

Preliminary

TOSHIBA Insulated Gate Bipolar Transistor
Silicon N Channel IGBT

GT5G102

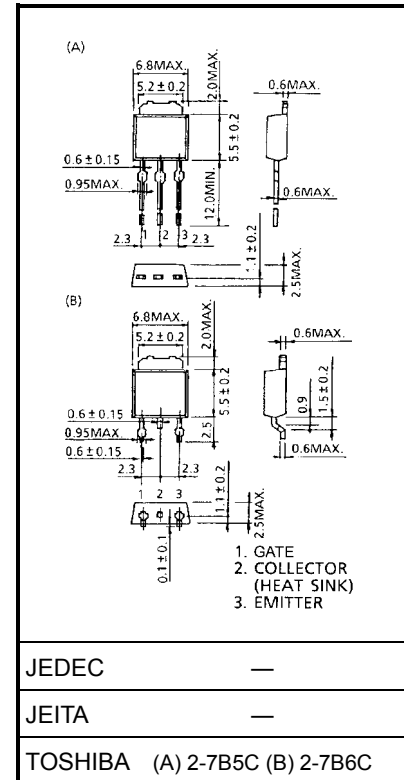
Strobe Flash Applications

- 3rd Generation
- High input impedance
- Low saturation voltage
: $V_{CE(sat)} = 8\text{ V (max)} (I_C = 130\text{ A})$
- Enhancement-mode
- 12 V gate drive

Maximum Ratings ($T_a = 25^\circ\text{C}$)

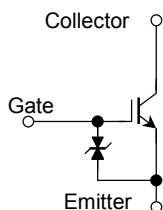
Characteristics	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	400	V
Gate-emitter voltage	V_{GES}	± 20	V
Collector current	DC	I_C	5 A
	1 ms	I_{CP}	130 A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1.3 W
	$T_c = 25^\circ\text{C}$	P_C	20 W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~150	$^\circ\text{C}$

Unit: mm

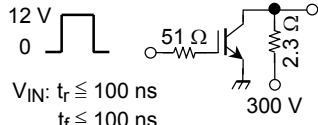


Weight: 0.036 g

Equivalent Circuit



Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GES}	$V_{GE} = 20\text{ V}, V_{CE} = 0$	—	—	10	μA
Collector cut-off current		I_{CES}	$V_{CE} = 400\text{ V}, V_{GE} = 0$	—	—	10	μA
Gate-emitter cut-off voltage		$V_{GE(\text{OFF})}$	$I_C = 1\text{ mA}, V_{CE} = 5\text{ V}$	2	—	5	V
Collector-emitter saturation voltage		$V_{CE(\text{sat})}$	$I_C = 130\text{ A}, V_{GE} = 12\text{ V (pulsed)}$	—	5	8	V
Input capacitance		C_{ies}	$V_{CE} = 10\text{ V}, V_{GE} = 0, f = 1\text{ MHz}$	—	1200	—	pF
Switching time	Rise time	t_r	 <p> $V_{IN}: t_r \leq 100\text{ ns}$ $t_f \leq 100\text{ ns}$ Duty cycle $\leq 1\%$ </p>	—	0.7	—	μs
	Turn-on time	t_{on}		—	0.9	—	
	Fall time	t_f		—	1.7	—	
	Turn-off time	t_{off}		—	2.0	—	
Thermal resistance		$R_{th(j-c)}$	—	—	—	6.25	$^{\circ}\text{C/W}$

This transistor is an electrostatic sensitive device. Please handle with caution.

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