

TOSHIBA INSULATED GATE BIPOLAR TRANSISTOR SILICON N CHANNEL MOS TYPE

GT8Q102(SM)

HIGH POWER SWITCHING APPLICATIONS

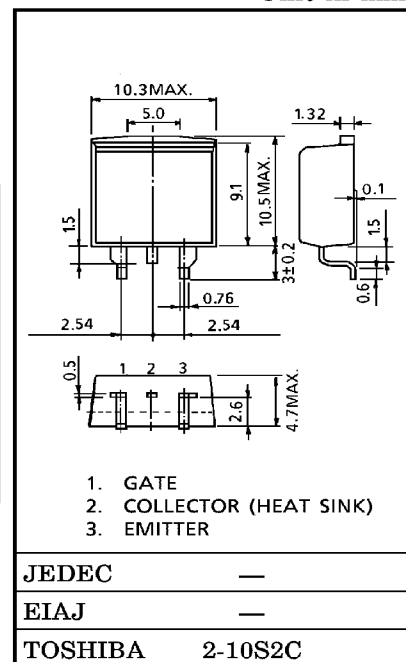
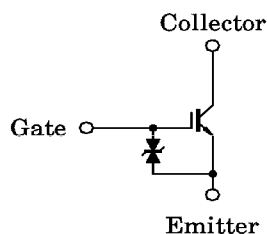
MOTOR CONTROL APPLICATIONS

Unit in mm

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Emitter Voltage		V_{CES}	1200	V
Gate-Emitter Voltage		V_{GES}	± 20	V
Collector Current	DC	I_C	8	A
	1ms	I_{CP}	16	
Collector Power Dissipation	($T_c = 25^\circ\text{C}$)	P_C	50	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

EQUIVALENT CIRCUIT



Weight : 1.4g

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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GES}	$V_{GE} = \pm 20\text{V}, V_{CE} = 0$	—	—	± 10	μA
Collector Cut-off Current		I_{CES}	$V_{CE} = 1200\text{V}, V_{GE} = 0$	—	—	1.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE}(\text{OFF})$	$V_{CE} = 5\text{V}, I_C = 8\text{mA}$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE}(\text{sat})$	$I_C = 8\text{A}, V_{GE} = 15\text{V}$	—	3.0	4.0	V
Input Capacitance		C_{ies}	$V_{CE} = 10\text{V}, V_{GE} = 0, f = 1\text{MHz}$	—	1000	—	pF
Switching Time	Rise Time	t_r		—	0.3	0.6	μs
	Turn-on Time	t_{on}		—	0.4	0.8	
	Fall Time	t_f		—	0.25	0.5	
	Turn-off Time	t_{off}		—	0.7	1.3	

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