

TOSHIBA Insulated Gate Bipolar Transistor Silicon N Channel IGBT

GT30J122

4TH GENERATION IGBT

CURRENT RESONANCE INVERTER SWITCHING APPLICATIONS

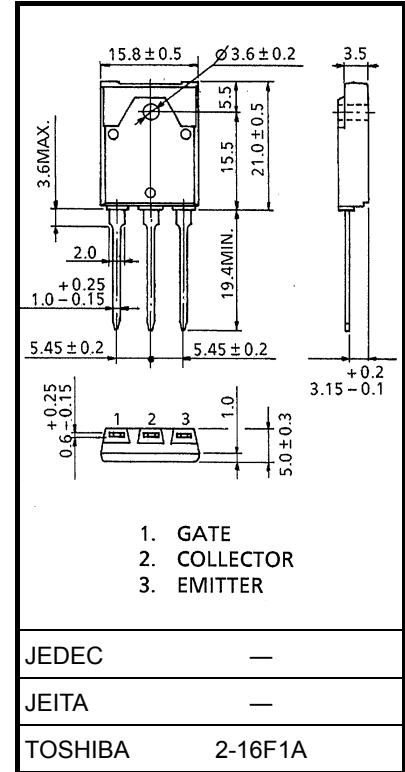
- Enhancement mode type
- High speed: $t_f = 0.25\mu s$ (Typ.) ($I_C = 50A$)
- Low saturation voltage: $V_{CE(sat)} = 2.1V$ (Typ.) ($I_C = 50A$)

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

Characteristic	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	600	V
Gate-emitter voltage	V_{GES}	± 20	V
Collector current	DC	I_C	30
	1 ms	I_{CP}	100
Collector power dissipation ($T_c = 25^\circ C$)	P_C	75	W
Junction temperature	T_j	150	$^\circ C$
Storage temperature range	T_{stg}	-55~150	$^\circ C$

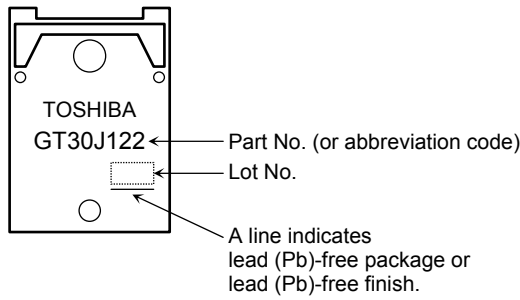
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm



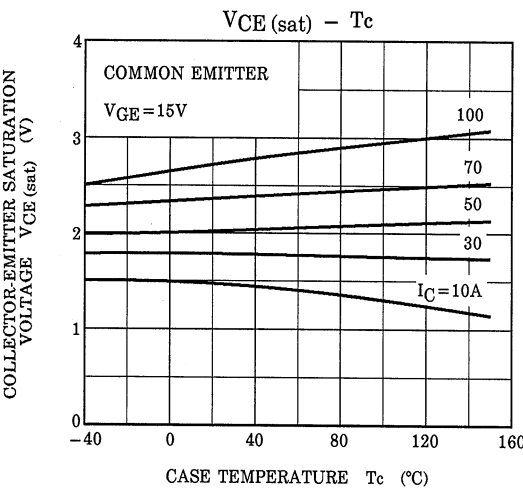
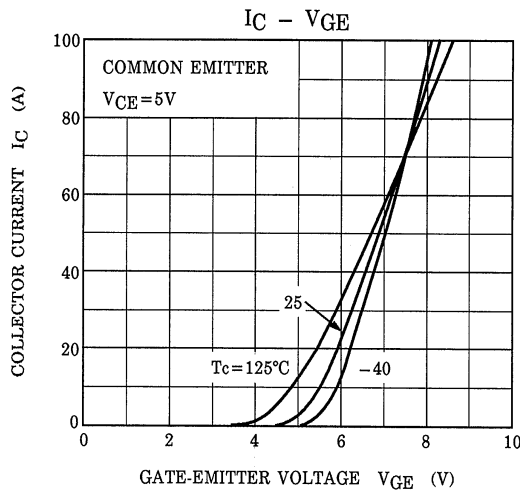
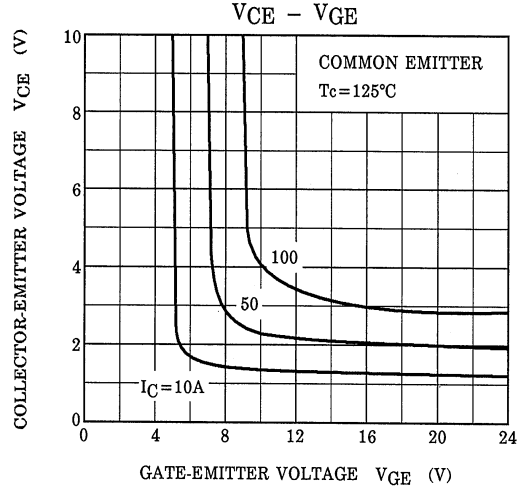
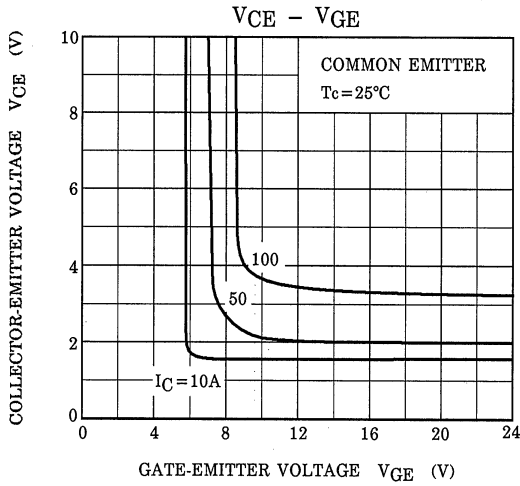
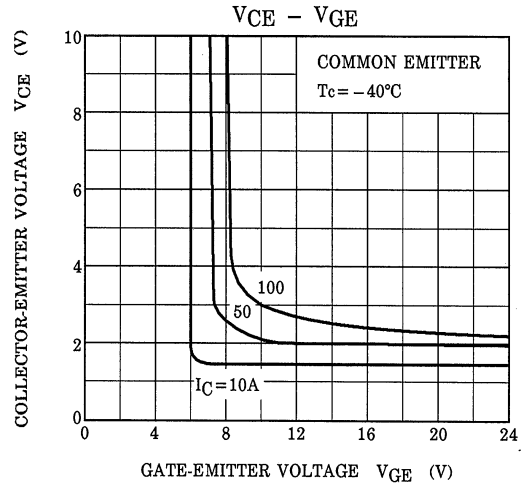
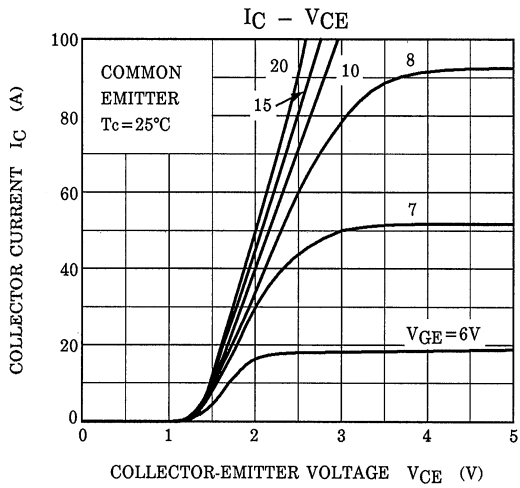
Weight: 5.8 g (typ.)

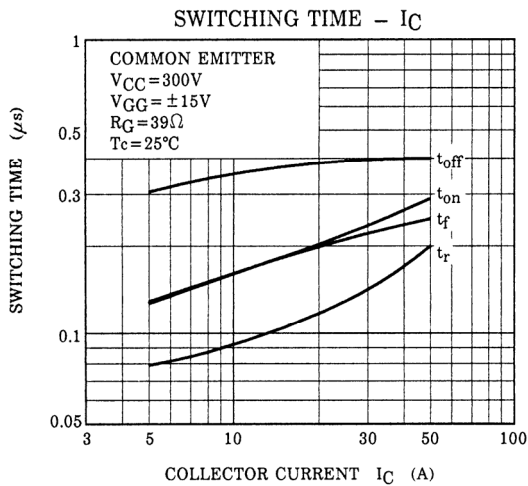
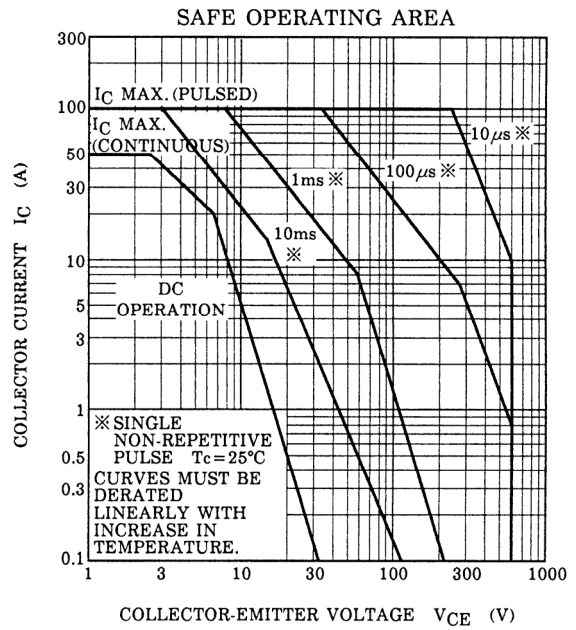
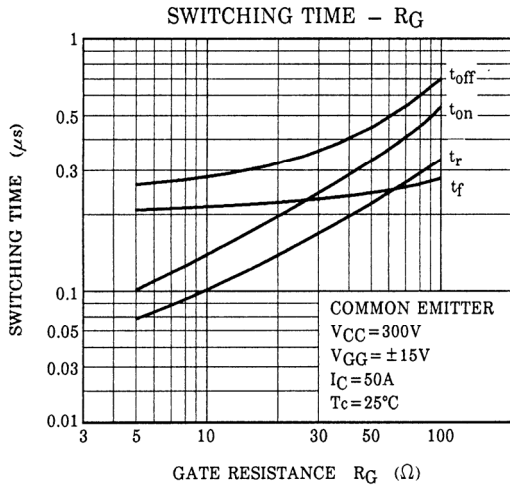
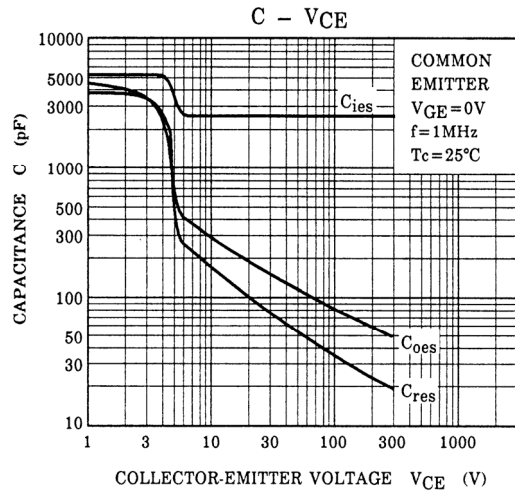
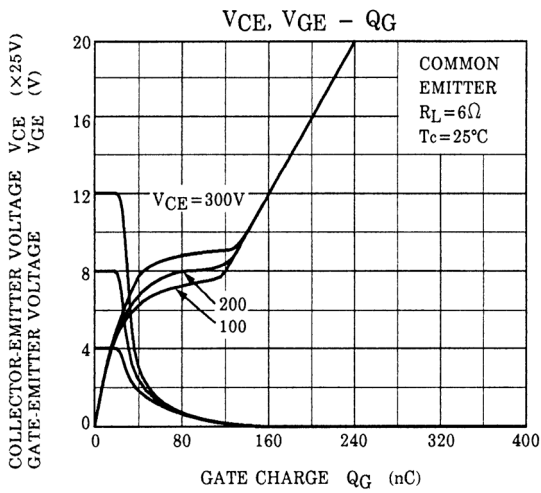
MARKING

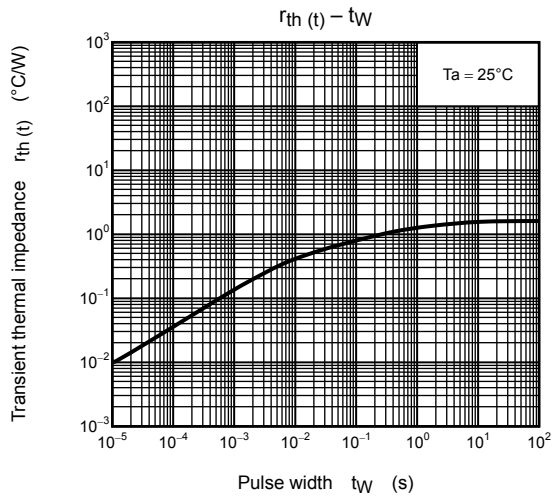
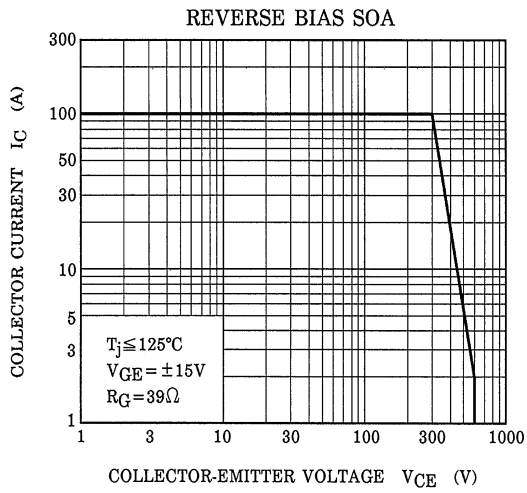


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GES}	$V_{GE} = \pm 20\text{ V}, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current	I_{CES}	$V_{CE} = 600\text{ V}, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage	$V_{GE(OFF)}$	$I_C = 50\text{ mA}, V_{CE} = 5\text{ V}$	3.0	—	6.0	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 50\text{ A}, V_{GE} = 15\text{ V}$	—	2.1	2.8	V
Input capacitance	C_{ies}	$V_{CE} = 10\text{ V}, V_{GE} = 0, f = 1\text{ MHz}$	—	2500	—	pF
Switching time	Rise time		—	0.20	—	μs
	Turn-on time		—	0.30	—	
	Fall time		—	0.25	0.40	
	Turn-off time		—	0.40	—	
Thermal resistance (IGBT)	$R_{th(j-c)}$	—	—	—	1.67	°C/W







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20070701-EN

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