

TOSHIBA Insulated Gate Bipolar Transistor Silicon N Channel IGBT

# GT40G121

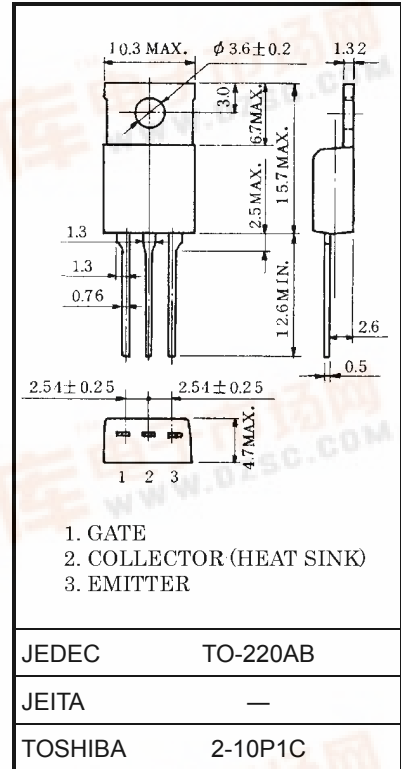
The 4th Generation  
Current Resonance Inverter Switching Applications

Unit: mm

- Enhancement-mode
- High speed:  $t_f = 0.30 \mu s$  (typ.) ( $I_C = 60 A$ )
- Low saturation voltage:  $V_{CE(sat)} = 1.8 V$  (typ.) ( $I_C = 60 A$ )

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

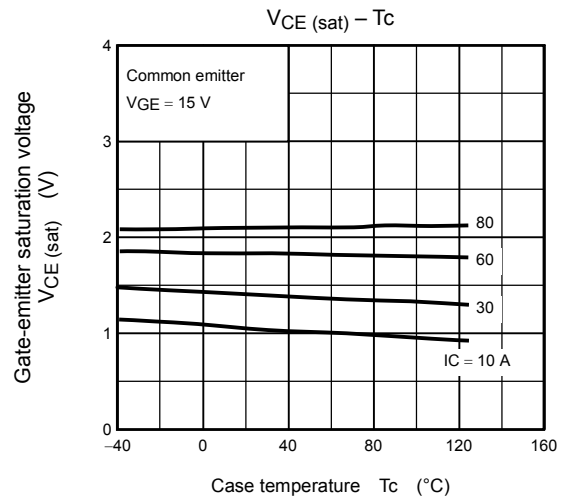
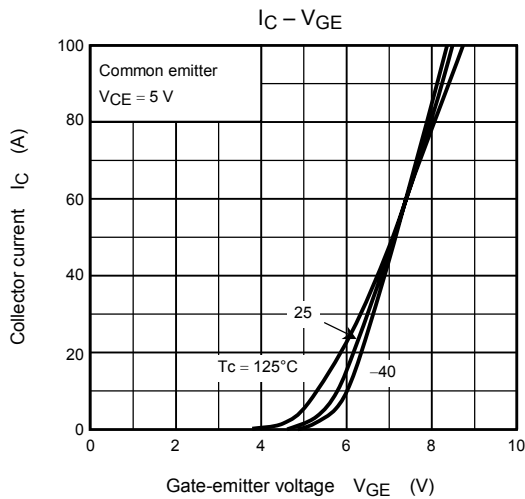
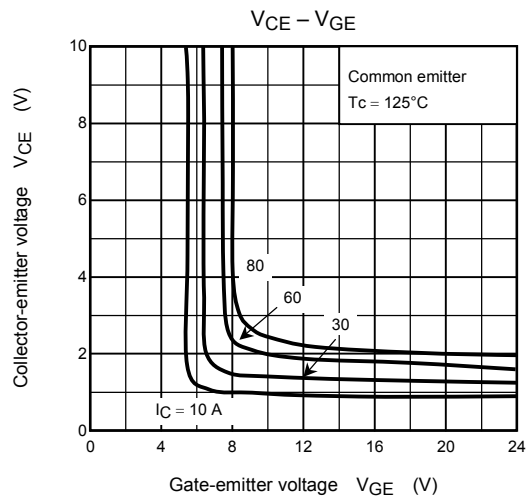
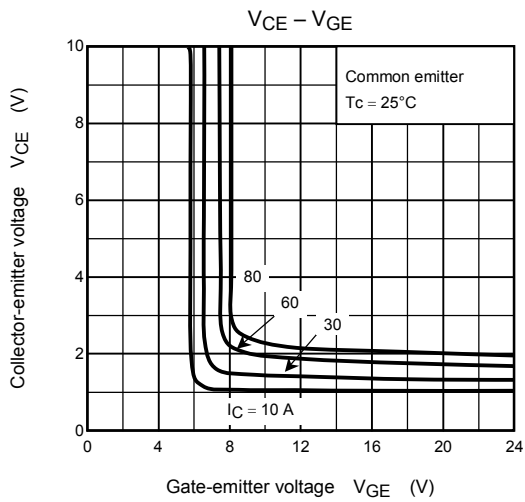
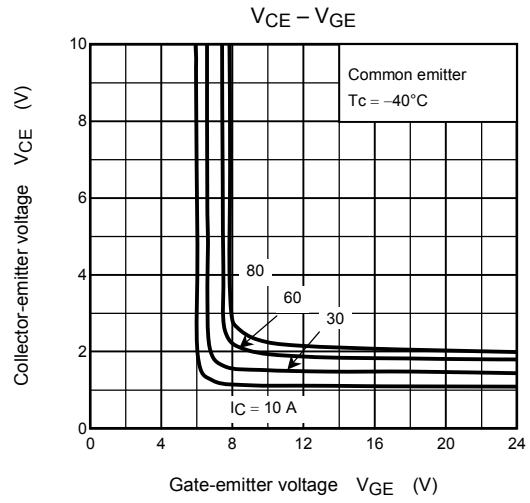
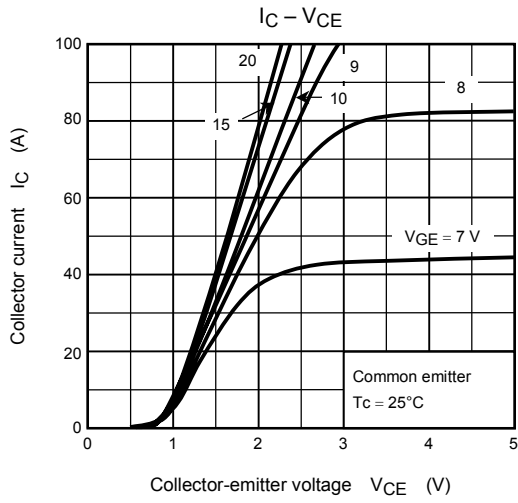
Characteristics	Symbol	Rating	Unit
Collector-emitter voltage	$V_{CES}$	400	V
Gate-emitter voltage	$V_{GES}$	$\pm 25$	V
Collector current	DC	$I_C$	40
	1 ms	$I_{CP}$	100
Collector power dissipation ( $T_c = 25^\circ C$ )	$P_C$	100	W
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature range	$T_{stg}$	-55~150	$^\circ C$

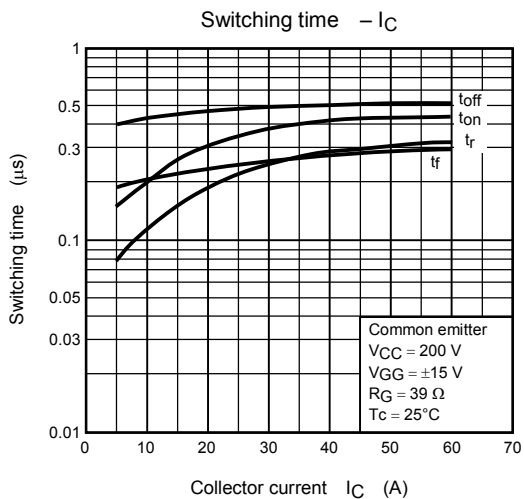
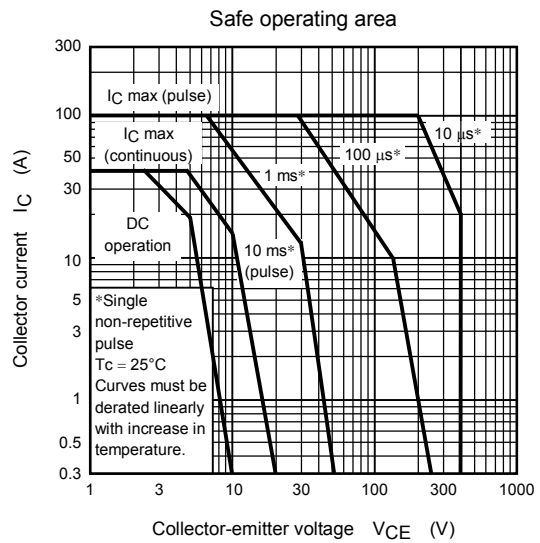
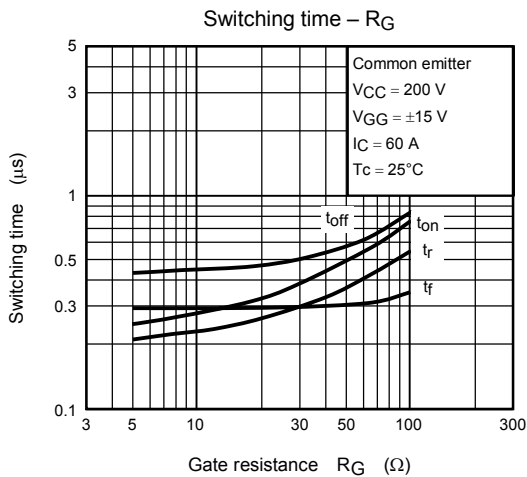
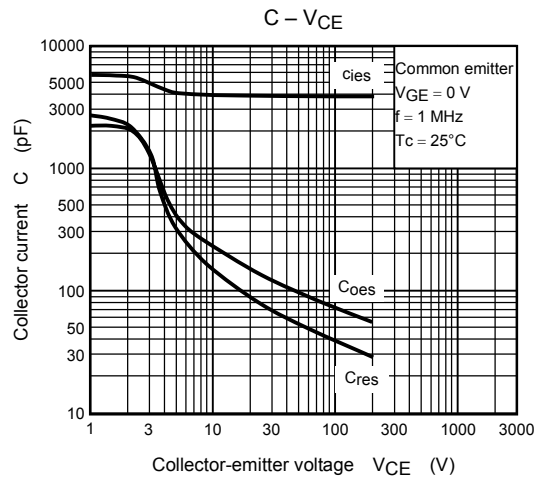
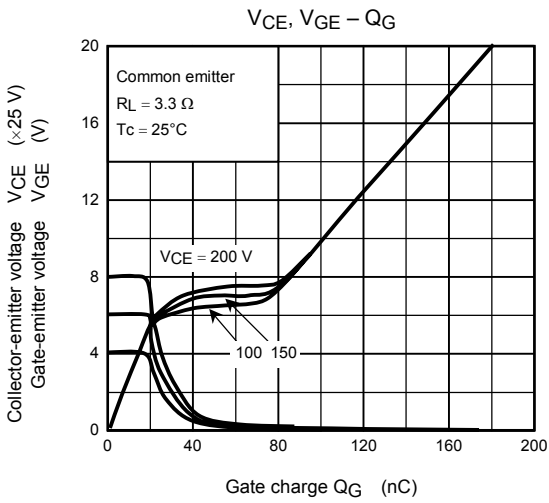


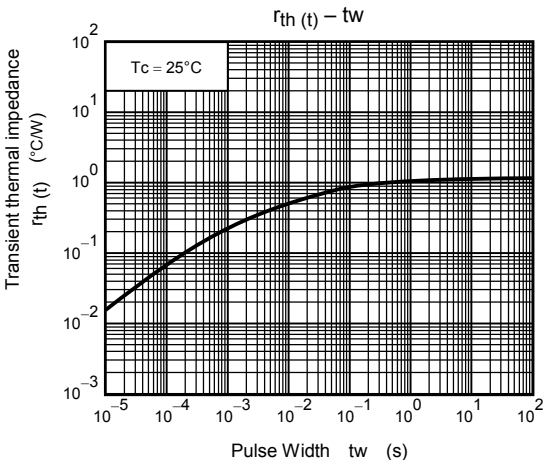
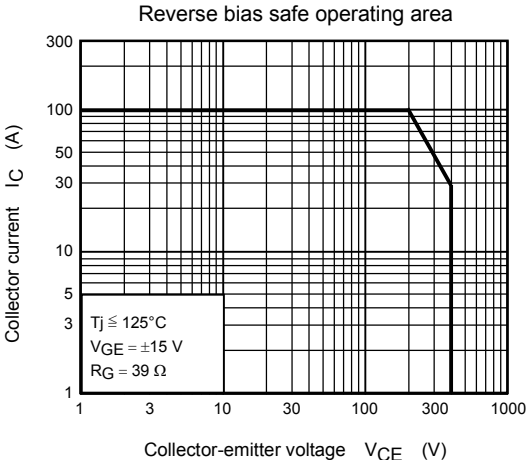
Weight: 2 g (typ.)

### Electrical Characteristics ( $T_a = 25^\circ C$ )

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	$I_{GES}$	$V_{GE} = \pm 25 V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector cut-off current	$I_{CES}$	$V_{CE} = 400 V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage	$V_{GE(OFF)}$	$I_C = 60 mA, V_{CE} = 5 V$	3.0	—	6.0	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 60 A, V_{GE} = 15 V$	—	1.8	2.5	V
Input capacitance	$C_{ies}$	$V_{CE} = 10 V, V_{GE} = 0, f = 1 MHz$	—	3900	—	pF
Switching time	Rise time	$t_r$	—	0.33	—	$\mu s$
	Turn-on time	$t_{on}$	—	0.43	—	
	Fall time	$t_f$	—	0.30	0.40	
	Turn-off time	$t_{off}$	—	0.54	—	
Thermal resistance	$R_{th(j-c)}$	—	—	—	1.25	$^\circ C/W$







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