

TOSHIBA INSULATED GATE BIPOlar TRANSISTOR SILICON N CHANNEL MOS TYPE

GT50J322

THE 4TH GENERATION

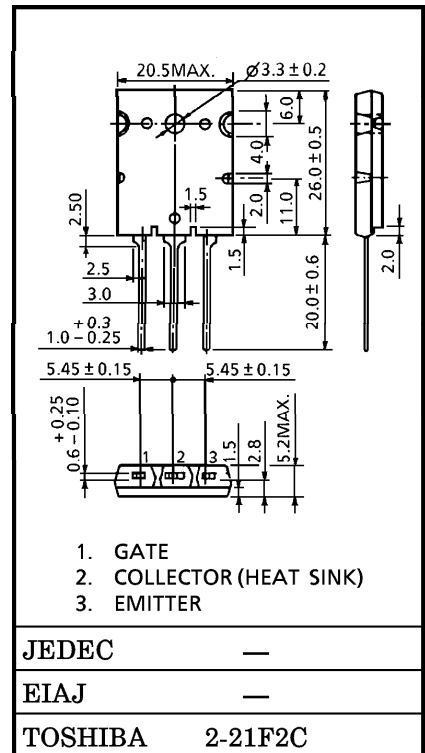
CURRENT RESONANCE INVERTER SWITCHING APPLICATIONS

- FRD Included Between Emitter and Collector
- Enhancement-Mode
- High Speed : $t_f = 0.25 \mu s$ (Typ.) ($I_C = 50A$)
- Low Saturation Voltage : $V_{CE(sat)} = 2.1V$ (Typ.) ($I_C = 50A$)

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

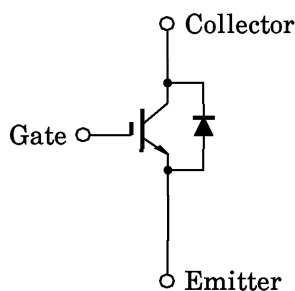
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	600	V
Gate-Emitter Voltage		V_{GES}	± 20	V
Collector Current	DC	I_C	50	A
	1ms	I_{CP}	100	
Emitter-Collector Forward Current	DC	I_F	30	A
	1ms	I_{FP}	60	
Collector Power Dissipation ($T_c = 25^\circ C$)		P_C	130	W
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$

Unit in mm



Weight : 9.75g

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP	MAX.	UNIT
Gate Leakage Current		I _{GES}	V _{GE} = ±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 = 50mA, V _{CE} = 5V	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		V _{CE (sat)}	I _C = 50A, V _{GE} = 15V	—	2.1	2.8	V
Input Capacitance		C _{ies}	V _{CE} = 10V, V _{GE} = 0, f = 1MHz	—	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	—	
Forward Voltage		V _F	I _F = 30A, V _{GE} = 0	—	—	2.0	V
Reverse Recovery Time		t _{rr}	I _F = 30A, V _{GE} = 0 di / dt = -100A / μs	—	—	0.2	μs
Thermal Resistance		R _{th(j-c)}	IGBT	—	—	0.96	°C / W
Thermal Resistance		R _{th(j-c)}	Diode	—	—	1.56	°C / W

