

TOSHIBA IGBT Module Silicon N Channel IGBT

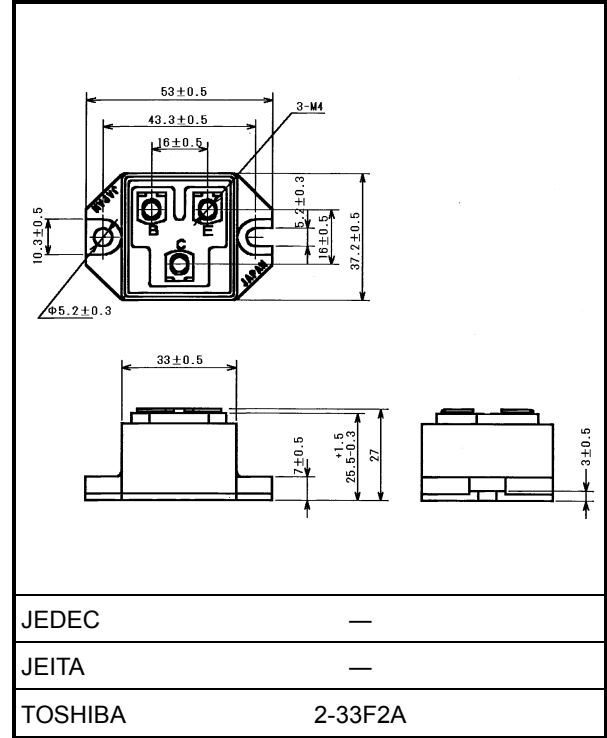
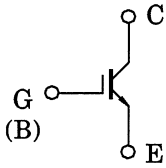
MG50J1BS11

High Power Switching Applications
 Motor Control Applications

Unit: mm

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

Equivalent Circuit

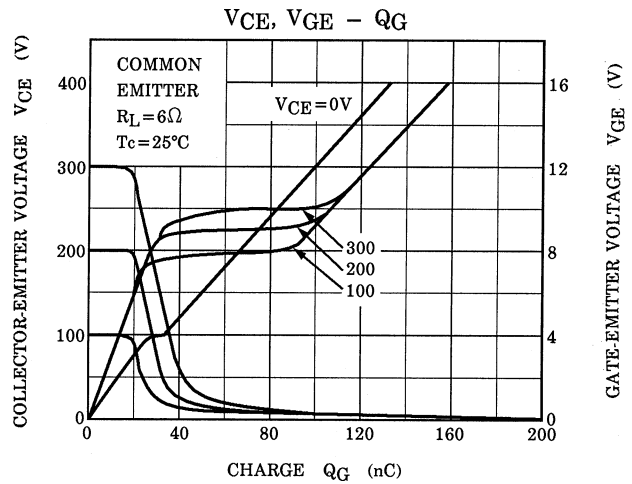
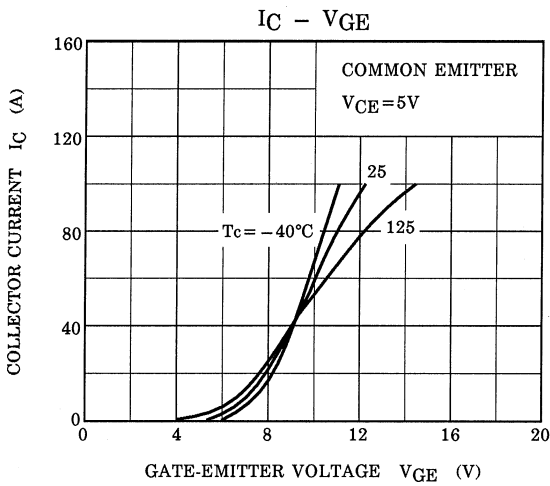
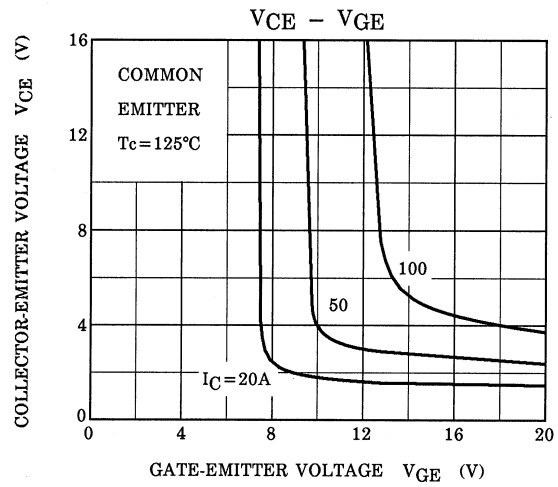
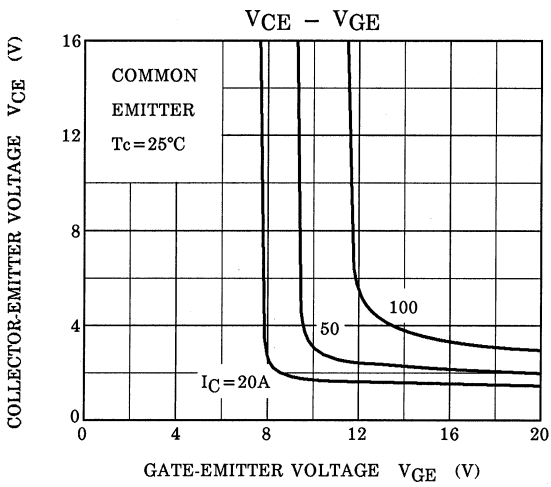
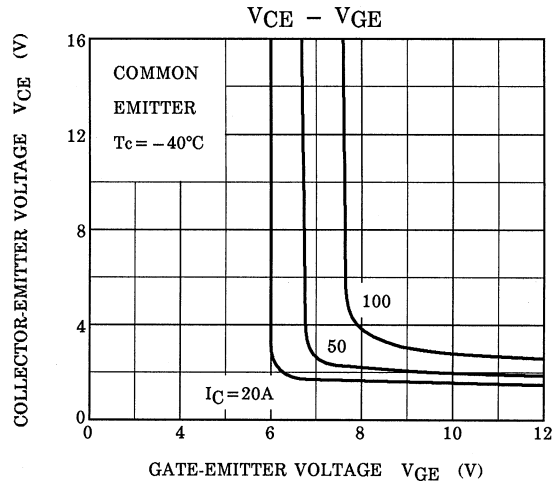
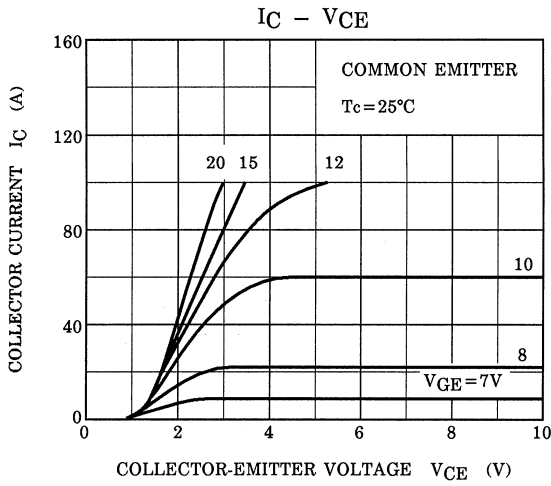


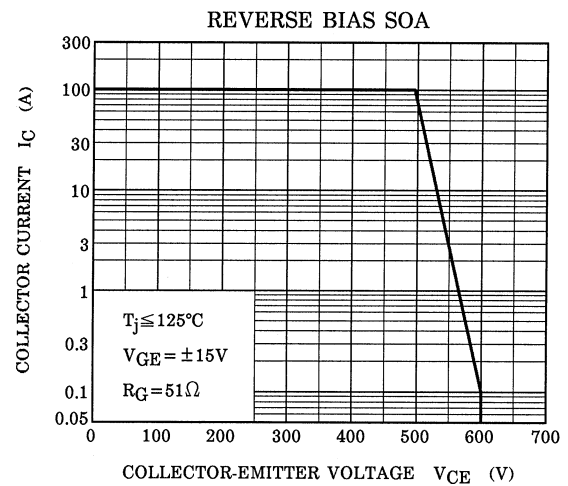
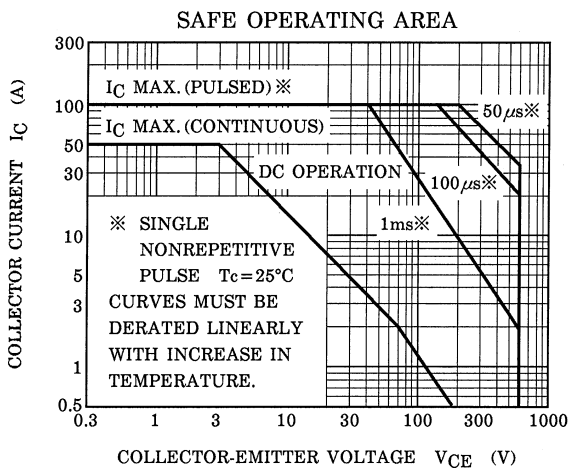
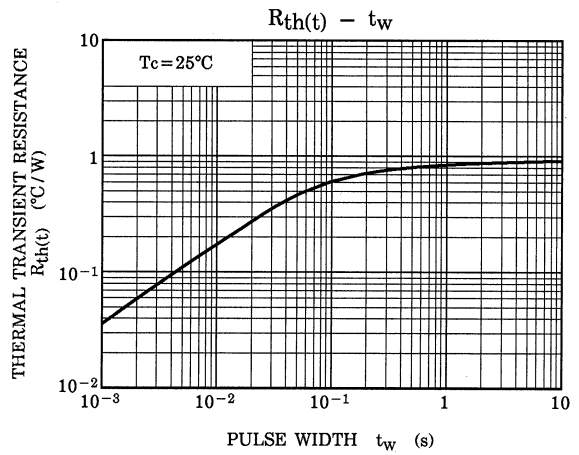
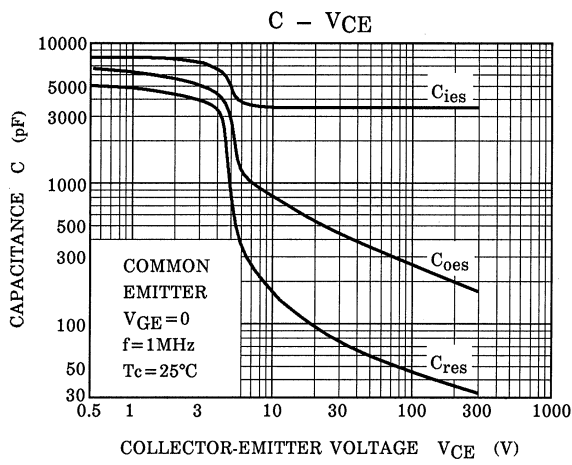
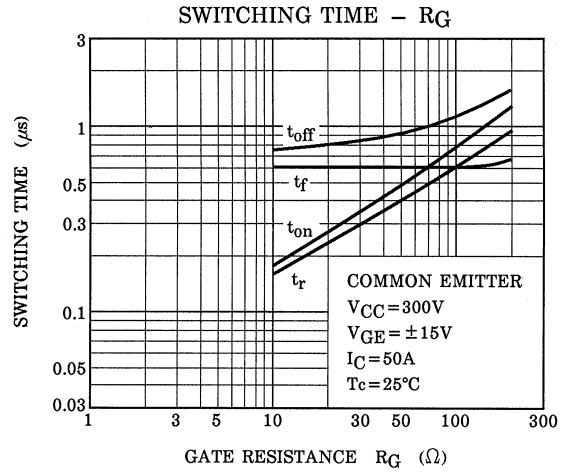
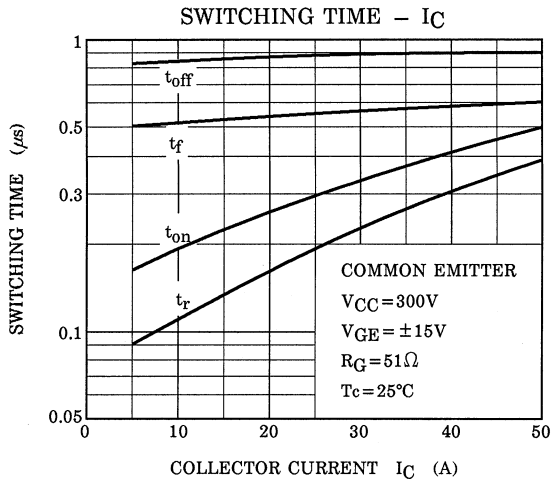
Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
Collector-emitter voltage		V_{CES}	600	V
Gate-emitter voltage		V_{GES}	±20	V
Collector current	DC	I_C	50	A
	1ms	I_{CP}	100	
Collector power dissipation		P_C	150	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-40 to 125	°C
Isolation voltage		V_{isol}	2500 (AC 1 minute)	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}	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	± 500	nA
Collector cut-off current		I_{CES}	$V_{CE} = 600V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE (OFF)}$	$I_C = 50mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 50A, V_{GE} = 15V$	—	2.3	2.7	V
Input capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	3500	—	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		$R_{th (j-c)}$	—	—	0.83	°C / W	





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