

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL MOS TYPE

GT60M301

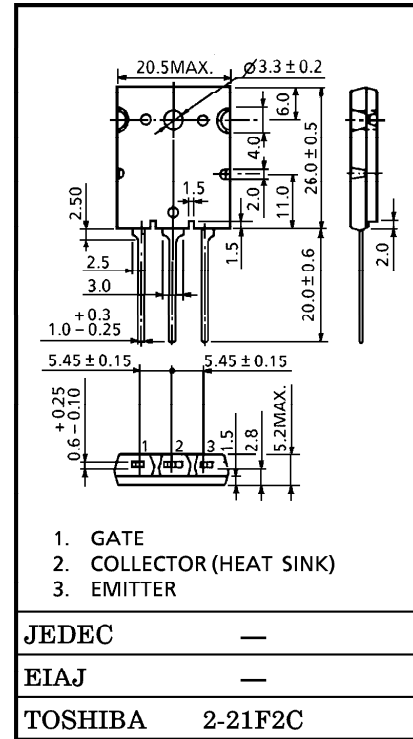
HIGH POWER SWITCHING APPLICATIONS

Unit in mm

- The 3rd Generation
- FRD Included Between Emitter and Collector
- Enhancement-Mode
- High Speed $I_{GBT} : t_f = 0.25 \mu s$ (Typ.)
 $FRD : t_{rr} = 0.7 \mu s$ (Typ.)
- Low Saturation Voltage $: V_{CE(sat)} = 3.4V$ (Max.)

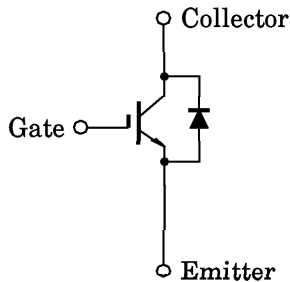
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage		V_{CES}	900	V
Gate-Emitter Voltage		V_{GES}	± 25	V
Collector Current	DC	I_C	60	A
	1ms	I_{CP}	120	
Emitter-Collector Forward Current	DC	I_{ECF}	15	A
	1ms	I_{ECFP}	120	
Junction Temperature (Tc = 25°C)		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 : 9.75g

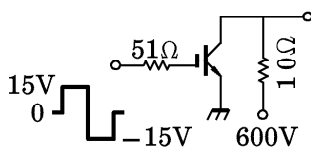
EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I _{GES}	V _{GE} = ±25V, V _{CE} = 0	—	—	±500	nA
Collector Cut-off Current		I _{CES}	V _{CE} = 900V, V _{GE} = 0	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		V _{GE(OFF)}	I _C = 60mA, V _{CE} = 5V	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		V _{CE(sat)} (1)	I _C = 10A, V _{GE} = 15V	—	1.8	2.4	V
Collector-Emitter Saturation Voltage		V _{CE(sat)} (2)	I _C = 60A, V _{GE} = 15V	—	2.3	3.4	V
Input Capacitance		C _{ies}	V _{CE} = 30V, V _{GE} = 0 f = 1MHz	—	2700	—	pF
Switching Time	Rise Time	t _r		—	0.25	0.60	μs
	Turn-on Time	t _{on}		—	0.35	0.80	
	Fall Time	t _f		—	0.25	0.40	
	Turn-off Time	t _{off}		—	0.50	1.00	
Emitter-Collector Forward Voltage		V _{ECF}	I _{EC} = 15A, V _{GE} = 0	—	1.5	2.0	V
Reverse Recovery Time		t _{rr}	I _F = 15A, di / dt = -20A	—	0.7	2.5	μs
Thermal Resistance		R _{th(j-c)}	IGBT	—	—	0.625	°C / W
Thermal Resistance		R _{th(j-c)}	Diode	—	—	4.0	°C / W

