

TOSHIBA IGBT Module Silicon N Channel IGBT

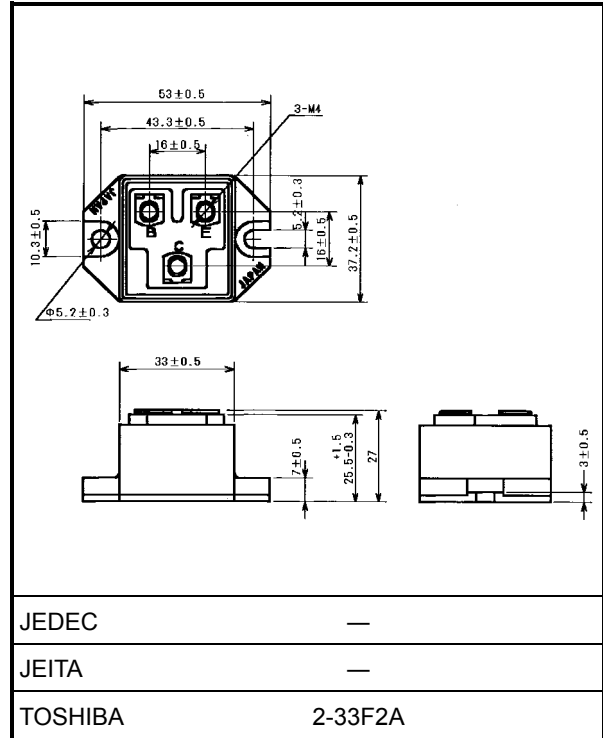
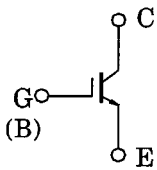
# MG150J1BS11

High Power Switching Applications  
 Motor Control Applications

Unit: mm

- Enhancement-mode
- The electrodes are isolated from case.

### Equivalent Circuit

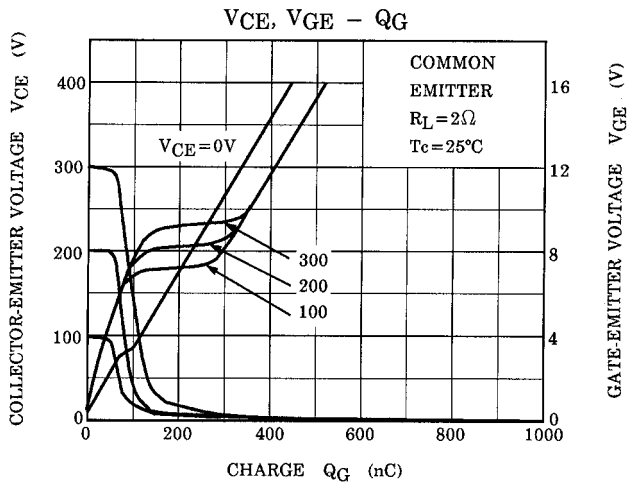
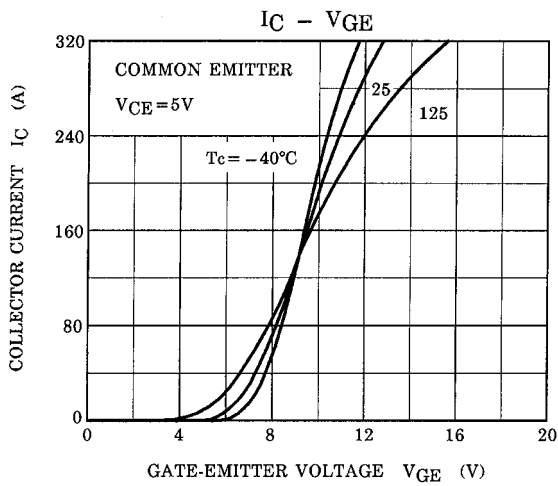
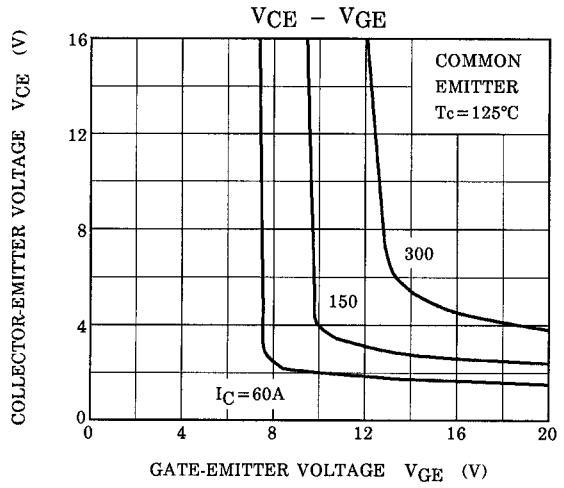
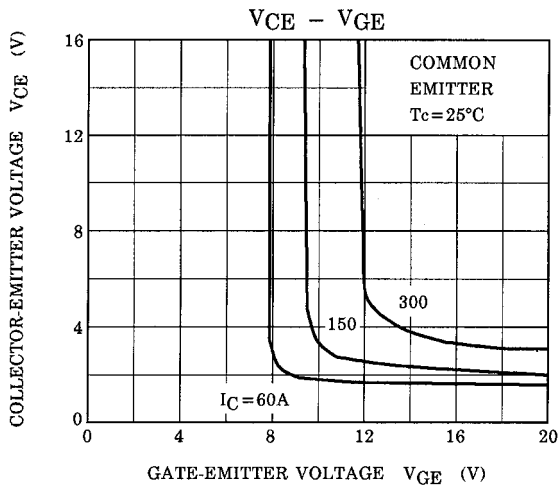
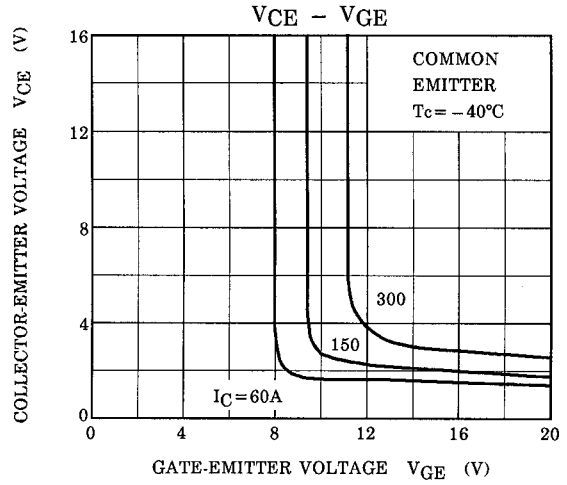
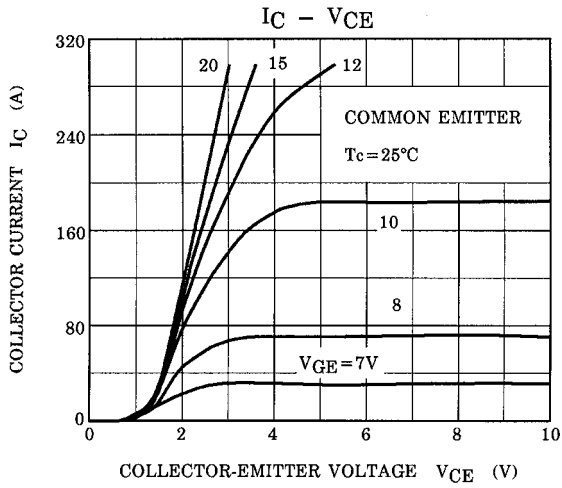


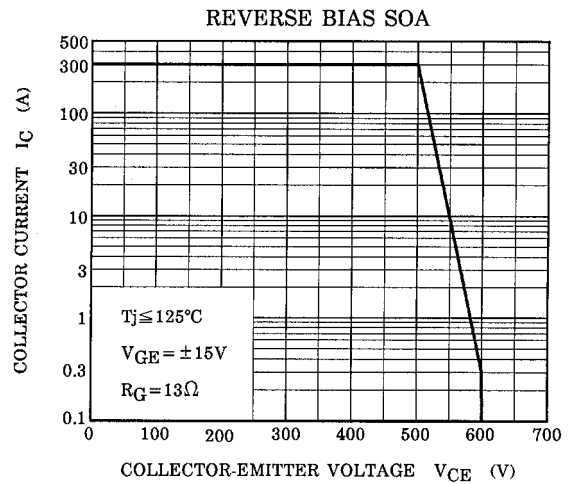
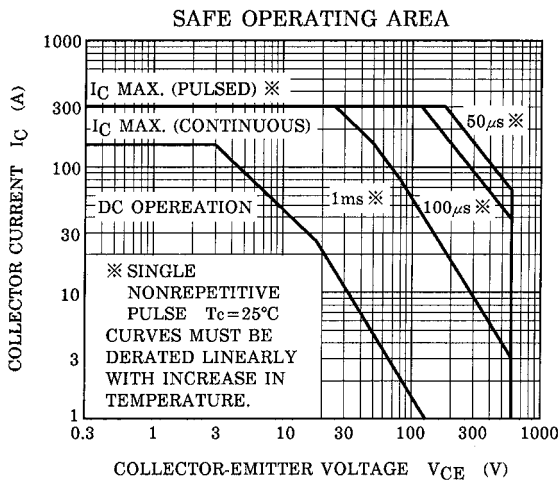
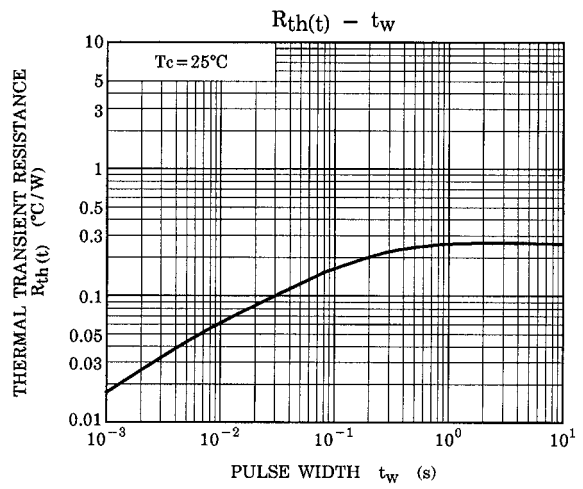
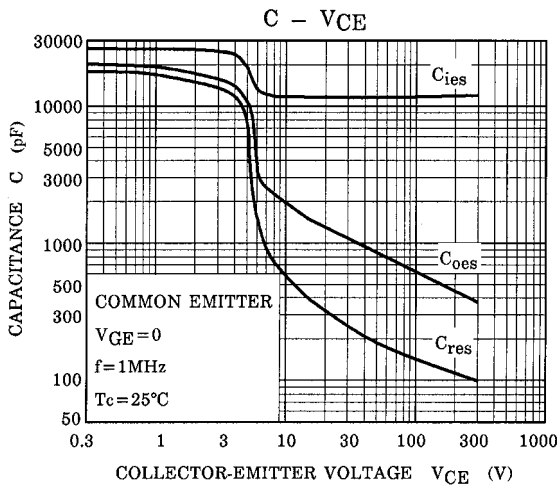
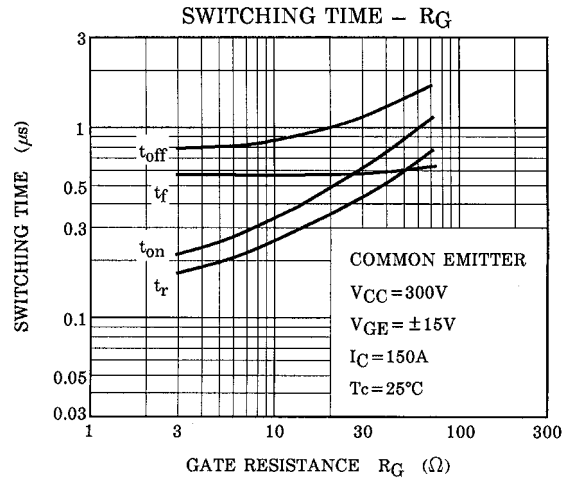
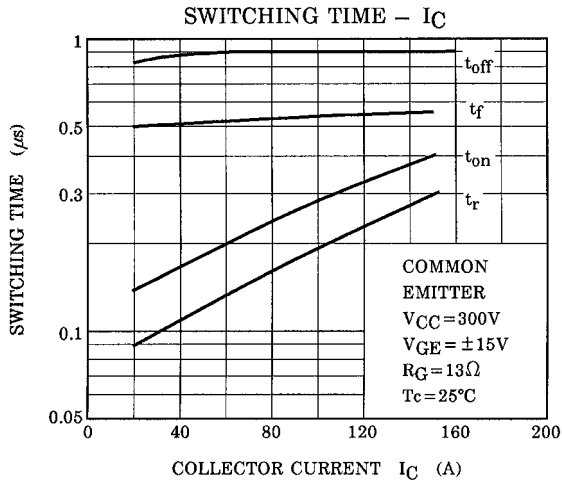
### Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit	
Collector-emitter voltage	$V_{CES}$	600	V	
Gate-emitter voltage	$V_{GES}$	±20	V	
Collector current	DC	$I_C$	150	A
	1ms	$I_{CP}$	300	
Collector power dissipation	$P_C$	450	W	
Junction temperature	$T_j$	150	°C	
Storage temperature range	$T_{stg}$	-40 to 125	°C	
Isolation voltage	$V_{isol}$	2500 (AC 1 min.)	V	
Screw torque (Terminal / mounting)	—	2 / 3	N·m	

## Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector cut-off current		$I_{CES}$	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE (off)}$	$V_{CE} = 5V, I_C = 150mA$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 150A, V_{GE} = 15V$	—	2.3	2.7	V
Input capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	12000	—	pF
Switching time	Rise time	$t_r$		—	0.3	0.8	μs
	Turn-on time	$t_{on}$		—	0.4	1.0	
	Fall time	$t_f$		—	0.6	1.0	
	Turn-off time	$t_{off}$		—	1.0	1.6	
Thermal resistance		$R_{th (j-c)}$	—	—	—	0.278	°C / W





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