Unit: mm

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.) (IC = 50A)
- Low saturation voltage: VCE (sat) = 2.1V (Typ.) (IC = 50A)

ABSOLUTE 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	IC	30	А	
	1 ms	I _{CP}	100		
Collector power dissipation (Tc = 25°C)		P _C	75	W	
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	-55~150	°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.

Weight: 5.8 g (typ.)

1. GATE
2. COLLECTOR
3. EMITTER

JEDEC

JEITA

TOSHIBA

2.3.6±0.2

3.5.45±0.2

3.5.45±0.2

3.5.45±0.2

3.5.45±0.2

3.5.45±0.2

3.15-0.1

F. 0.2

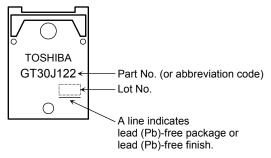
3.15-0.1

TOSHIBA

2-16F1A

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).

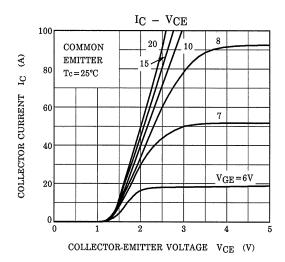
MARKING

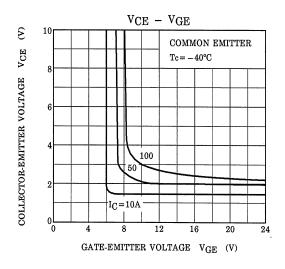


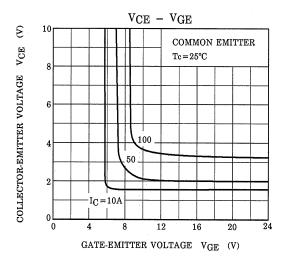
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

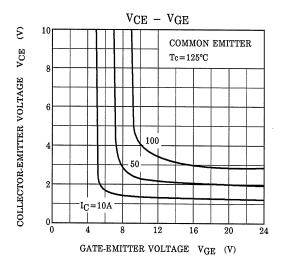
Characteristic		Symbol	Test Condition	Min	Тур.	Max	Unit
Gate leakage cur	rent	I _{GES}	$V_{GE} = \pm 20 \text{ V}, V_{CE} = 0$	_	_	±500	nA
Collector cut-off of	current	I _{CES}	V _{CE} = 600 V, V _{GE} = 0	_	_	1.0	mA
Gate-emitter cut-	off voltage	V _{GE} (OFF)	$I_C = 50$ mA, $V_{CE} = 5$ V	3.0	_	6.0	V
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = 50 A, V _{GE} = 15 V	_	2.1	2.8	V
Input capacitance		C _{ies}	V _{CE} = 10V, V _{GE} = 0, f = 1 MHz	_	2500	_	pF
Switching time	Rise time	t _r	15V 39Ω G 300V	_	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	°C/W

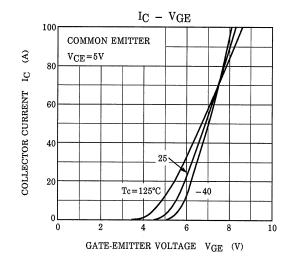
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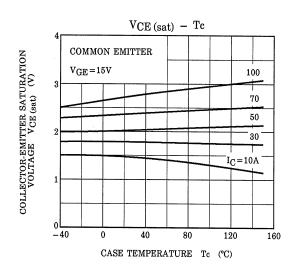


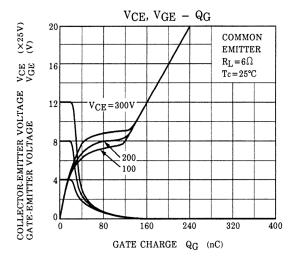


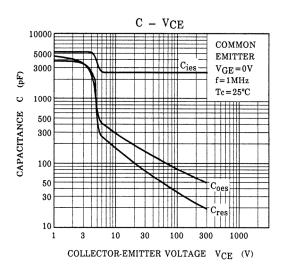


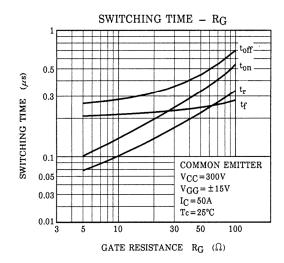


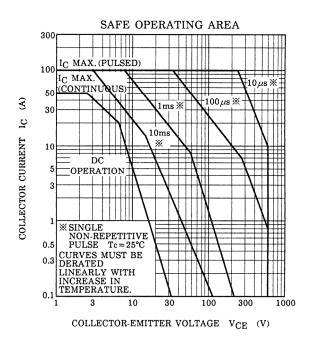


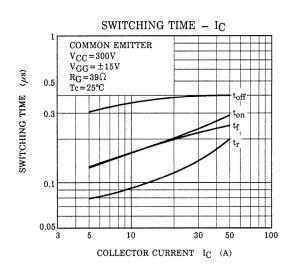


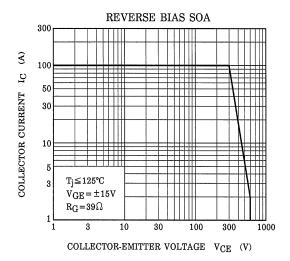


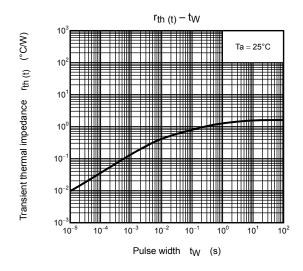












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20070701-EN

2006-11-01

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