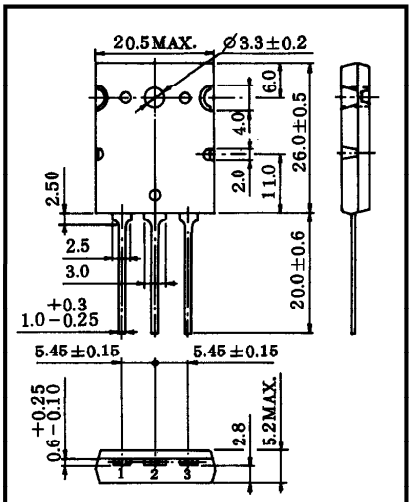
TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N-CHANNEL MOS TYPE

GT80J101

HIGH POWER SWITCHING APPLICATIONS.

- High Input Impedance
- High Speed : $t_f = 0.40\,\mu s$ (Max.)
- Low Saturation Voltage : $V_{CE(sat)} = 3.5V$ (Max.)
- Enhancement-Mode

Unit in mm



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

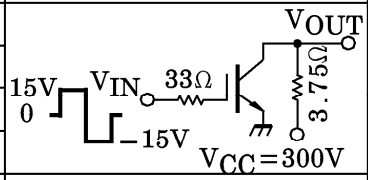
JEDEC	—
EIAJ	—
TOSHIBA	2-21F1C

Weight : 9.75g

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	80	A
	1ms	I_{CP}	160	
Collector Power Dissipation (Tc = 25°C)		P_C	200	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C
Screw Torque		—	0.8	N·m

ELECTRICAL CHARACTERISTIC (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}	$V_{CE} = 600V$, $V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE(OFF)}$	$I_C = 80mA$, $V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}(1)$	$I_C = 10A$, $V_{GE} = 15V$	—	—	2.0	V
		$V_{CE(sat)}(2)$	$I_C = 80A$, $V_{GE} = 15V$	—	2.5	3.5	
Input Capacitance		C_{ies}	$V_{CE} = 10V$, $V_{GE} = 0$, f = 1MHz	—	5500	—	pF
Switching Time	Rise Time	t_r		—	0.3	0.6	μs
	Turn-on Time	t_{on}			0.5	0.8	
	Fall Time	t_f			0.25	0.40	
	Turn-off Time	t_{off}		—	0.7	1.0	
Thermal Resistance		$R_{th(j-c)}$		—	—	0.625	°C/W

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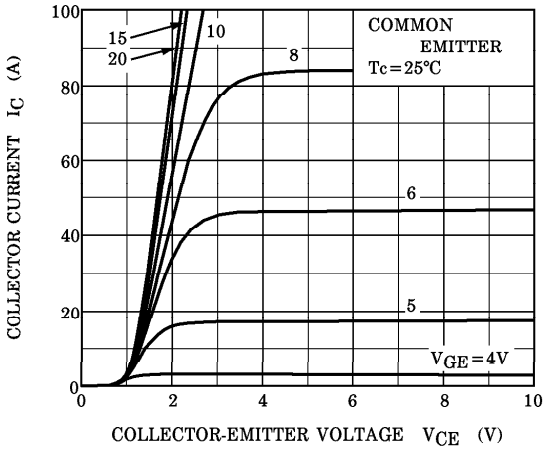
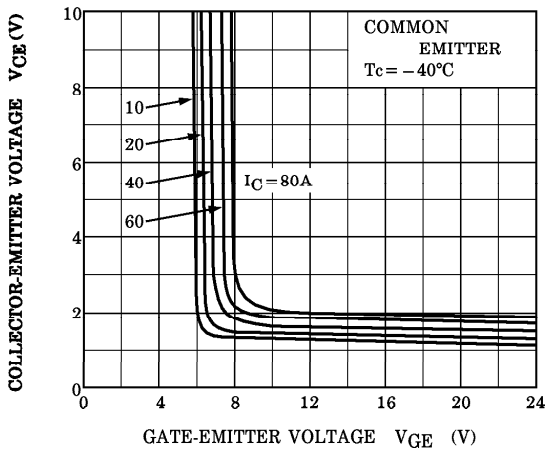
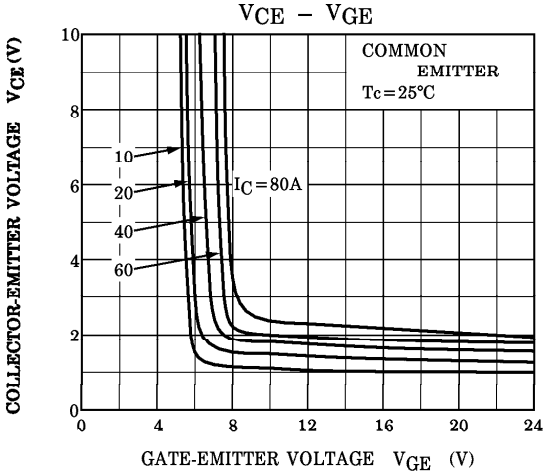
I_C – V_{CE}



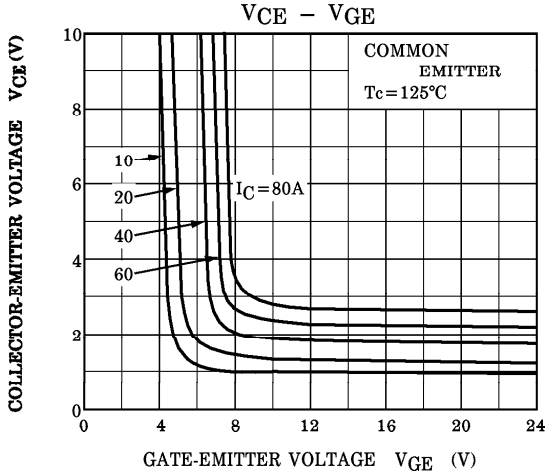
V_{CE} – V_{GE}



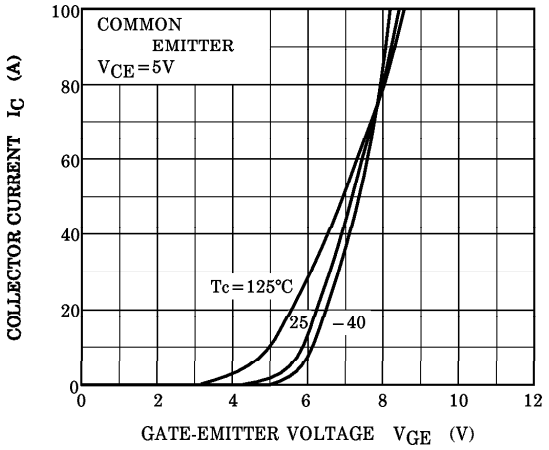
V_{CE} – V_{GE}



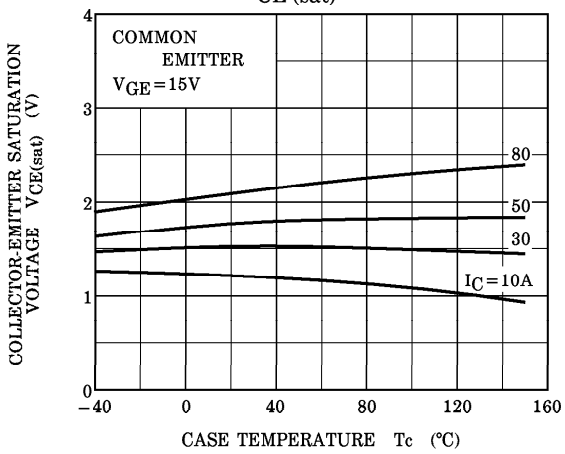
V_{CE} – V_{GE}



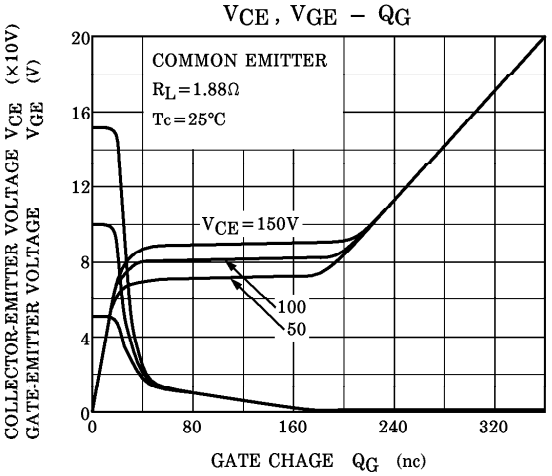
I_C – V_{GE}



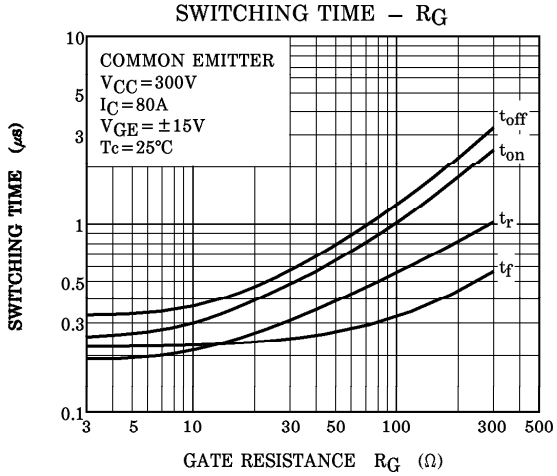
$V_{CE\,(sat)}$ – Tc



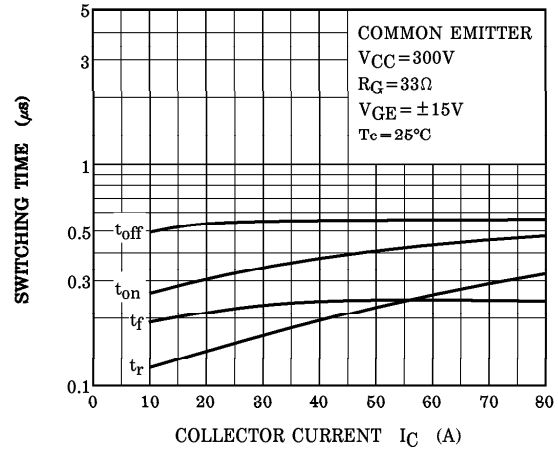
V_{CE}, V_{GE} – Q_G



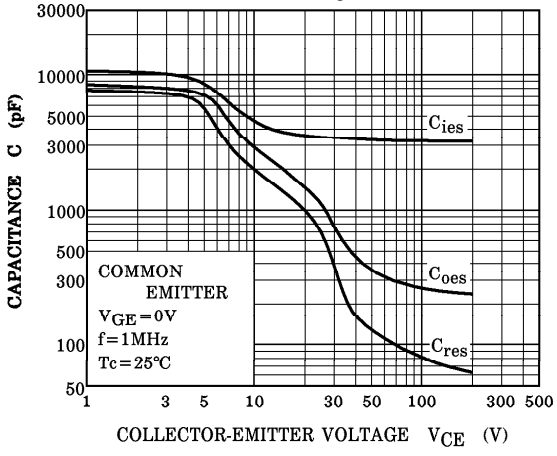
SWITCHING TIME – R_G



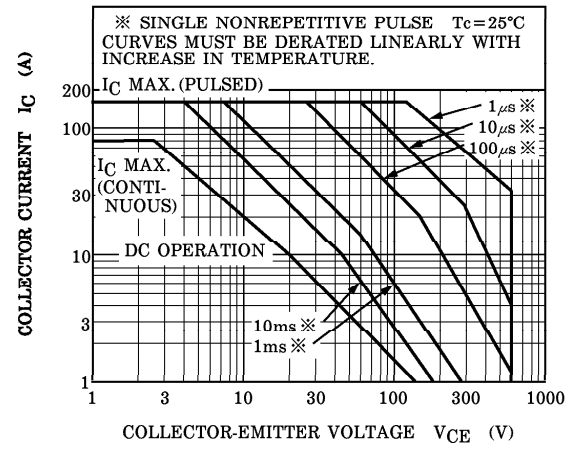
SWITCHING TIME – I_C



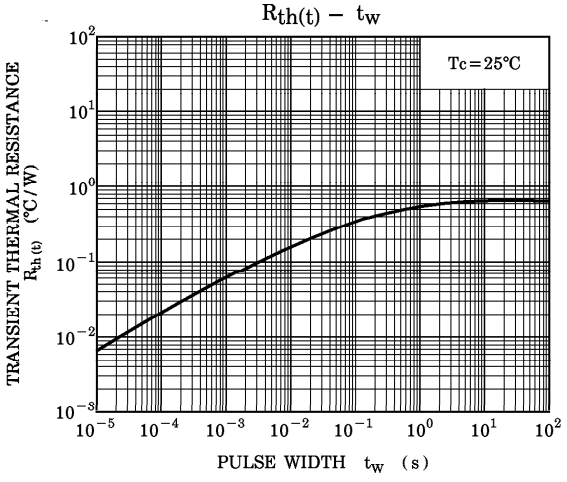
C – V_{CE}



SAFE OPERATING AREA



$R_{th(t)}$ – t_w



REVERSE BIAS SOA