

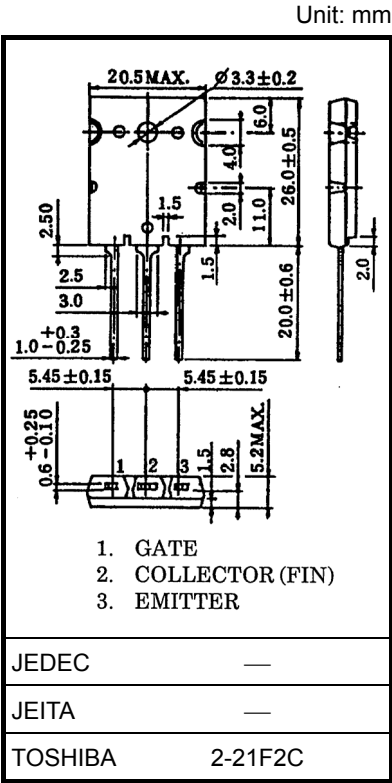
GT50J102

HIGH POWER SWITCHING APPLICATIONS
MOTOR CONTROL APPLICATIONS

- Third-generation IGBT
- Enhancement mode type
- High speed. : $t_f = 0.30\mu s$ (Max.)
- Low saturation voltage. : $V_{CE(sat)} = 2.7V$ (Max.)

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	I_C	50	A
	1ms	I_{CP}	100	
Collector Power Dissipation		P_C	200	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C
Screw Torque		—	0.8	N·m

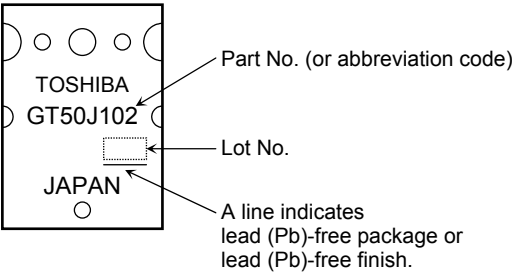


Weight: 9.75 g (typ.)

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).

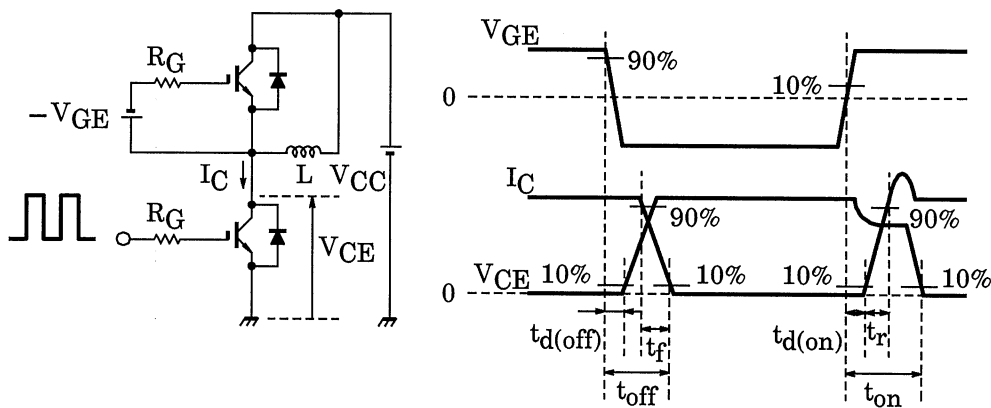
MARKING

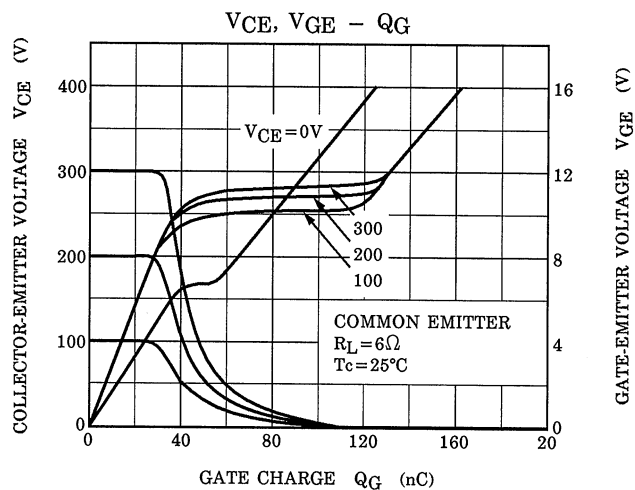
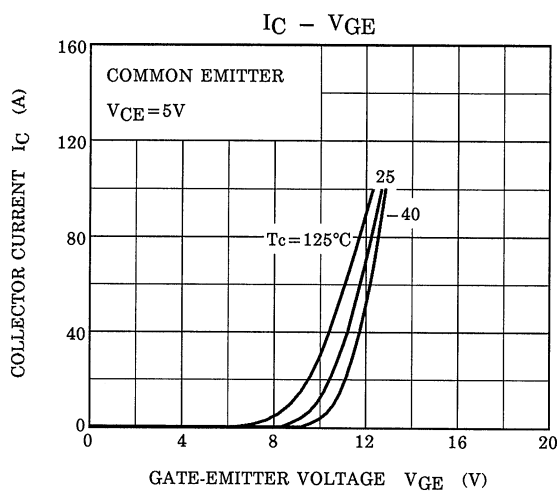
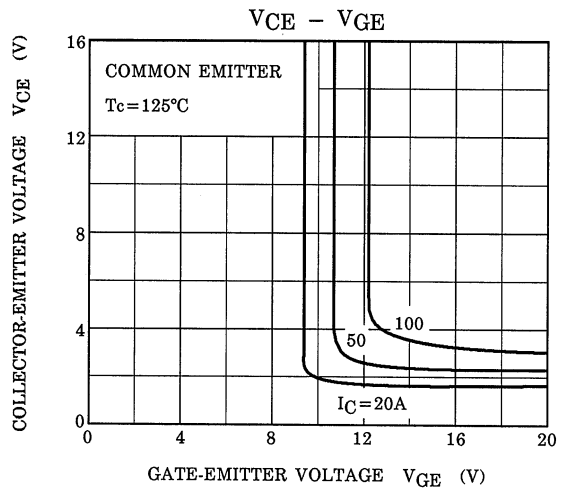
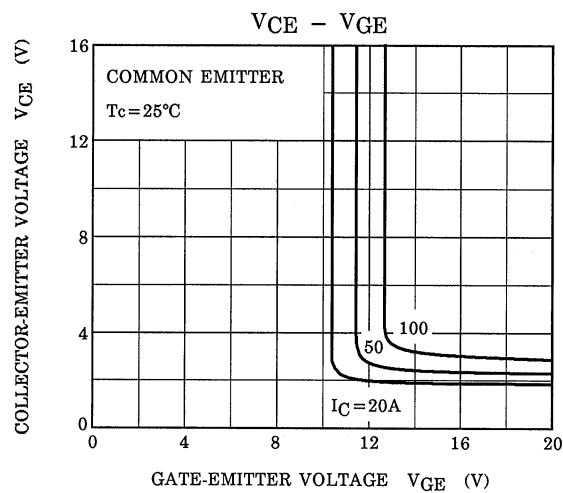
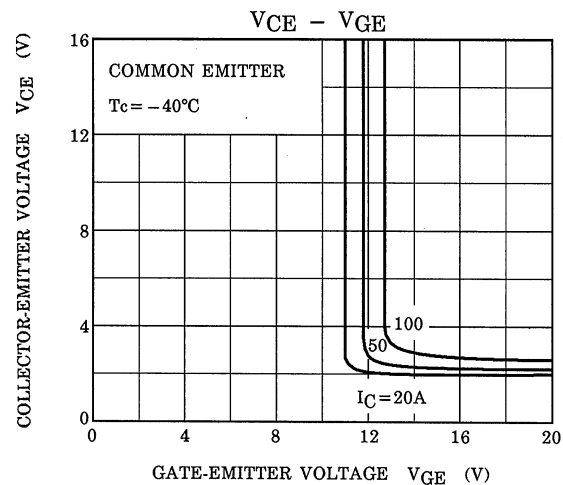
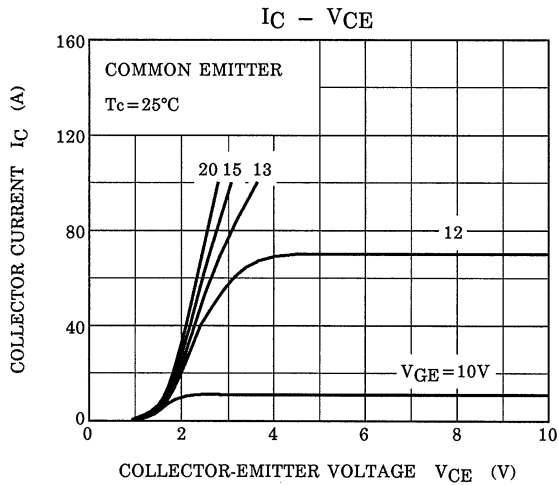


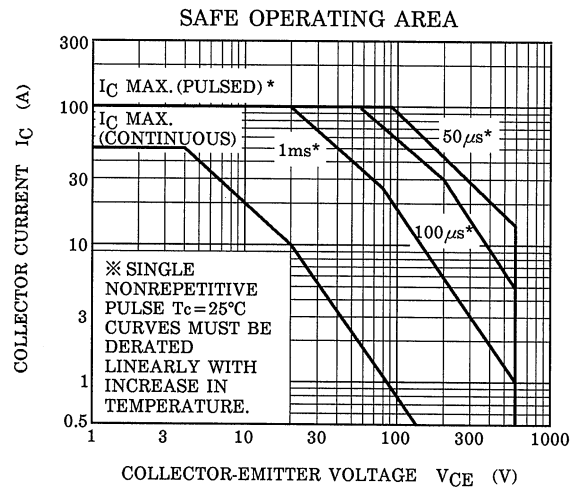
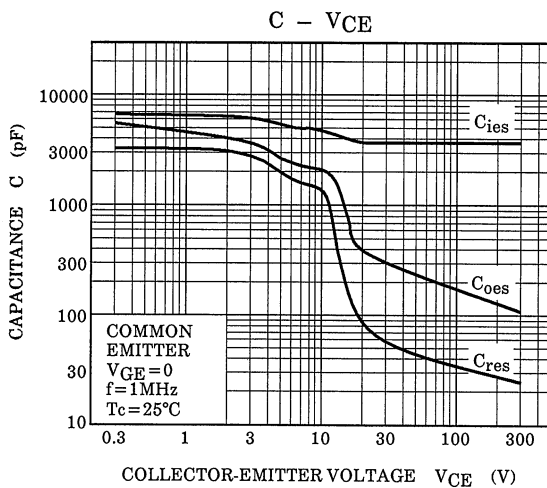
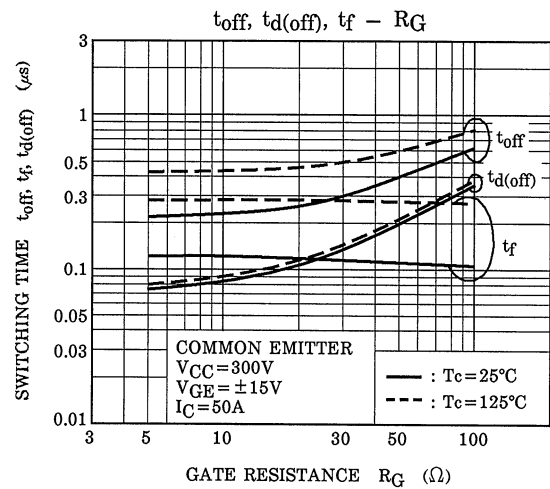
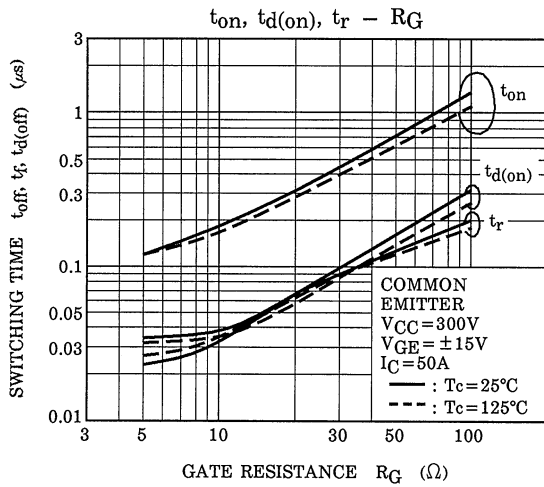
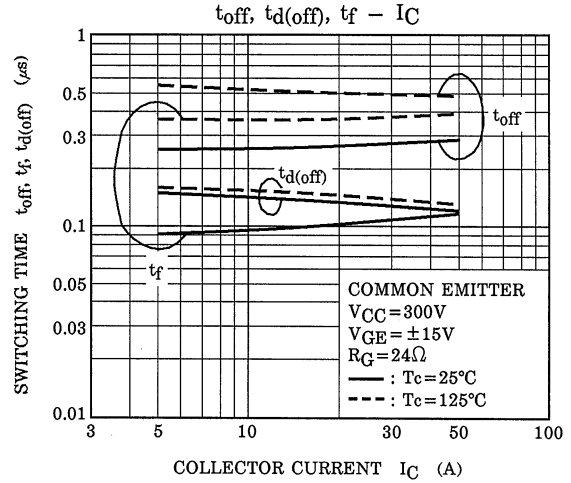
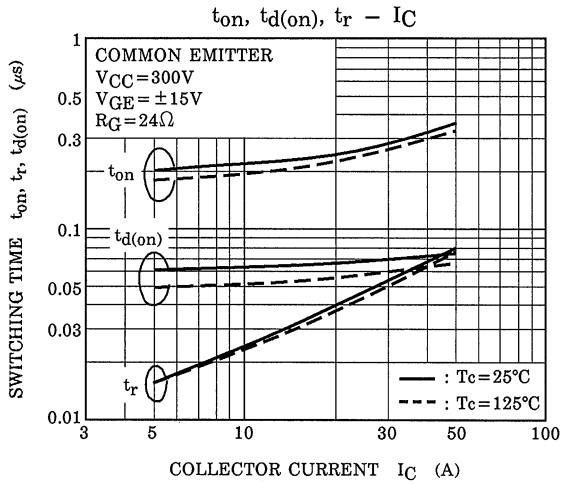
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

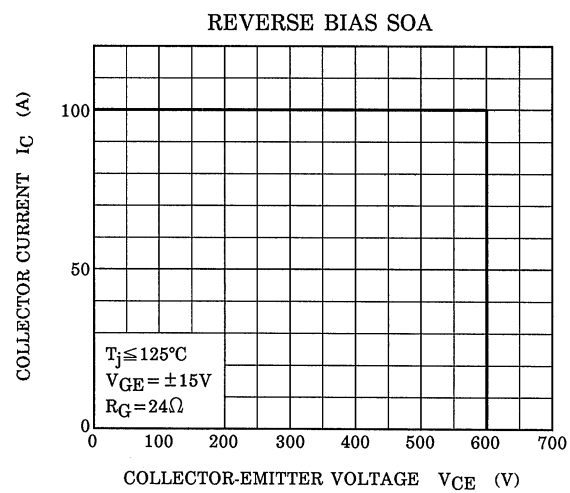
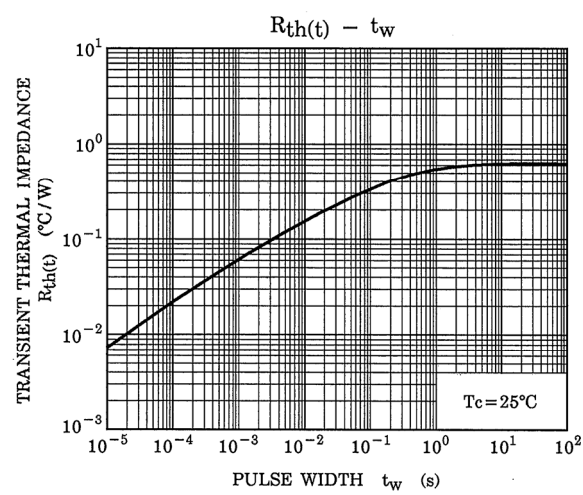
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	± 500	nA
Collector Cut-Off Current		I_{CES}	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE(OFF)}$	$I_C = 5mA, V_{CE} = 5V$	5.0	7.0	8.0	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 50A, V_{GE} = 15V$	—	2.1	2.7	V
Input Capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0$ $f = 1MHz$	—	4500	—	pF
Switching Time	Turn-on delayTime	$t_{d(on)}$	Inductive Load $V_{CC} = 300V$ $V_{GE} = \pm 15V$ $I_C = 50A$ $R_G = 24\Omega$ (Note 1)	—	0.08	—	μs
	Rise Time	t_r		—	0.12	—	
	Turn-on Time	t_{on}		—	0.40	—	
	Turn-off delay Time	$t_{d(off)}$		—	0.20	—	
	Fall Time	t_f		—	0.15	0.30	
	Turn-off Time	t_{off}		—	0.50	—	
Thermal Resistance		$R_{th(j-c)}$		—	—	0.625	V

Note 1: Switching. time measurement circuit and input / output waveforms









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20070701-EN

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