

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N-CHANNEL IGBT

# GT60M104

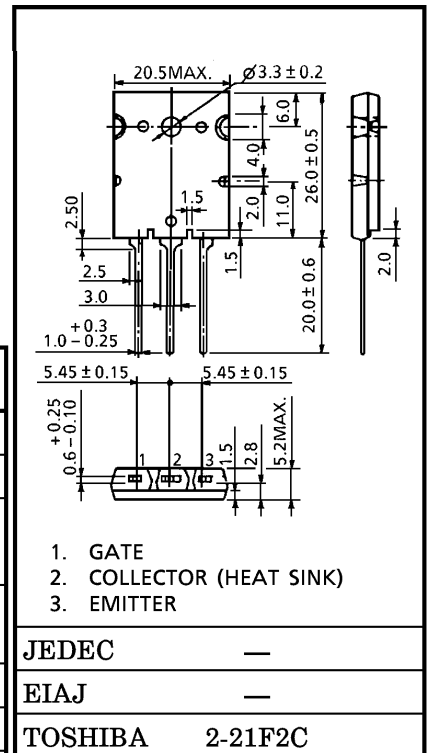
HIGH POWER SWITCHING APPLICATIONS

Unit in mm

- High Input Impedance
- High Speed :  $t_f = 0.4 \mu s$  (Max.)
- Low Saturation Voltage :  $V_{CE(sat)} = 3.7V$  (Max.)
- Enhancement-Mode
- Recommended FRD S5J12

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

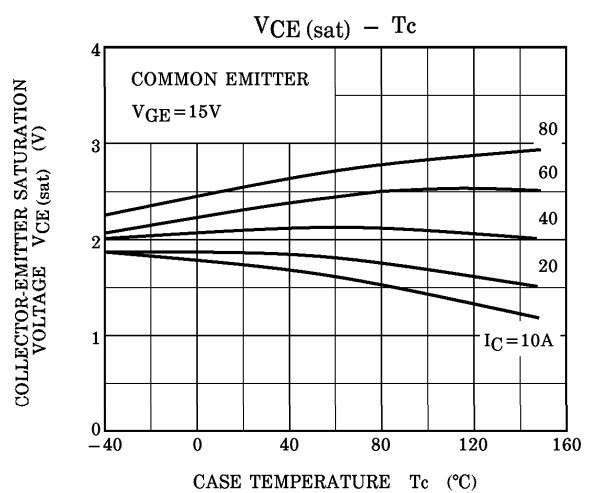
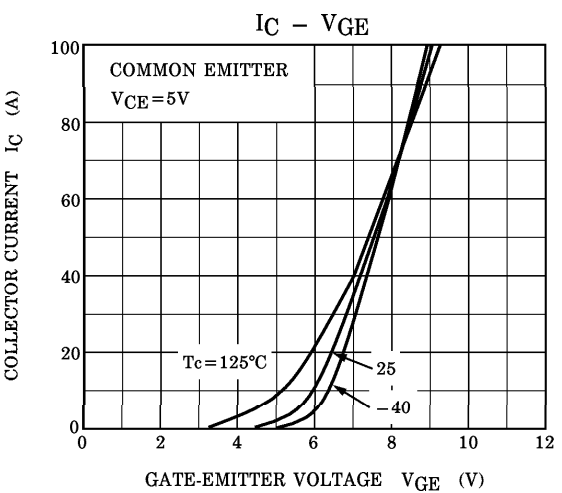
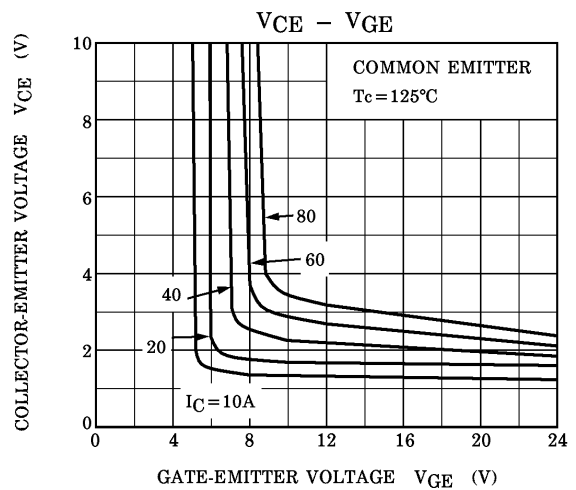
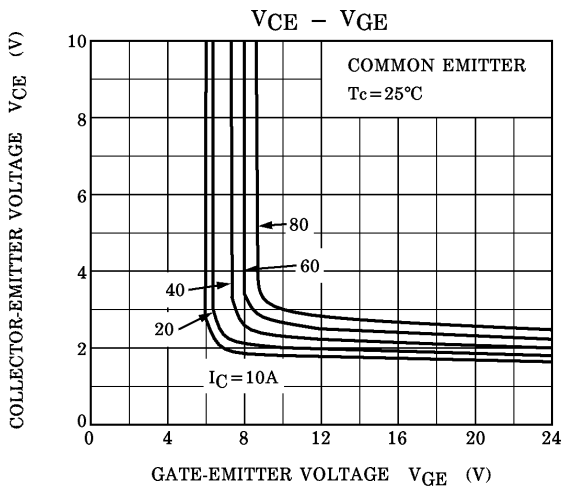
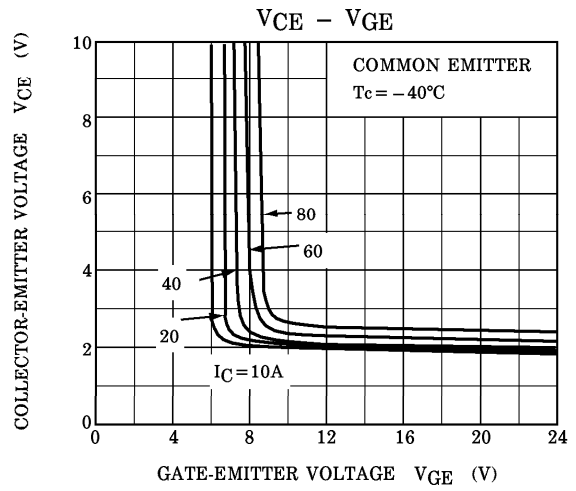
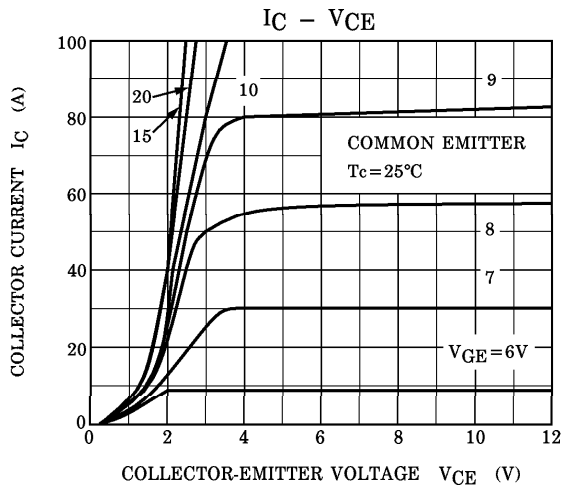
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CES}$	900	V
Gate-Emitter Voltage	$V_{GES}$	$\pm 25$	V
Collector Current	DC	$I_C$	60
	1ms	$I_{CP}$	120
Collector Power Dissipation ( $T_c = 25^\circ C$ )	$P_C$	200	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	$-55 \sim 150$	$^\circ C$
Screw Torque	—	0.8	N·m

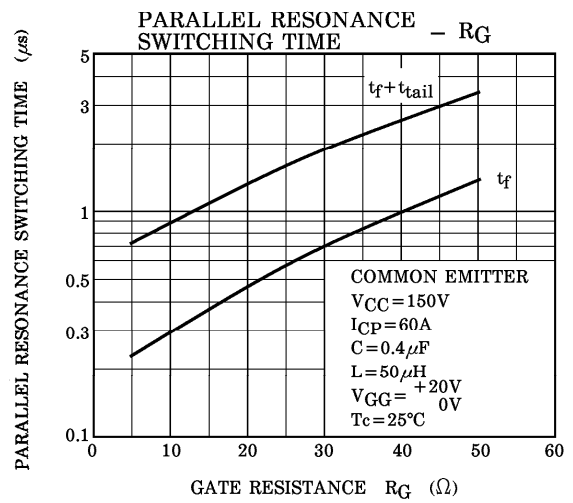
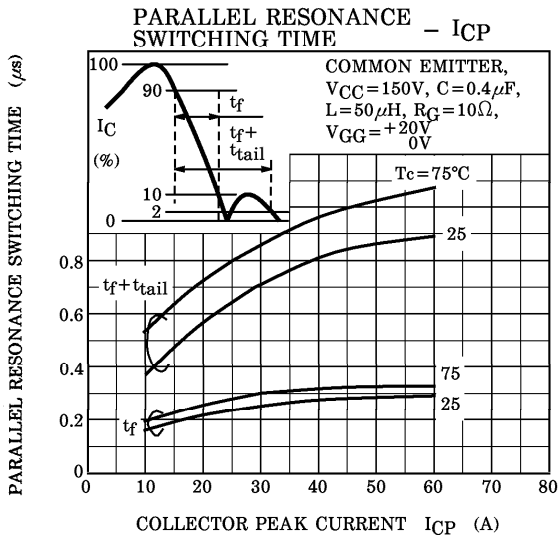
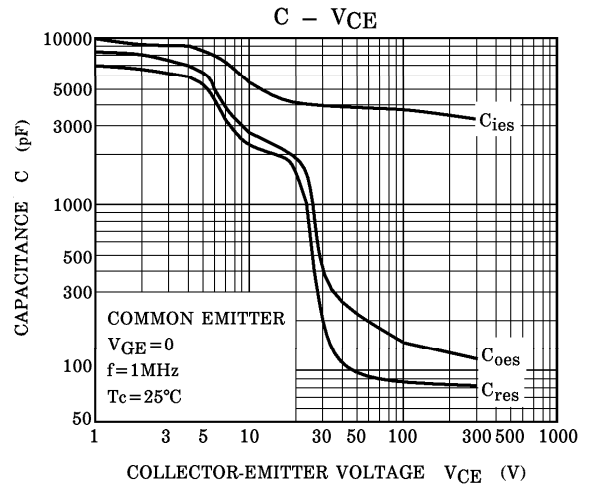
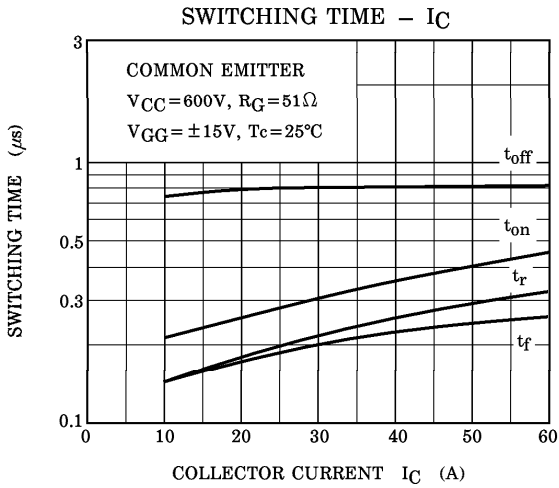
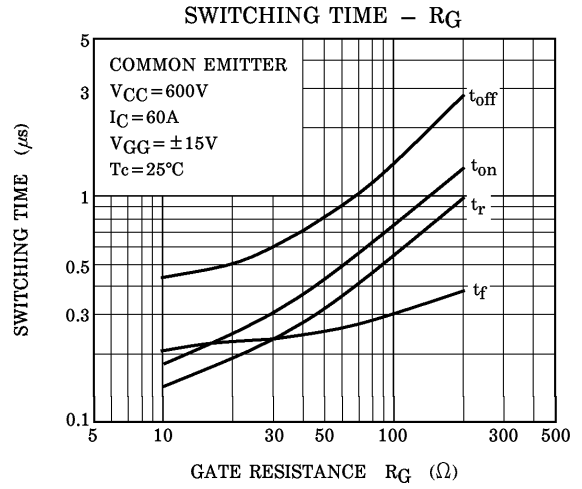
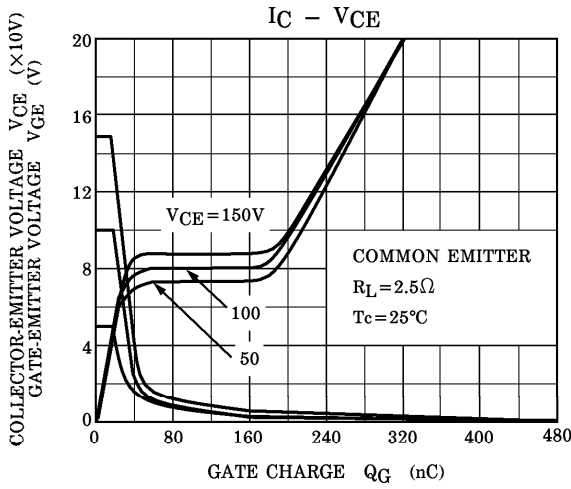


Weight : 9.75g

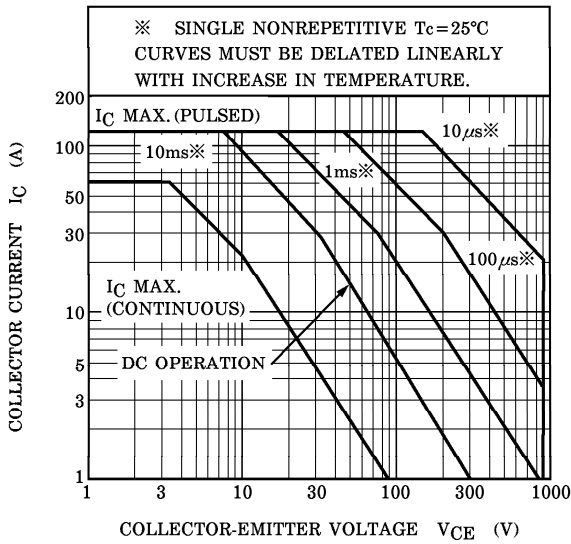
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	$I_{GES}$	$V_{GE} = \pm 25V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector Cut-off Current	$I_{CES}$	$V_{CE} = 900V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage	$V_{GE(OFF)}$	$I_C = 60mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)} (1)$	$I_C = 10A, V_{GE} = 15V$	—	—	2.4	V
	$V_{CE(sat)} (2)$	$I_C = 60A, V_{GE} = 15V$	—	2.4	3.7	
Input Capacitance	$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	5300	—	pF
Switching Time	Rise Time	$t_r$	—	0.25	0.60	$\mu s$
	Turn-on Time	$t_{on}$	—	0.35	0.80	
	Fall Time	$t_f$	—	0.25	0.40	
	Turn-off Time	$t_{off}$	—	0.50	1.00	
Thermal Resistance	$R_{th(j-c)}$	—	—	—	0.625	$^\circ C / W$

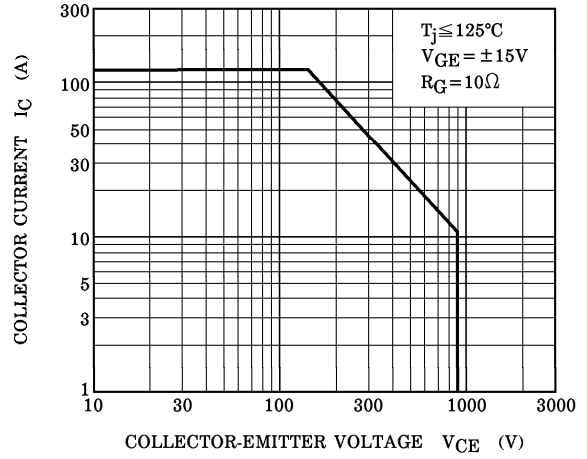




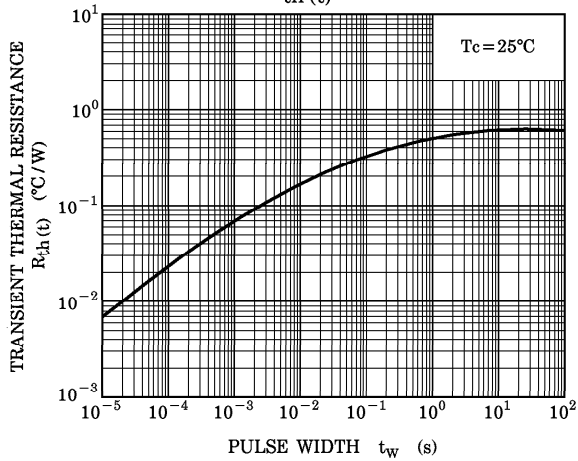
SAFE OPERATING AREA



REVERSE BIAS SOA



$R_{th}(t) - t_w$



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