

TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

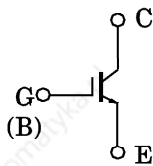
# MG150J1BS11

HIGH POWER SWITCHING APPLICATIONS

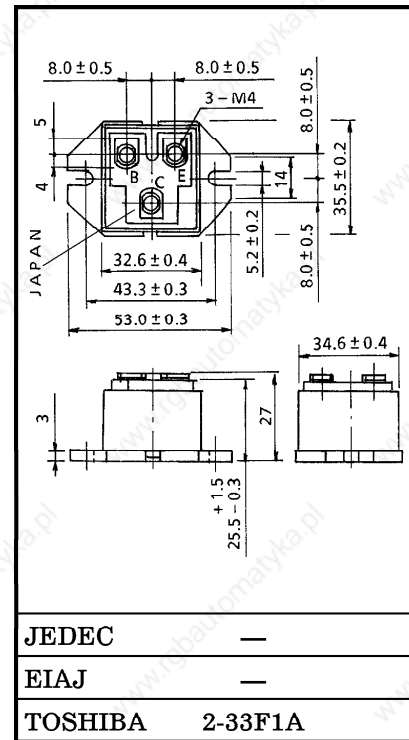
MOTOR CONTROL APPLICATIONS

- High Input Impedance
- High Speed :  $t_f = 1.0 \mu s$  (Max.) ( $I_C = 150A$ )
- Low Saturation Voltage :  $V_{CE(sat)} = 2.7V$  (Max.) ( $I_C = 150A$ )
- Enhancement-Mode
- The Electrodes are Isolated from Case.

EQUIVALENT CIRCUIT



Unit in mm



Weight : 86g

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CES}$	600	V
Gate-Emitter Voltage	$V_{GES}$	$\pm 20$	V
Collector Current	DC	$I_C$	150
	1ms	$I_{CP}$	300
Collector Power Dissipation	$P_C$	450	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ C$
Isolation Voltage	$V_{Isol}$	2500 (AC 1 minute)	V
Screw Torque (Terminal / Mounting)	—	2 / 3	N·m

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I <sub>GES</sub>	V <sub>GE</sub> = ±20V, V <sub>CE</sub> = 0	—	—	±500	nA
Collector Cut-Off Current		I <sub>CES</sub>	V <sub>CE</sub> = 600V, V <sub>GE</sub> = 0	—	—	1.0	mA
Gate-Emmitter Cut-Off Voltage		V <sub>GE (off)</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 150mA	3.0	—	6.0	V
Collector-Emmitter Saturation Voltage		V <sub>CE (sat)</sub>	I <sub>C</sub> = 150A, V <sub>GE</sub> = 15V	—	2.3	2.7	V
Input Capacitance		C <sub>ies</sub>	V <sub>CE</sub> = 10V, V <sub>GE</sub> = 0, f = 1MHz	—	12000	—	pF
Switching Time	Rise Time	t <sub>r</sub>		—	0.3	0.8	μs
	Turn-On Time	t <sub>on</sub>		—	0.4	1.0	
	Fall Time	t <sub>f</sub>		—	0.6	1.0	
	Turn-Off Time	t <sub>off</sub>		—	1.0	1.6	
Thermal Resistance		R <sub>th (j-c)</sub>		—	—	0.278	°C / W

