,(sat)}$	I_C = 150 A, V_{GE} = 4 V (Pulsed)	—	3.5	7	V
Input Capacitance		C_{ies}	V_{CE} = 10 V, V_{GE} = 0, f = 1 MHz	—	3800	—	pF
Switching Time	Rise Time	t_r		—	2.3	—	μs
	Turn-on Time	t_{on}		—	2.5	—	
	Fall Time	t_f		—	1.7	—	
	Turn-off Time	t_{off}		—	2.1	—	
Thermal Resistance		$R_{th\,(j\text{-}c)}$	—	—	—	6.25	°C / W

These devices are MOS type. Users should follow proper ESD Handling Procedures.
Operating condition of turn-off dv / dt should be lower than 400 V / μs.

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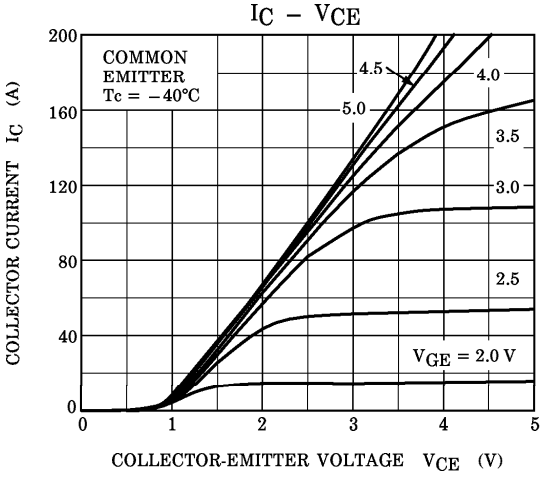
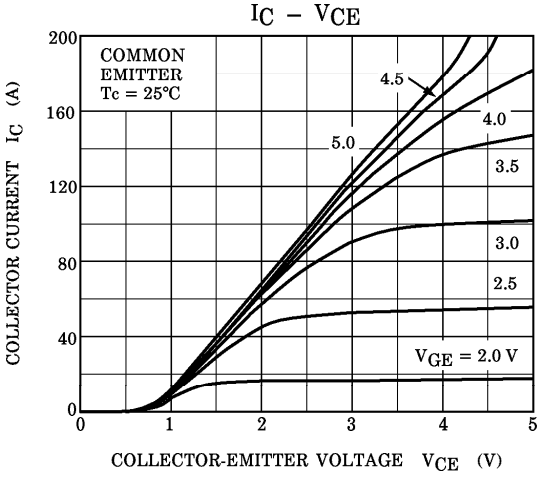
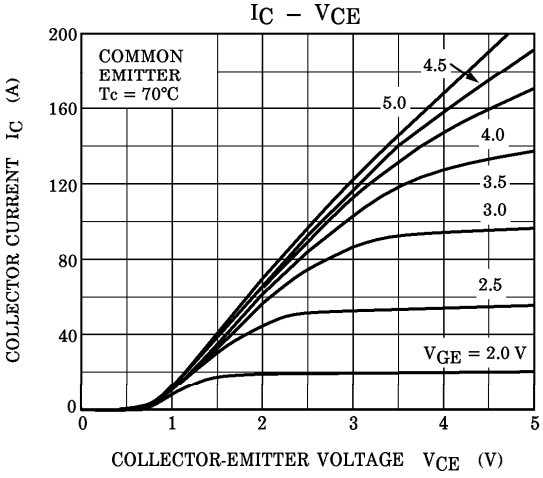
I_C – V_{CE}



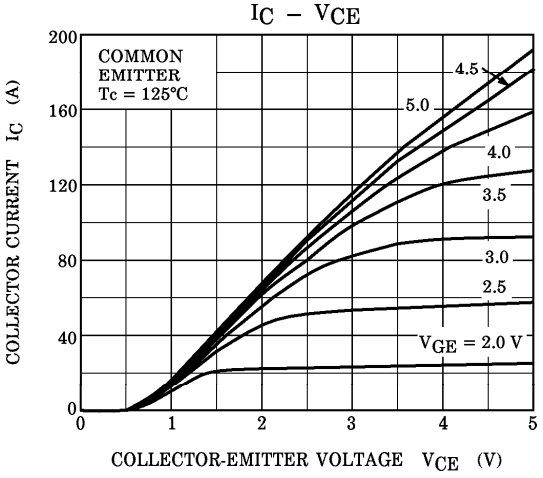
I_C – V_{CE}



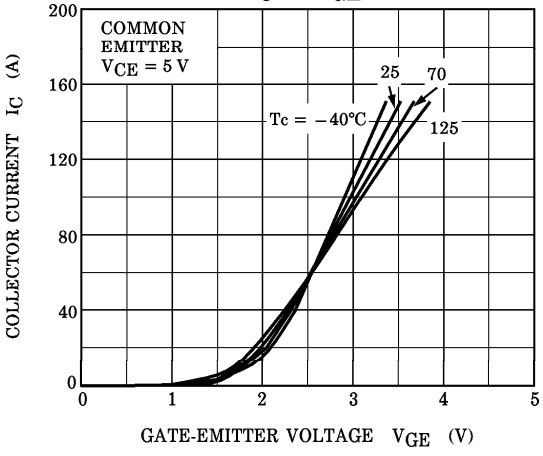
I_C – V_{CE}



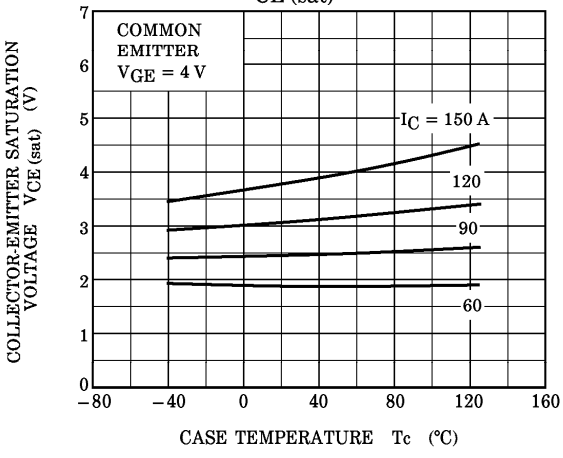
I_C – V_{CE}



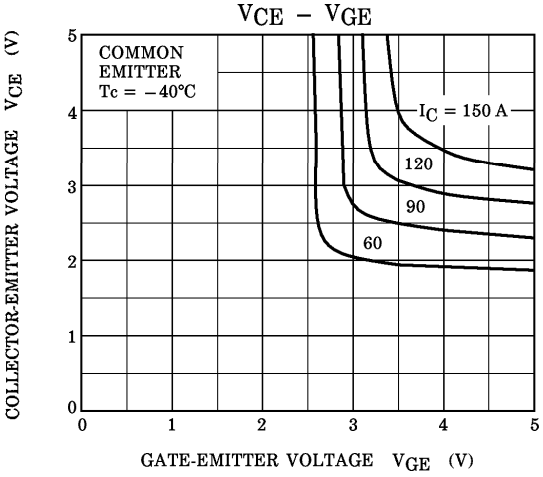
I_C – V_{GE}



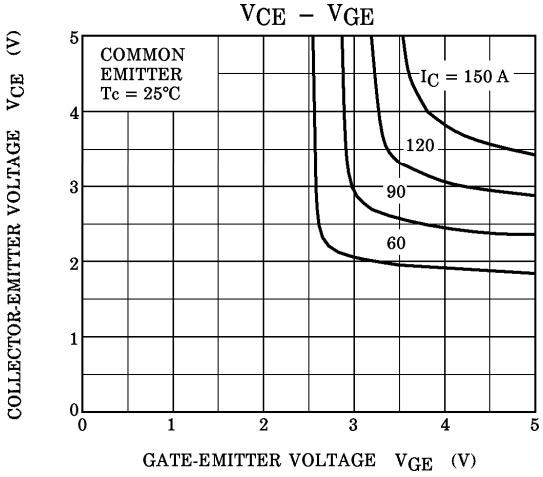
$V_{CE\,(sat)}$ – Tc



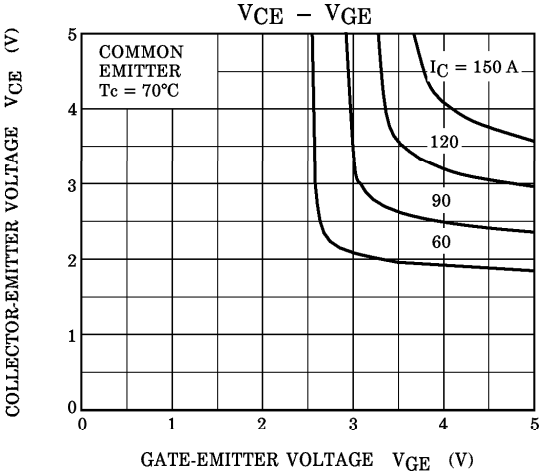
V_{CE} – V_{GE}



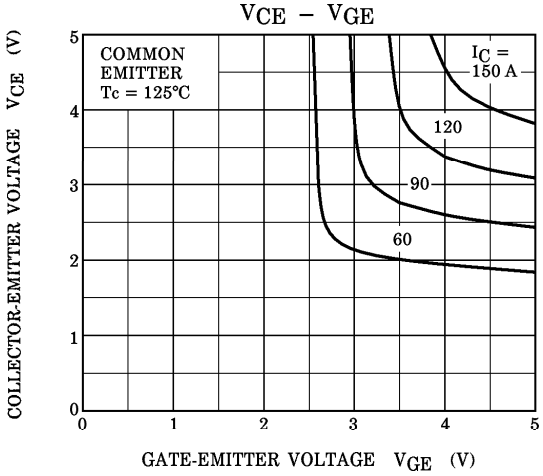
V_{CE} – V_{GE}



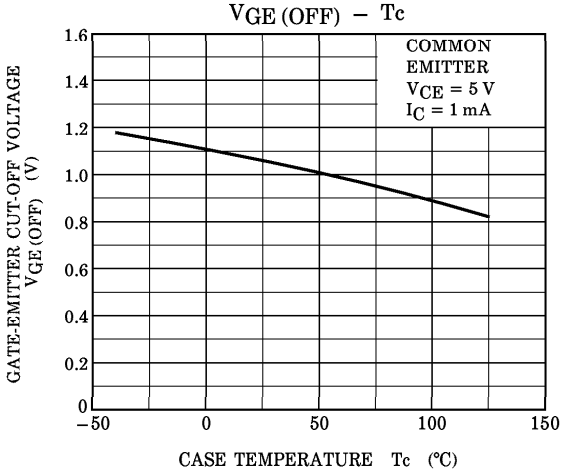
V_{CE} – V_{GE}



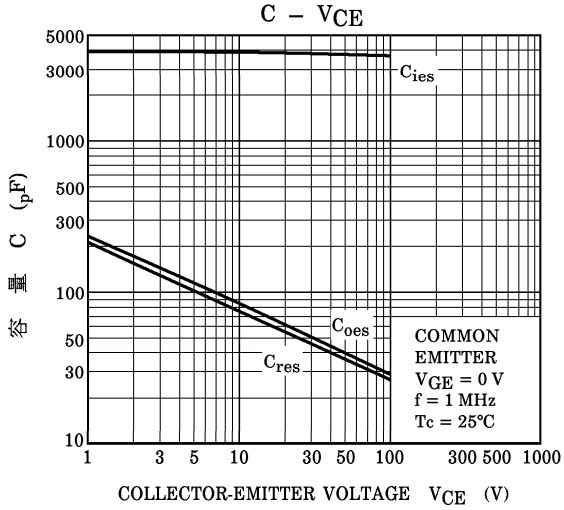
V_{CE} – V_{GE}



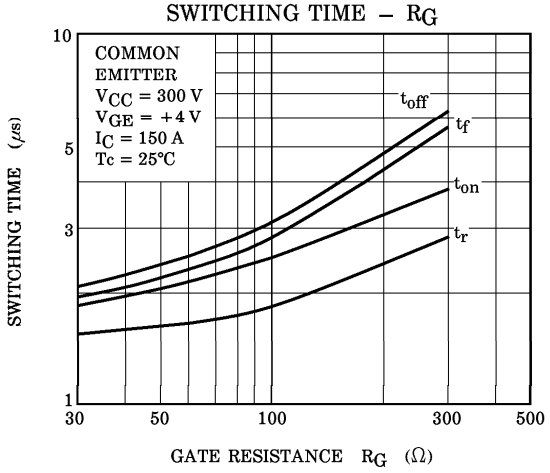
$V_{GE\,(OFF)}$ – Tc



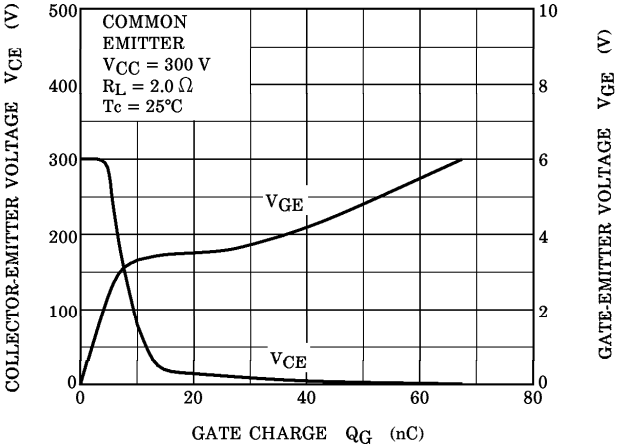
C – V_{CE}



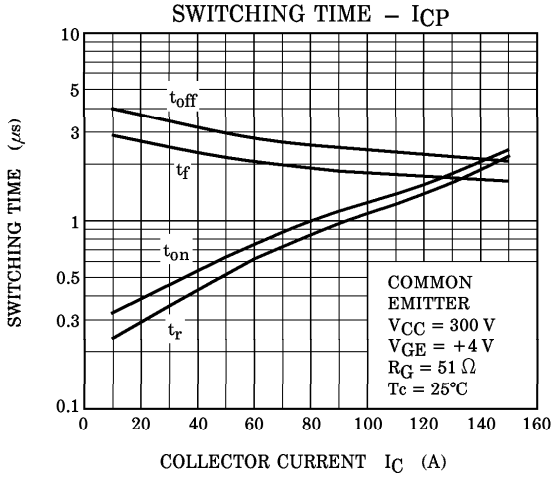
SWITCHING TIME – R_G



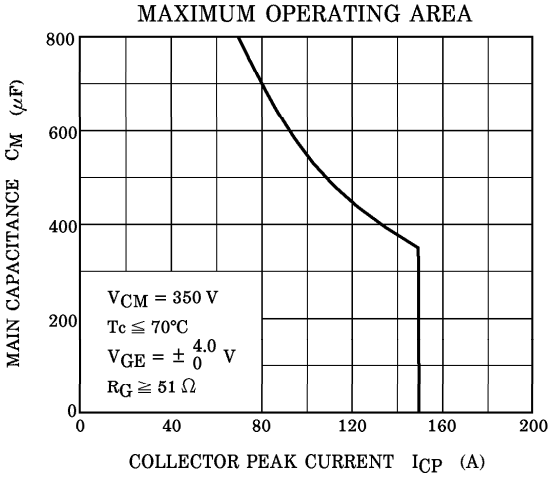
V_{CE}, V_{GE} – Q_G



SWITCHING TIME – I_{CP}



MAXIMUM OPERATING AREA



MINIMUM GATE DRIVE AREA