

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N-CHANNEL IGBT

GT60M104

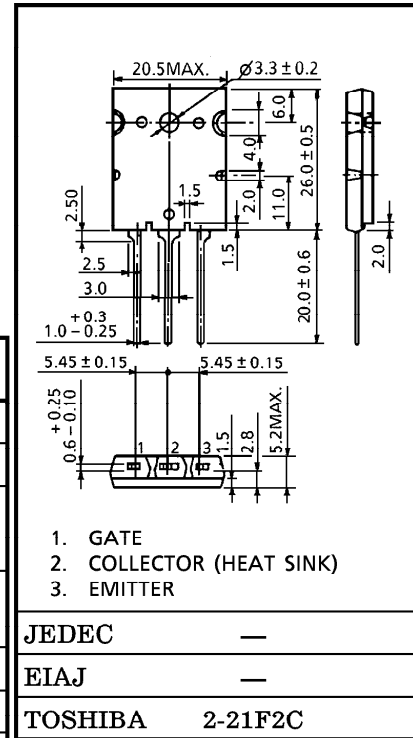
HIGH POWER SWITCHING APPLICATIONS

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}	± 25	V
Collector Current	DC	I_C	60	A
	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



JEDEC	—
EIAJ	—
TOSHIBA	2-21F2C

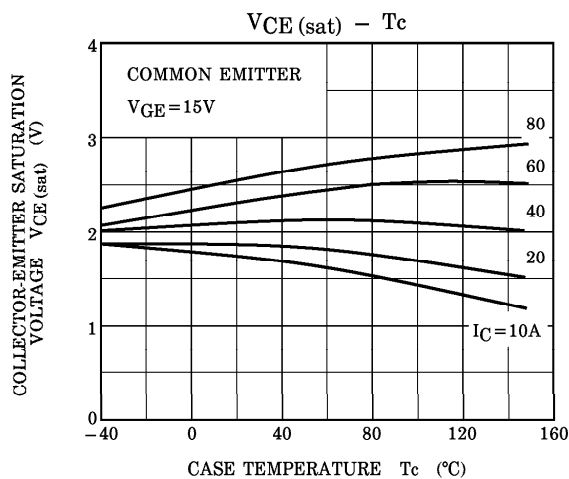
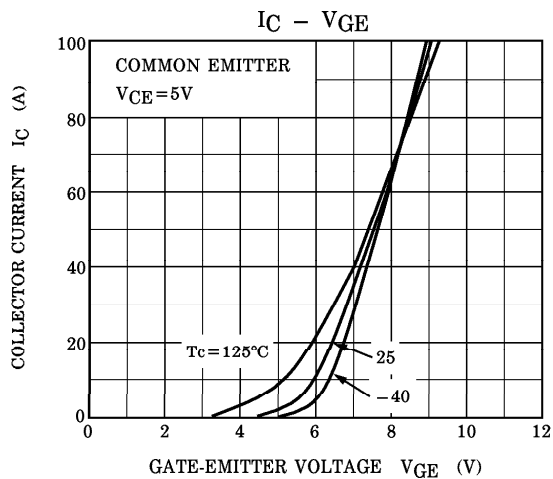
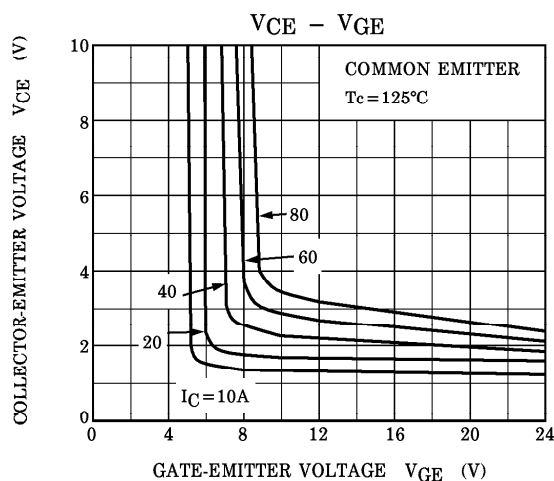
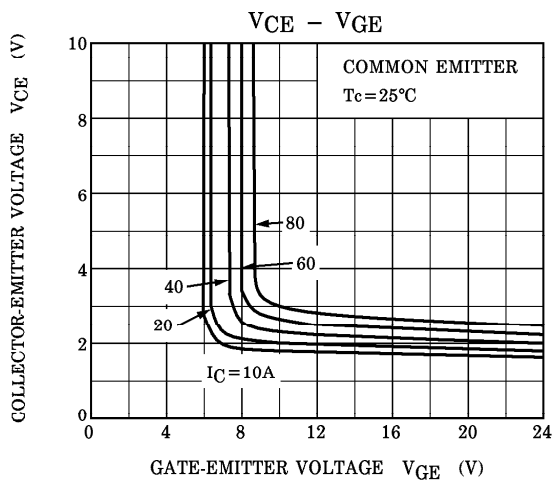
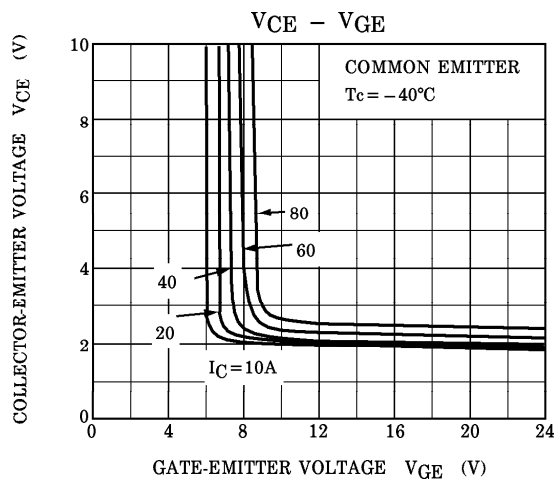
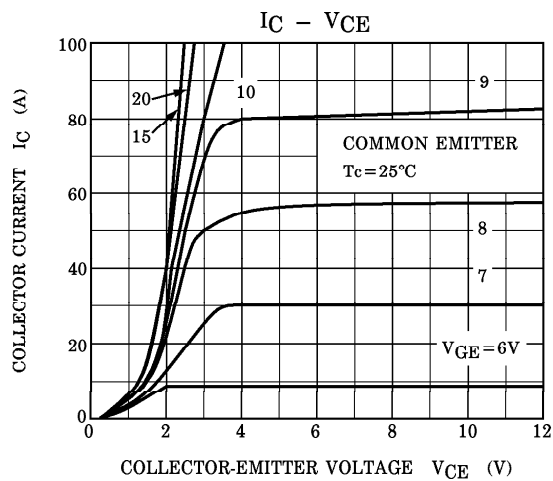
Weight : 9.75g

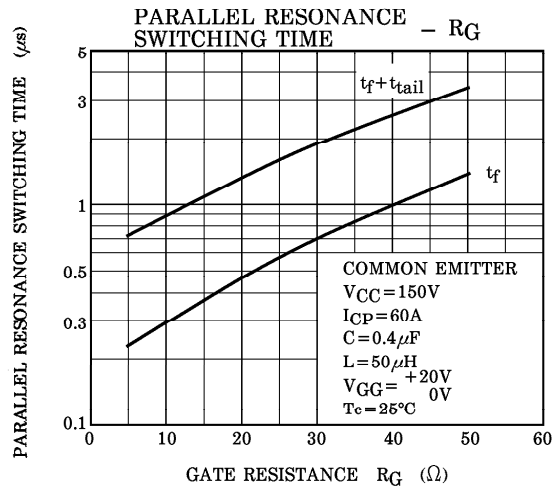
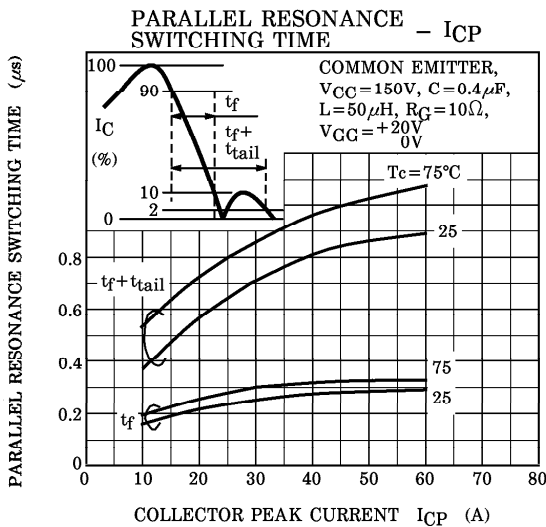
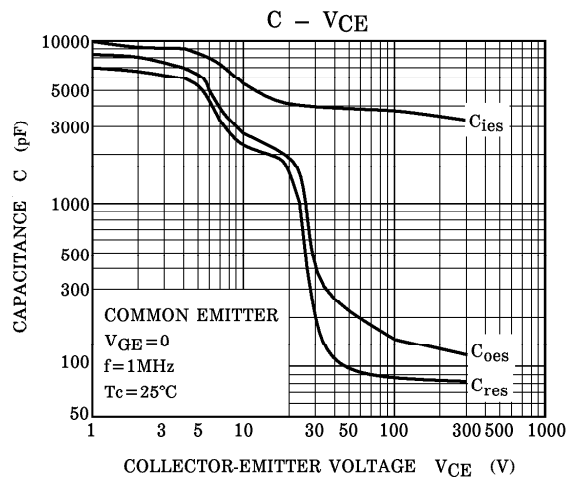
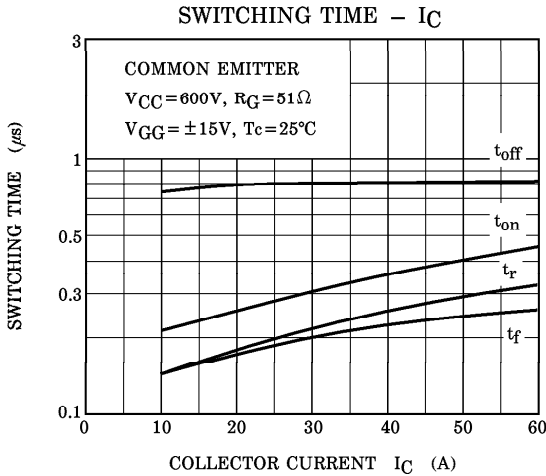
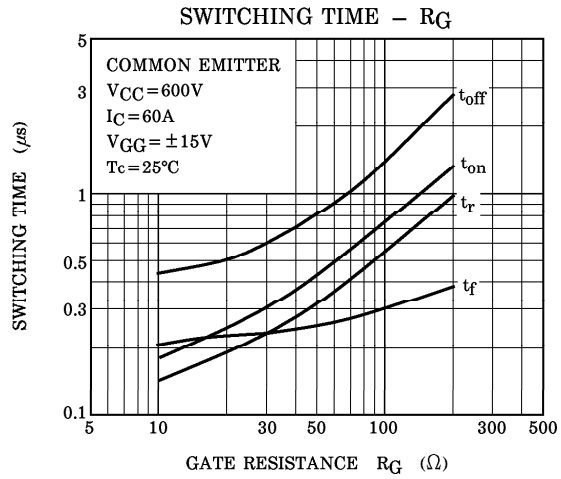
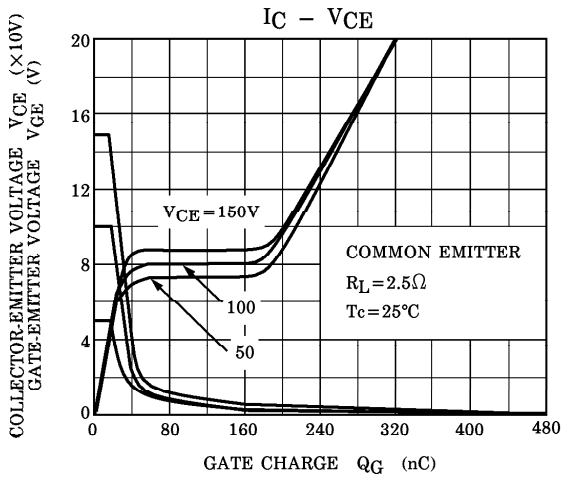
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 25V, V_{CE} = 0$	—	—	± 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	μs
	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	$^\circ C / W$	

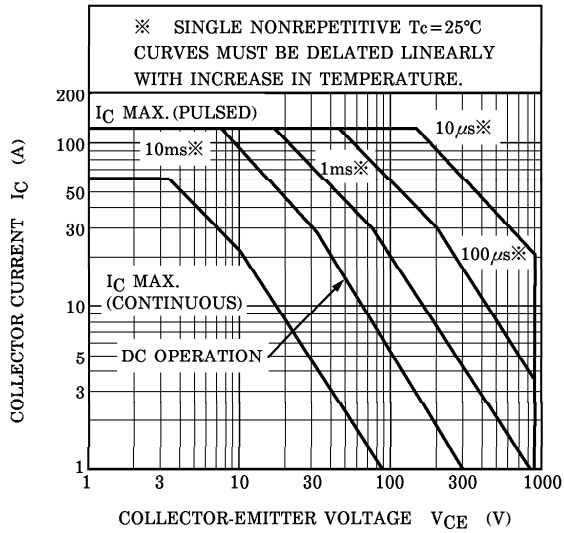
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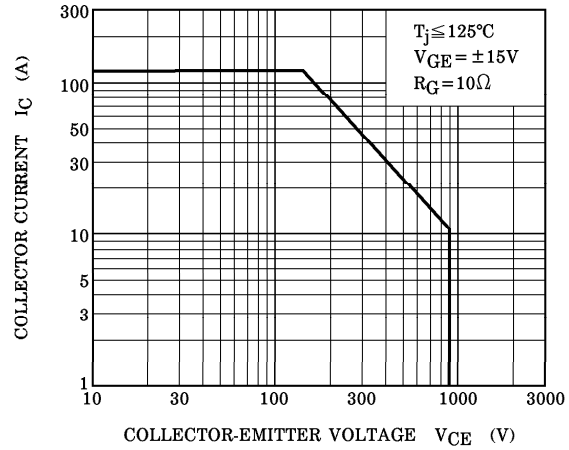




SAFE OPERATING AREA



REVERSE BIAS SOA



$R_{th}(t) - t_w$

