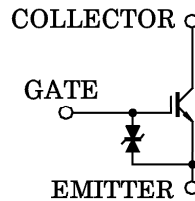


TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL MOS TYPE

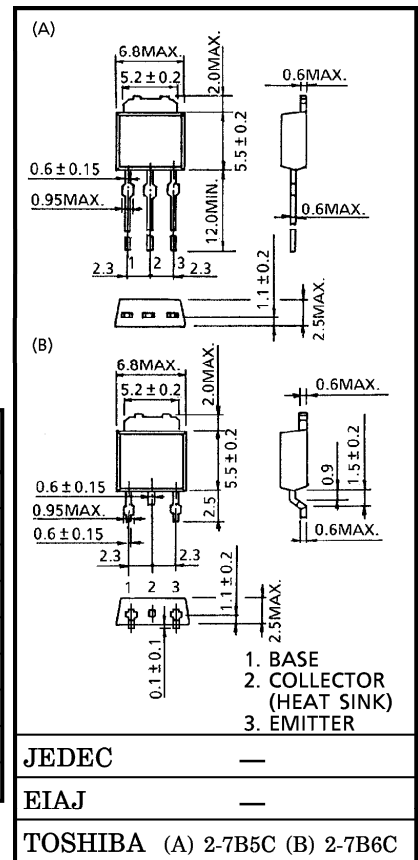
GT8G121

STROBE FLASH APPLICATIONS

- 4th Generation (Trench Gate Structure)
- Enhancement-Mode
- Low Saturation Voltage
: $V_{CE(sat)} = 7\text{ V (Max.) (@}I_C = 150\text{ A)}$
- 4 V Gate Drive



Unit in mm



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CES}	400	V
Gate-Emitter Voltage	DC	± 6	V
	Pulse	± 8	V
Collector Current	DC	8	A
	1 ms	150	A
Collector Power Dissipation	Ta = 25°C	1.1	W
	Tc = 25°C	20	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Weight : 0.36 g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GES}	$V_{GE} = 6\text{ V}, V_{CE} = 0$	—	—	10	μA
Collector Cut-off Current	I_{CES}	$V_{CE} = 400\text{ V}, V_{GE} = 0$	—	—	10	μA
Gate-Emitter Cut-off Voltage	$V_{GE(OFF)}$	$I_C = 1\text{ mA}, V_{CE} = 5\text{ V}$	0.8	—	1.5	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 150\text{ A}, V_{GE} = 4\text{ V (Pulsed)}$	—	3.5	7	V
Input Capacitance	C_{ies}	$V_{CE} = 10\text{ V}, V_{GE} = 0, f = 1\text{ MHz}$	—	3800	—	pF
Switching Time	Rise Time	 $V_{IN} : t_r \leq 100\text{ ns}$ $t_f \leq 100\text{ ns}$ Duty cycle $\leq 1\%$	—	2.3	—	μs
	Turn-on Time		—	2.5	—	
	Fall Time		—	1.7	—	
	Turn-off Time		—	2.1	—	
Thermal Resistance	$R_{th(j-c)}$	—	—	—	6.25	°C/W

These devices are MOS type. Users should follow proper ESD Handling Procedures.
 Operating condition of turn-off dv/dt should be lower than $400\text{ V}/\mu\text{s}$.

961001EAA2

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

