

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL IGBT

# GT20G102

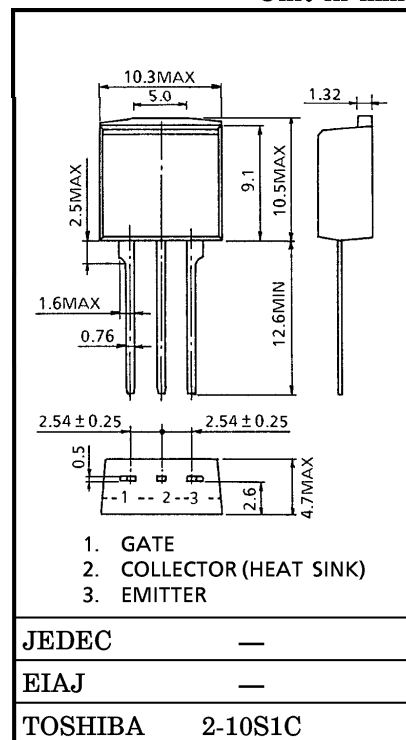
**STROBE FLASH APPLICATIONS**

- High Input Impedance
- Low Saturation Voltage :  $V_{CE(sat)} = 8.0V$  (Max.) ( $I_C = 130A$ )
- Enhancement-Mode
- 12V Gate Drive

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		$V_{CES}$	400	V
Gate-Emitter Voltage		$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	20	A
	1ms	$I_{CP}$	130	
Collector Power Dissipation	Ta = 25°C	$P_C$	1.3	A
	Tc = 25°C	$P_C$	60	
Junction Temperature		$T_j$	150	°C
Storage Temperature Range		$T_{stg}$	-55~150	°C

Unit in mm



Weight : 1.5g

**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 100$	nA
Collector Cut-off Current		$I_{CES}$	$V_{CE} = 400V, V_{GE} = 0$	—	—	10	$\mu A$
Gate-Emitter Cut-off Voltage		$V_{CE(OFF)}$	$I_C = 1mA, V_{CE} = 5V$	2	—	5	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 130A, V_{GE} = 12V$ (Pulsed)	—	5	8	V
Input Capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	1850	—	pF
Switching Time	Rise Time	$t_r$	<p><math>V_{IN}: t_r \leq 100ns</math>  <math>t_f \leq 100ns</math>                      Duty cycle <math>\leq 1\%</math></p>	—	0.1	0.5	$\mu S$
	Turn-on Time	$t_{on}$		—	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	°C/W

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