

TOSHIBA Insulated Gate Bipolar Transistor Silicon N Channel IGBT

GT80J101B

High Power Switching Applications

- Enhancement mode type
- High speed: $t_f = 0.40 \mu s$ (max) ($I_C = 80 A$)
- Low saturation voltage: $V_{CE(sat)} = 2.9 V$ (max) ($I_C = 80 A$)

Maximum Ratings ($T_a = 25^\circ C$)

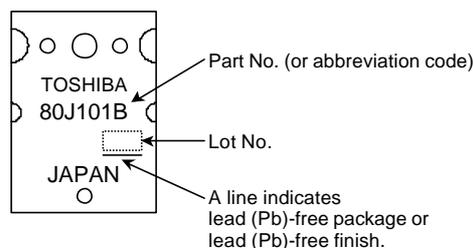
Characteristics	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	600	V
Gate-emitter voltage	V_{GES}	± 20	V
Continuous collector current	@ $T_c = 100^\circ C$	33	A
	@ $T_c = 25^\circ C$	80	
Pulsed collector current (Note 1)	I_{CP}	160	A
Collector power dissipation	@ $T_c = 100^\circ C$	80	W
	@ $T_c = 25^\circ C$	200	
	@ $T_a = 25^\circ C$	3.5	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55~150	$^\circ C$
Screw torque	—	0.8	N·m

Note 1: The Maximum rating of $I_{CP}=160A$ is limited by pulse (1ms).
Refer to the graph of safe operating area for the detail.

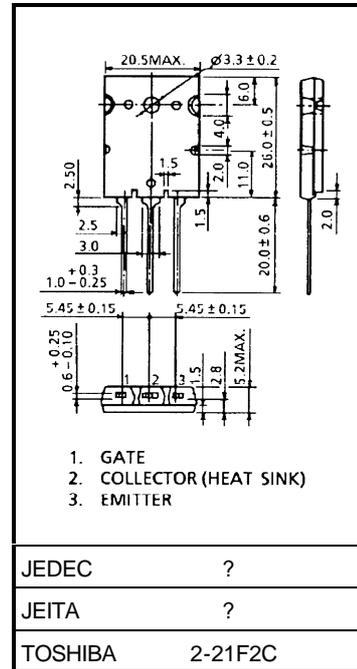
Thermal Characteristics

Characteristics	Symbol	Rating	Unit
Thermal resistance , junction to case ($T_c = 25^\circ C$)	$R_{th(j-c)}$	0.625	$^\circ C/W$
Thermal resistance , junction to air ($T_a = 25^\circ C$)	$R_{th(j-a)}$	35.7	$^\circ C/W$

MARKING



Unit: mm



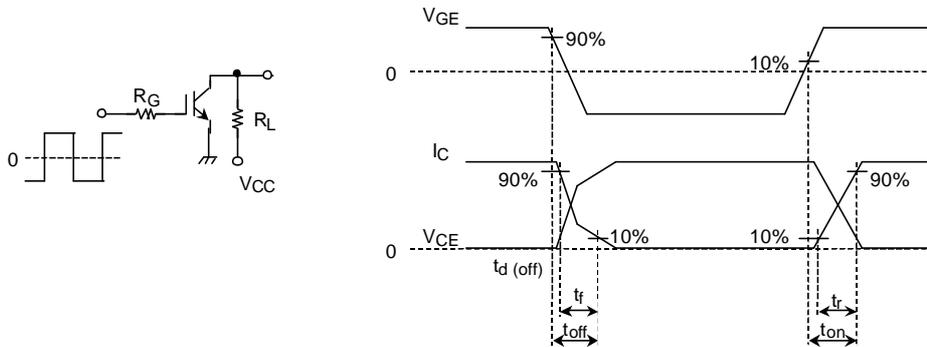
JEDEC	?
JEITA	?
TOSHIBA	2-21F2C

Weight: 9.75 g (typ.)

Electrical Characteristics (Ta = 25°C)

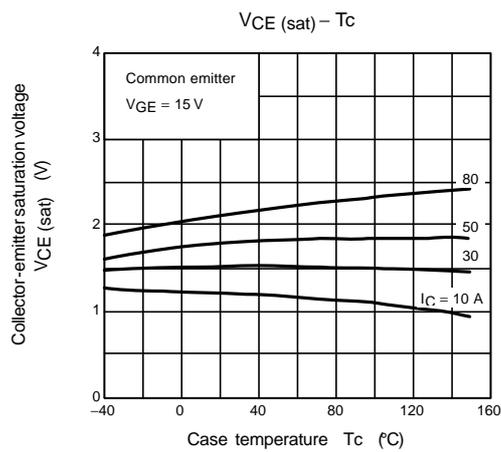
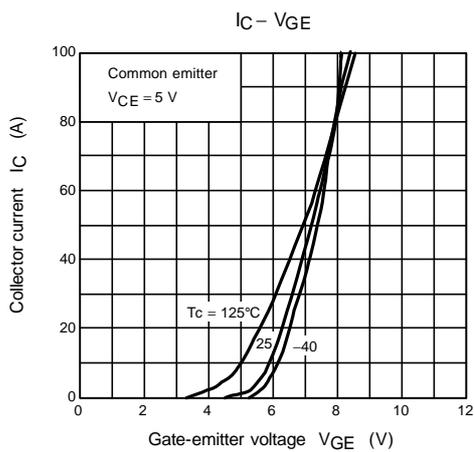
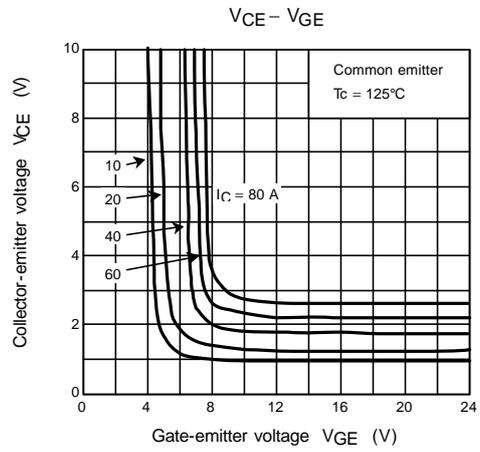
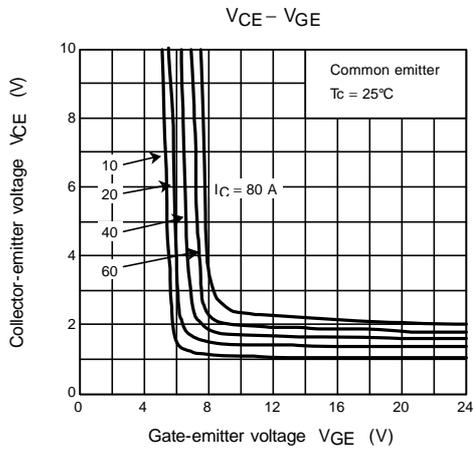
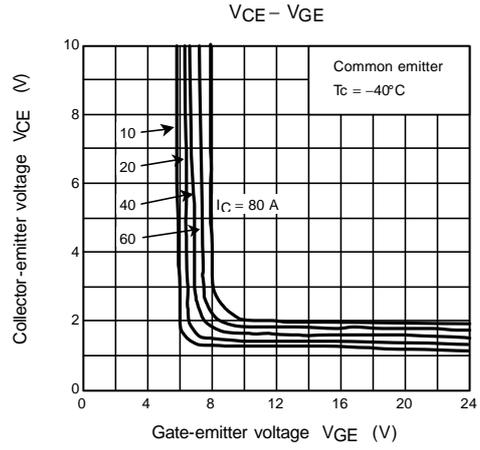
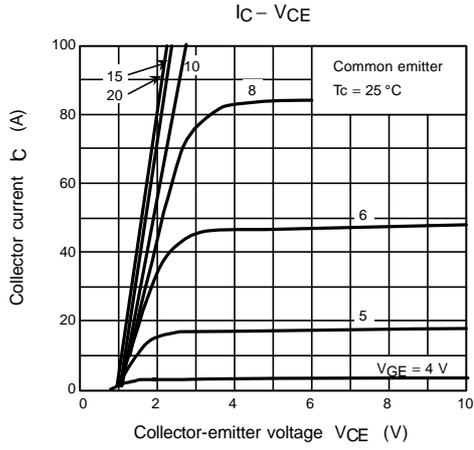
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GES}	$V_{GE} = \pm 25 \text{ V}, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current	I_{CES}	$V_{CE} = 600 \text{ V}, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage	$V_{GE (OFF)}$	$V_{CE} = 5 \text{ V}, I_C = 80 \text{ mA}$	3.0	—	6.0	V
Collector-emitter saturation voltage	$V_{CE (sat) (1)}$	$I_C = 10 \text{ A}, V_{GE} = 15 \text{ V}$	—	—	2.0	V
	$V_{CE (sat) (2)}$	$I_C = 80 \text{ A}, V_{GE} = 15 \text{ V}$	—	2.4	2.9	
Input capacitance	C_{ies}	$V_{CE} = 10 \text{ V}, V_{GE} = 0, f = 1 \text{ MHz}$	—	5500	—	pF
Switching time	Rise time	Resistive load $V_{CC} = 300 \text{ V}, I_C = 80 \text{ A}$ $V_{GG} = \pm 15 \text{ V}, R_G = 33\Omega$ (Note 2)	—	0.3	—	μs
	Turn-on time		—	0.5	—	
	Fall time		—	0.25	0.40	
	Turn-off time		—	0.7	—	

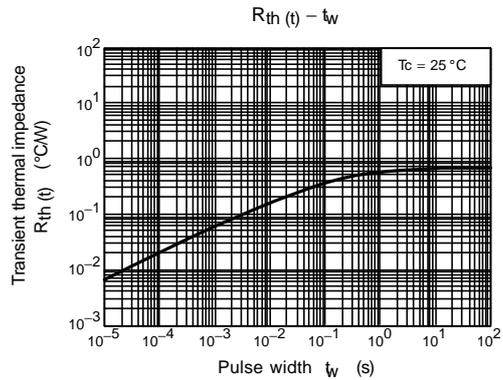
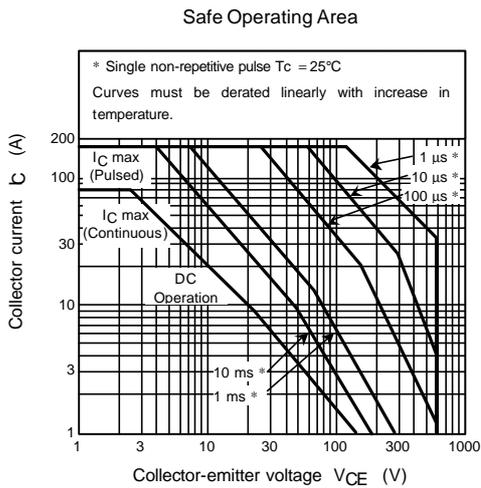
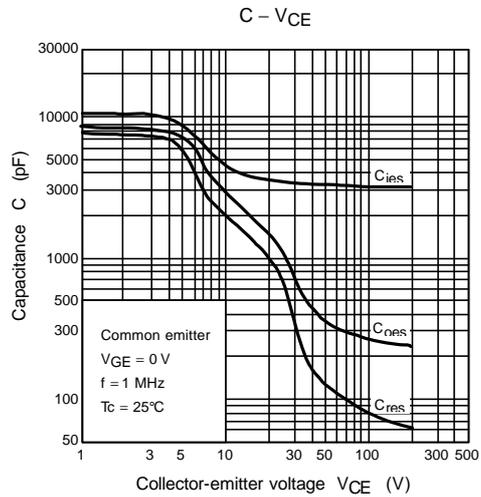
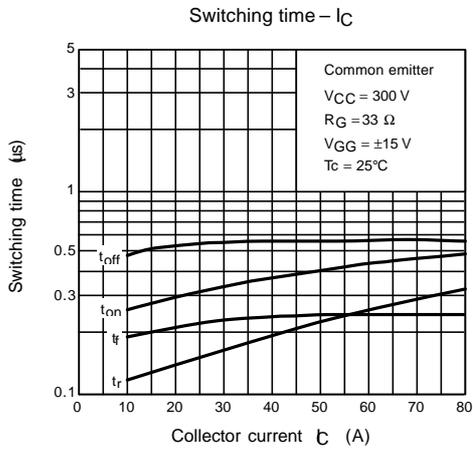
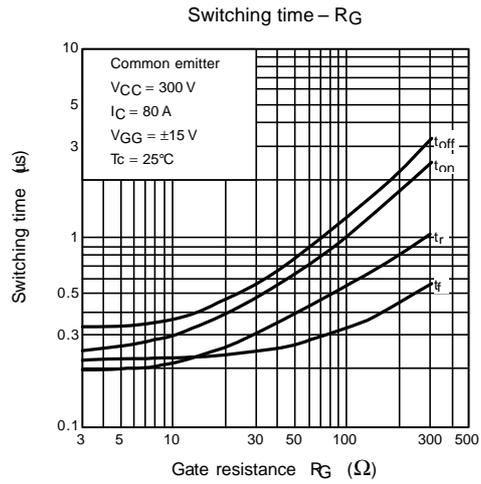
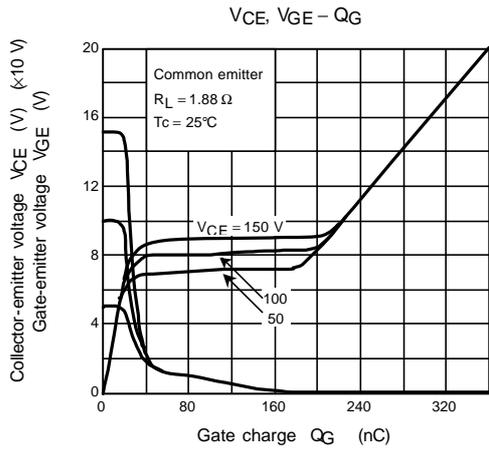
Note 2: Switching time measurement circuit and input/output waveforms.

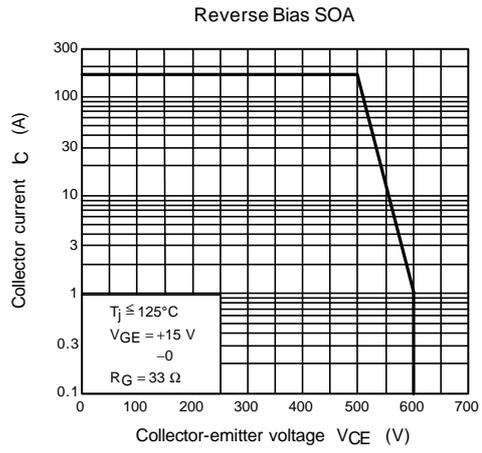


Caution on handling

This device is MOS gate type. Therefore, please care about ESD when use.







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