

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.) ($I_C = 50A$)

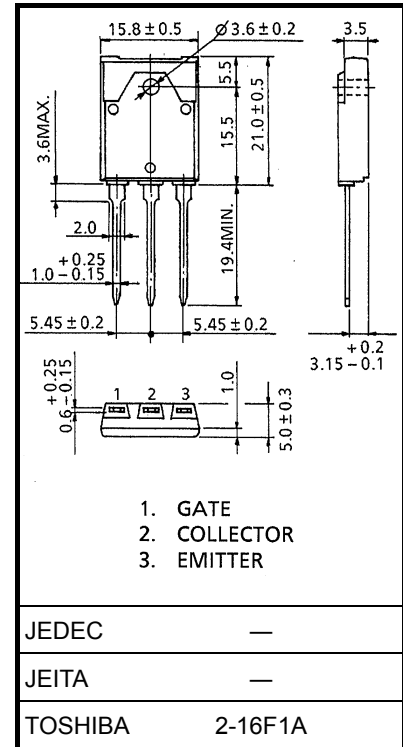
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

Characteristic		Symbol	Rating	Unit
Collector-emitter voltage		V_{CES}	600	V
Gate-emitter voltage		V_{GES}	± 20	V
Collector current	DC	I_C	30	A
	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 to 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.

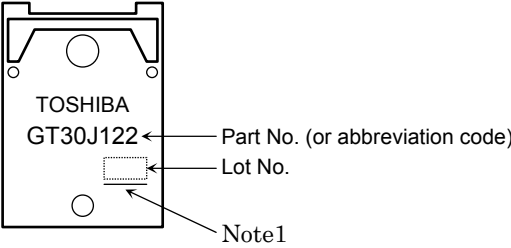
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm



Weight: 5.8 g (typ.)

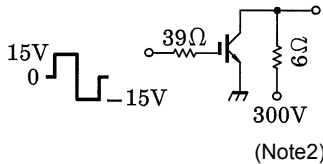
MARKING



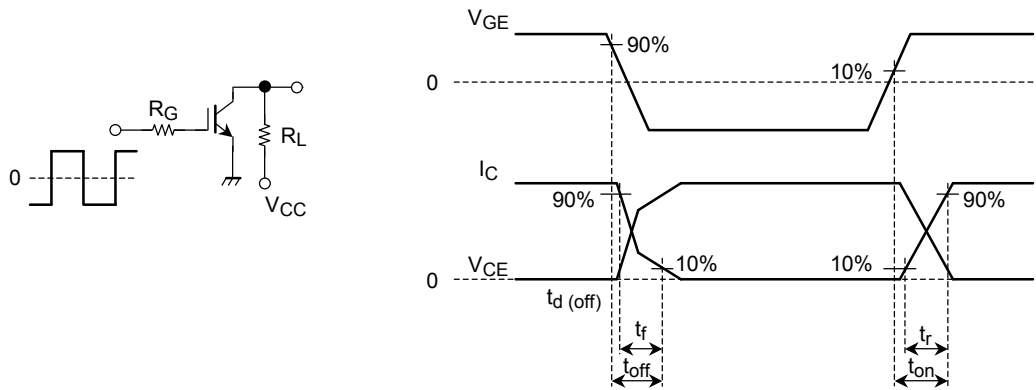
Note1: A line under a Lot No. identifies the indication of product Labels.
[[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

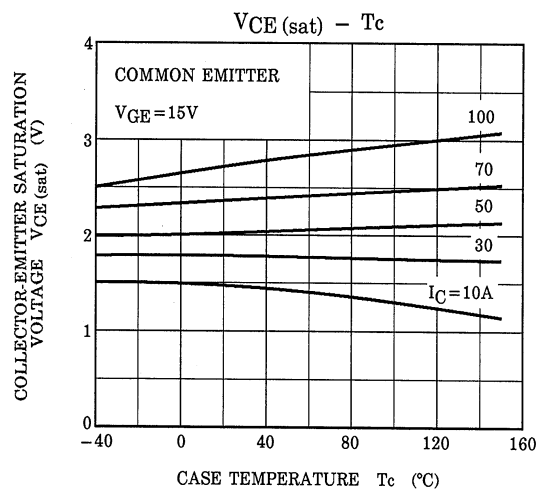
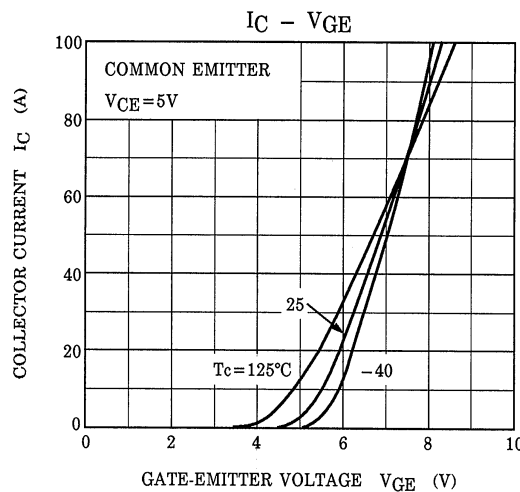
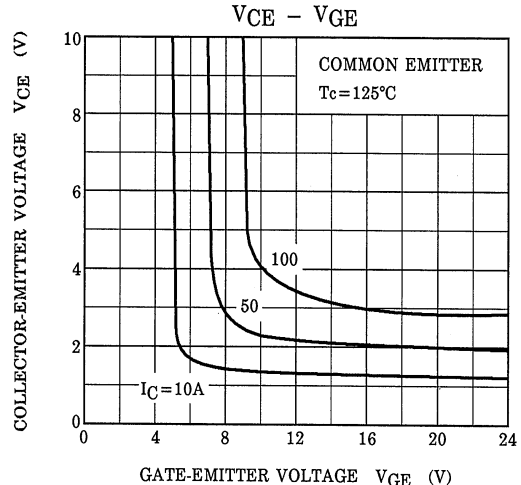
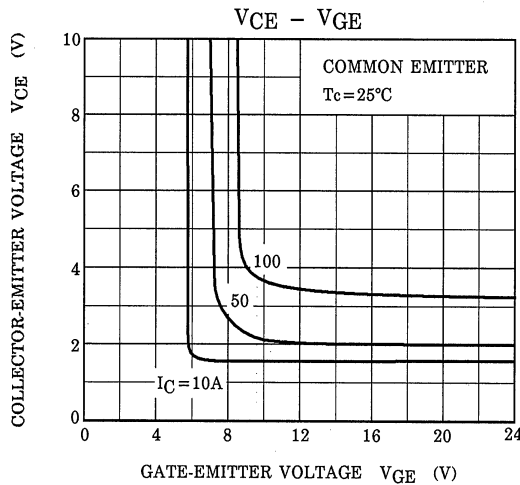
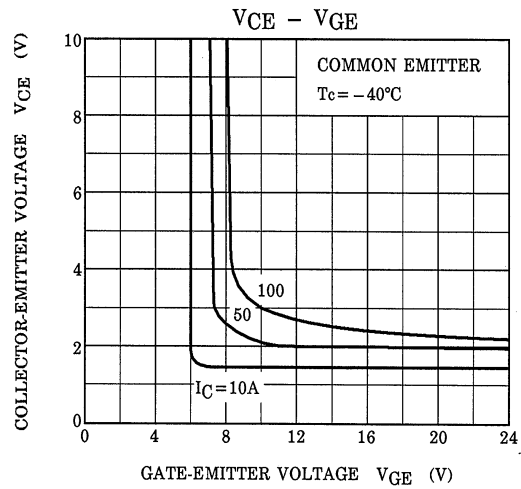
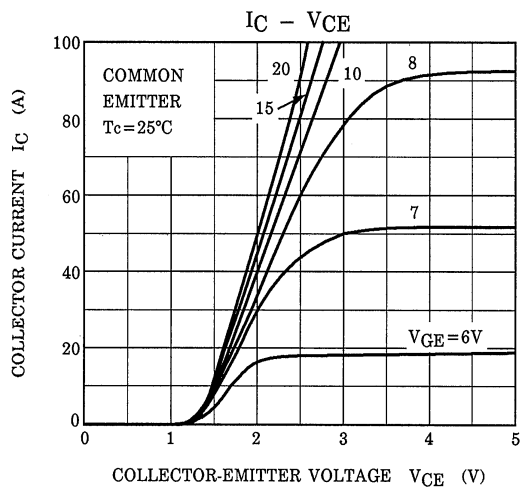
Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.
The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

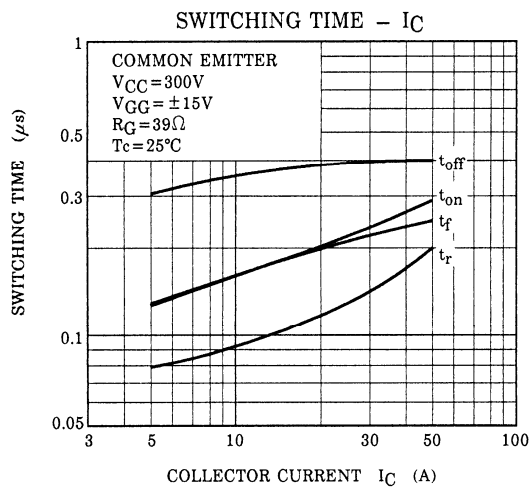
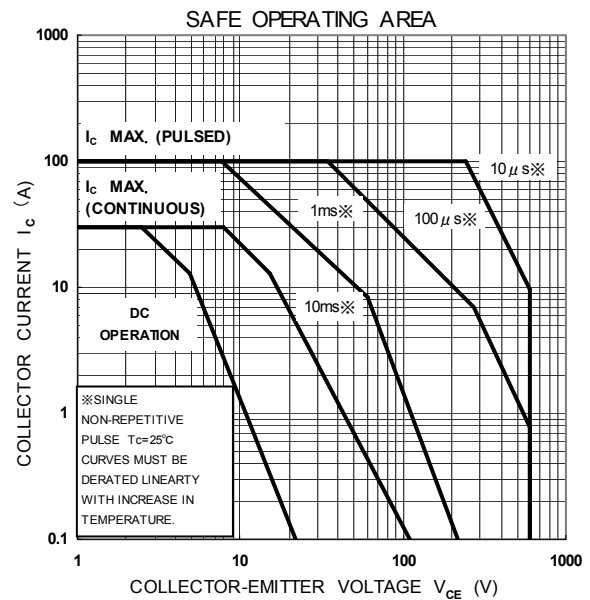
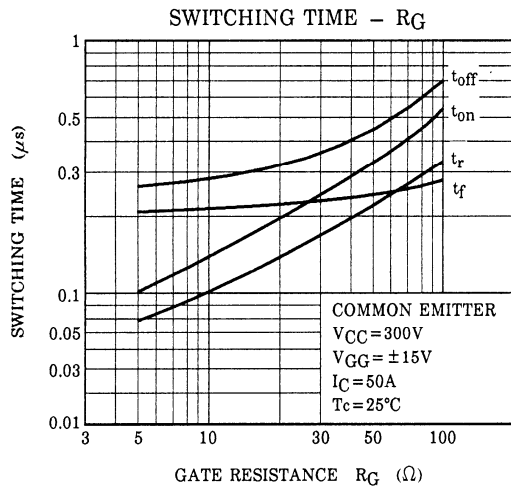
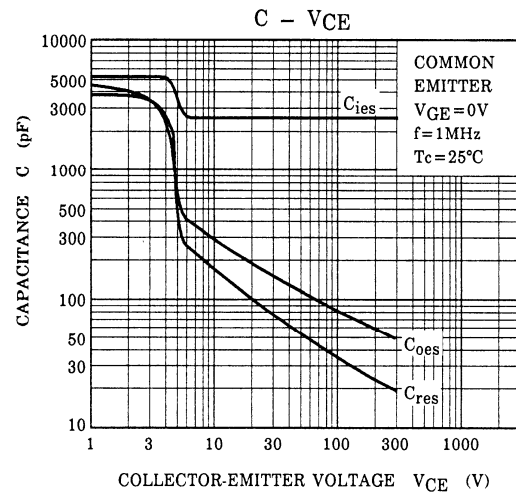
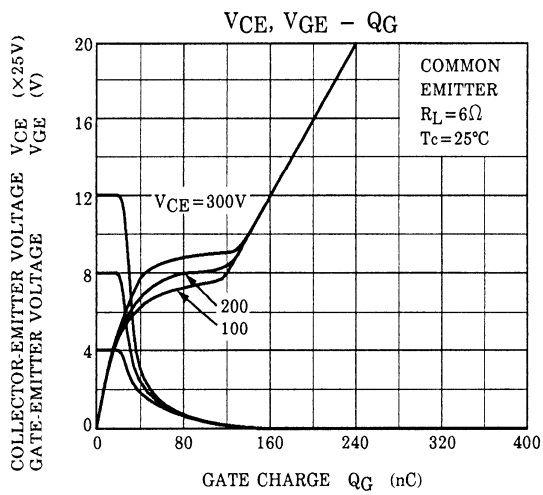
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

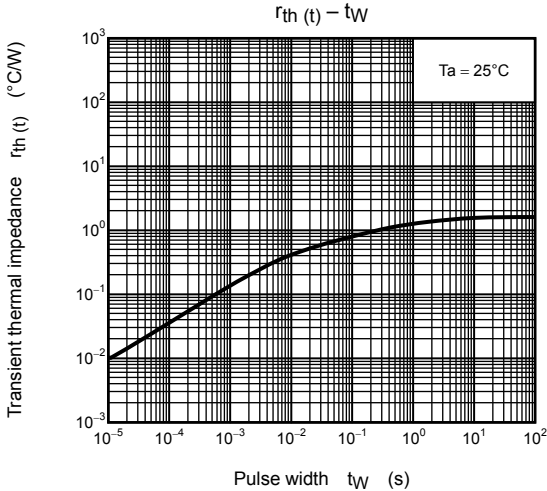
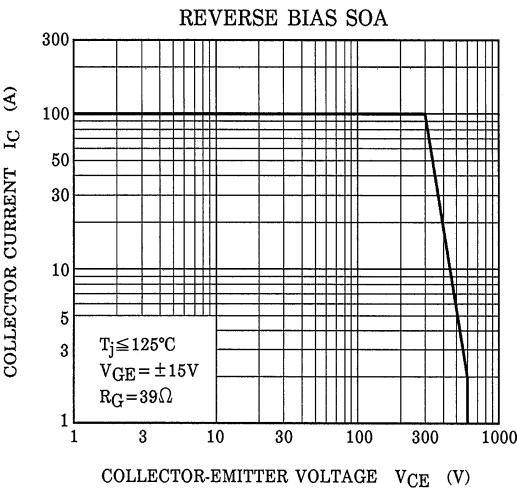
Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GES}	$V_{GE} = \pm 20\text{ V}, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current		I_{CES}	$V_{CE} = 600\text{ V}, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE}(\text{OFF})$	$I_C = 50\text{ mA}, V_{CE} = 5\text{ V}$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE}(\text{sat})$	$I_C = 50\text{ A}, V_{GE} = 15\text{ V}$	—	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	t_r		—	0.20	—	μs
	Turn-on time	t_{on}		—	0.30	—	
	Fall time	t_f		—	0.25	0.40	
	Turn-off time	t_{off}		—	0.40	—	
Thermal resistance (IGBT)		$R_{th(j-c)}$	—	—	—	1.67	$^{\circ}\text{C/W}$

Note2: Switching time measurement circuit and input/output waveforms









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