

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL IGBT

GT50J102

Unit in mm

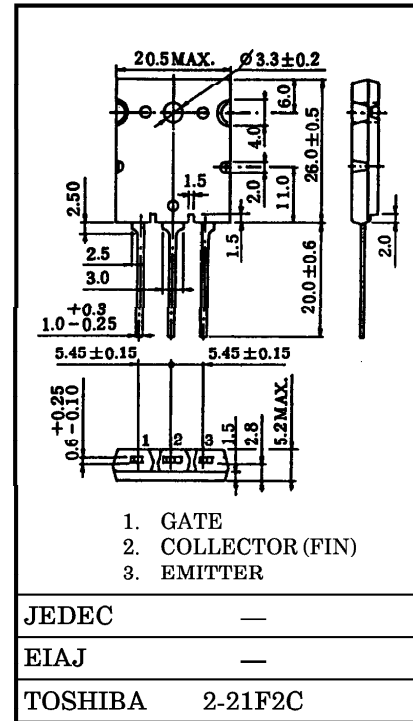
HIGH POWER SWITCHING APPLICATIONS.

MOTOR CONTROL APPLICATIONS.

- The 3rd. Generation.
- Enhancement-Mode.
- High Speed. : $t_f = 0.30\mu s$ (Max.)
- Low Saturation Voltage. : $V_{CE(sat)} = 2.7V$ (Max.)

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	50
	1ms	I_{CP}	100
Collector Power Dissipation	P_C	200	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$
Screw Tonque	—	0.8	N·m



JEDEC	—
EIAJ	—
TOSHIBA	2-21F2C

Weight : 9.75g

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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 delay Time	$t_{d(on)}$	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		$R_{th(i-c)}$		—	—	0.625	V

Note 1 Switching time measurement circuit and input/output waveforms

