

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N-CHANNEL IGBT

GT20G101(SM)

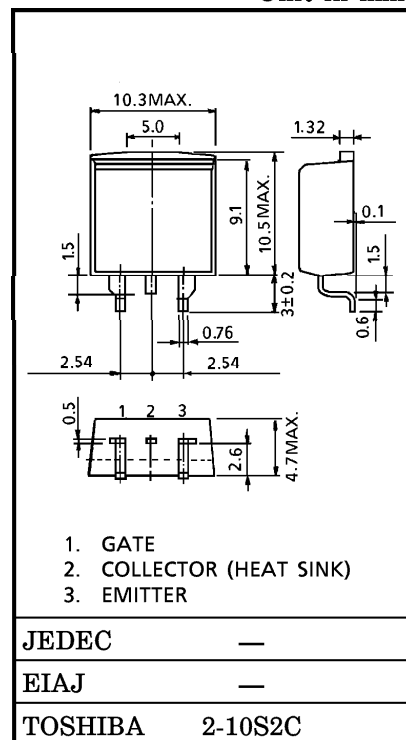
STROBE FLASH APPLICATIONS

Unit in mm

- High Input Impedance
- Low Saturation Voltage : $V_{CE(sat)} = 8V$ (Max.) ($I_C = 130A$)
- Enhancement-Mode
- 20V Gate Drive

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CES}	400	V
Gate-Emitter Voltage	V_{GES}	± 25	V
Collector Current	DC	I_C	20
	1ms	I_{CP}	130
Collector Power Dissipation	$T_a = 25^\circ C$	P_C	1.3
	$T_c = 25^\circ C$	P_C	60
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I_{GES}	$V_{GE} = \pm 25V, V_{CE} = 0$	—	—	± 100	nA	
Collector Cut-off Current	I_{CES}	$V_{CE} = 400V, V_{GE} = 0$	—	—	10	μA	
Gate-Emitter Cut-off Voltage	$V_{GE(OFF)}$	$I_C = 1mA, V_{CE} = 5V$	4	5	7	V	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 130A, V_{GE} = 20V$	—	5	8	V	
Input Capacitance	C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	1350	—	pF	
Switching Time	Rise Time	t_r				0.1	0.5
	Turn-on Time	t_{on}	$V_{IN} : t_r \leq 100ns$ $t_f \leq 100ns$ Duty cycle $\leq 1\%$			0.15	0.5
	Fall Time	t_f				4.0	6.0
	Turn-off Time	t_{off}				4.5	7.0
Thermal Resistance	$R_{th(j-c)}$	—	—	—	2.08	$^\circ C / W$	

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