

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL IGBT

GT8J102(SM)

Unit in mm

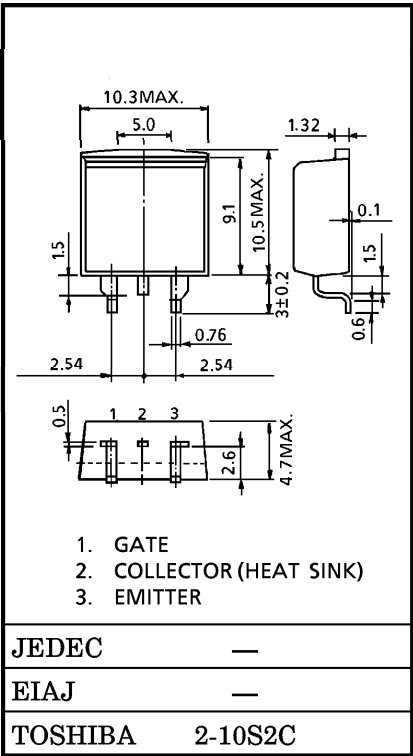
HIGH POWER SWITCHING APPLICATIONS

MOTOR CONTROL APPLICATIONS

- High Input Impedance
- High Speed : $t_f=0.35\mu s$ (Max.)
- Low Saturation Voltage : $V_{CE(sat)}=4.0V$ (Max.)
- Enhancement-Mode

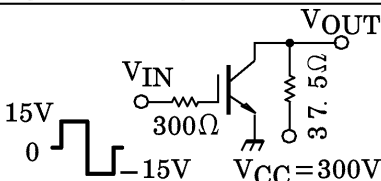
MAXIMUM RATINGS (Ta = 25°C)

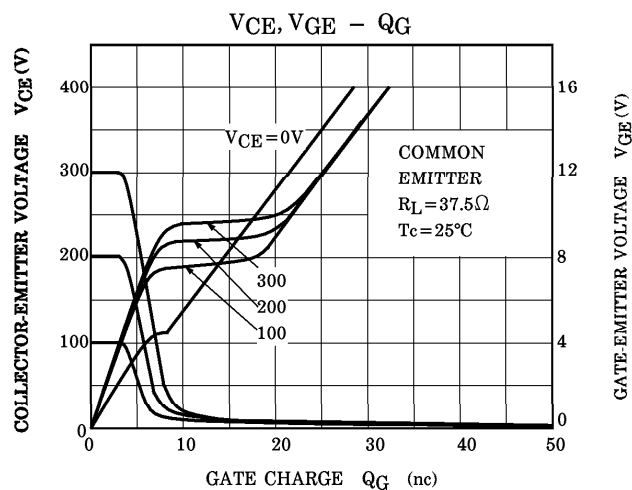
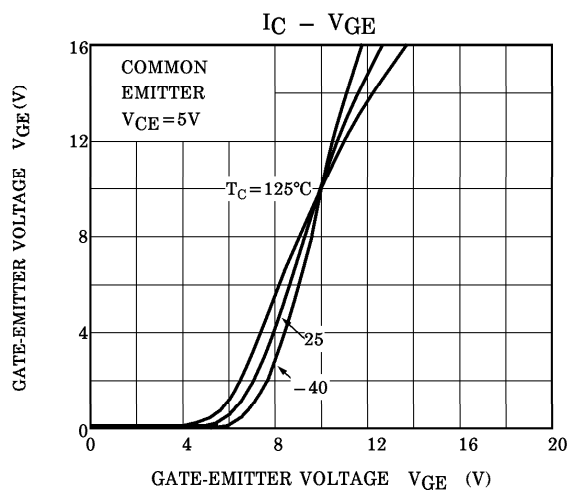
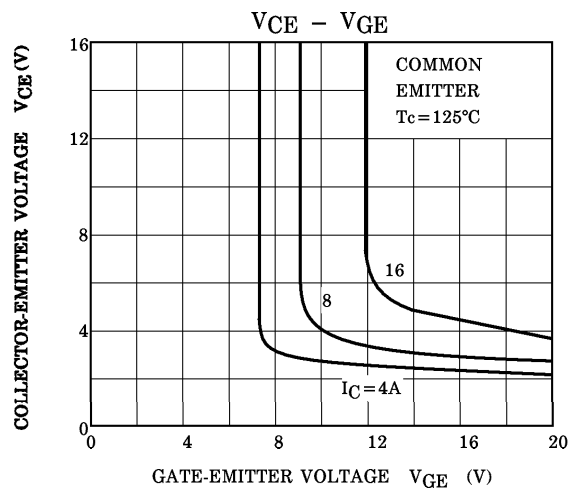
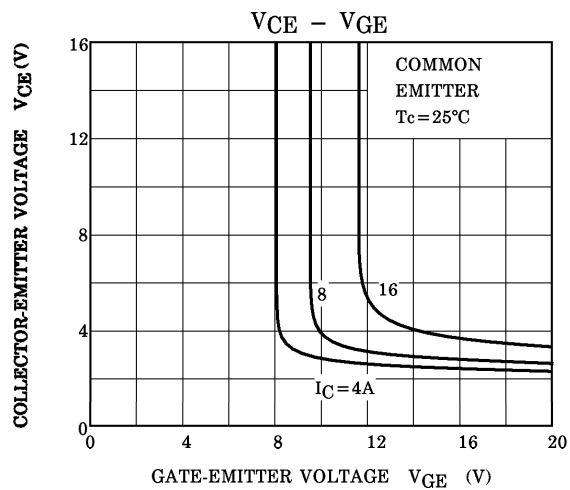
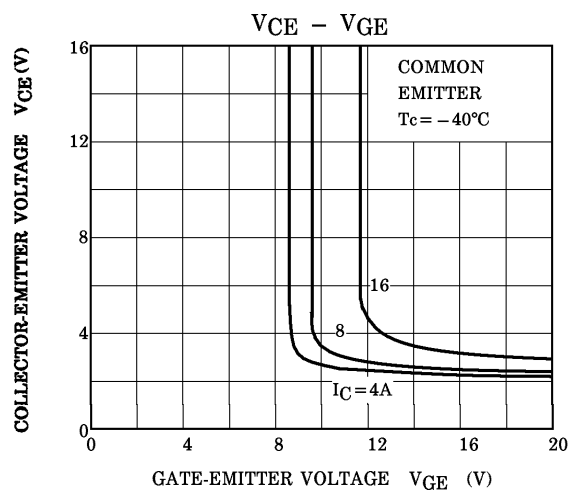
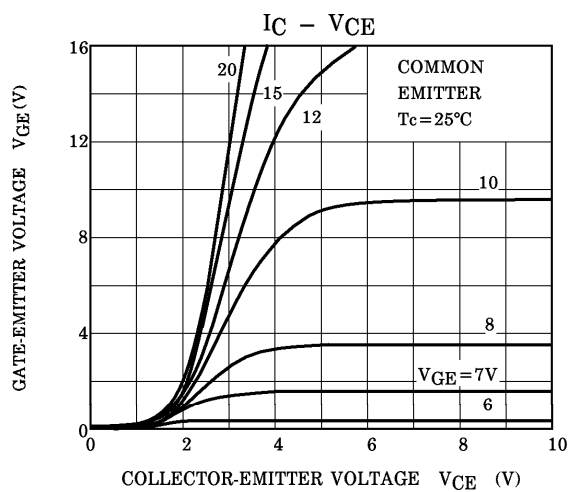
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	± 20	V
Collector Current	DC	I_C	8	A
	1ms	I_{CP}	16	
Collector Power Dissipation (Tc = 25°C)		P_C	50	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

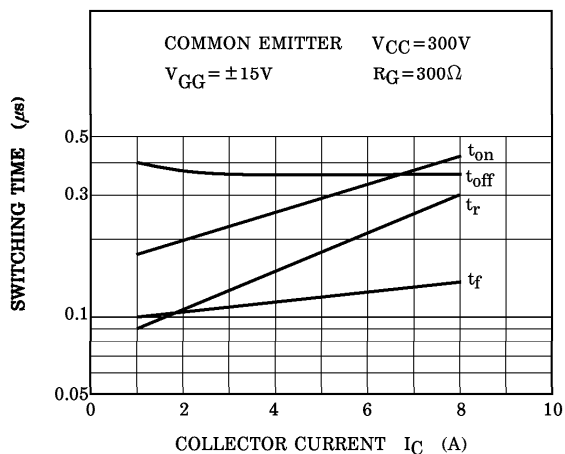
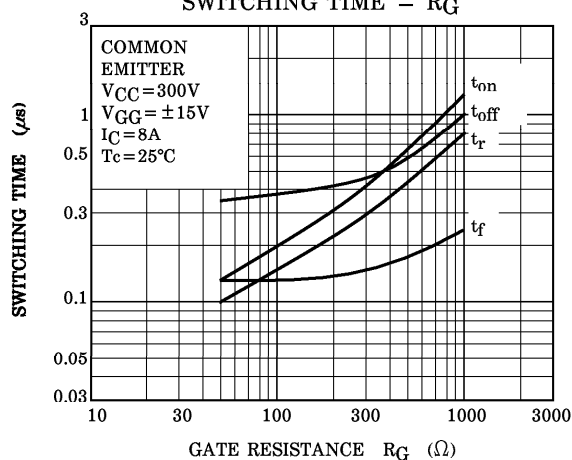
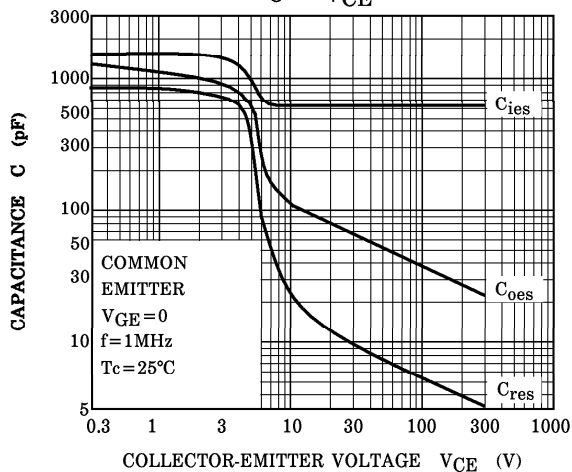
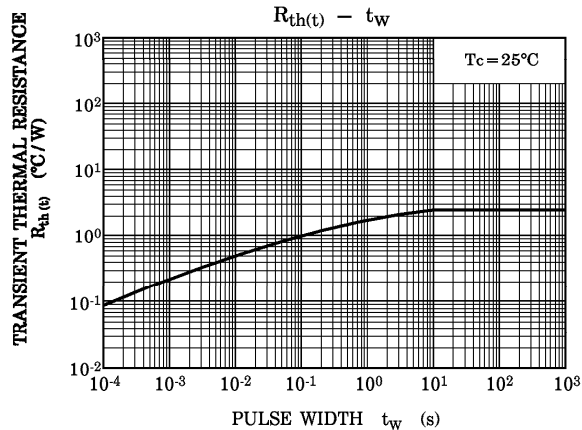


Weight : 1.4g

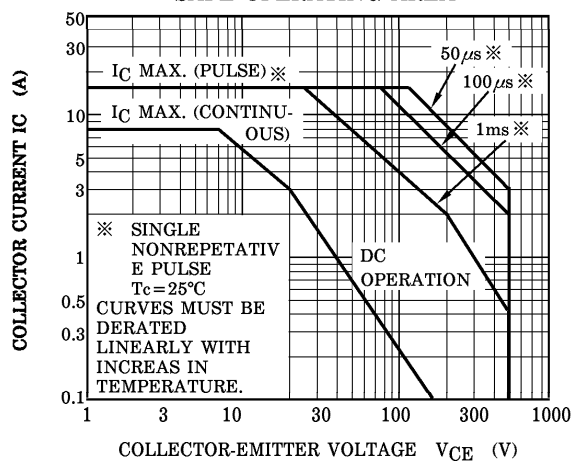
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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		$V_{GE(OFF)}$	$I_C = 5V, I_C = 8mA$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 8A, V_{GE} = 15V$	—	3.0	4.0	V
Input Capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	650	—	pF
Switching Time	Rise Time	t_r		—	0.3	0.6	μs
	Turn-on Time	t_{on}		—	0.4	0.8	
	Fall Time	t_f		—	0.15	0.35	
	Turn-off Time	t_{off}		—	0.5	1.0	

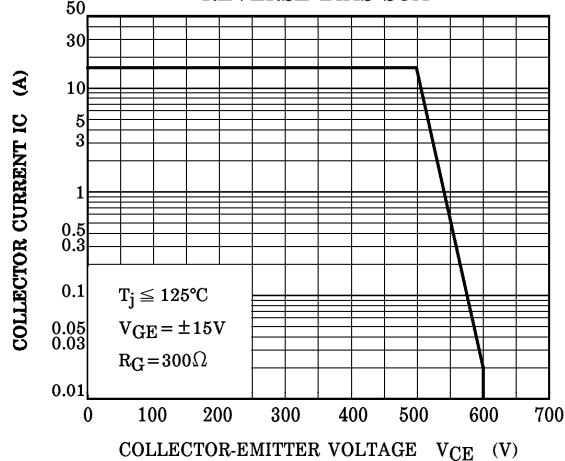


SWITCHING TIME - I_C SWITCHING TIME - R_G C - V_{CE}  $R_{th}(t) - t_w$ 

SAFE OPERATING AREA



REVERSE BIAS SOA



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