

TOSHIBA IGBT Module Silicon N - Channel IGBT

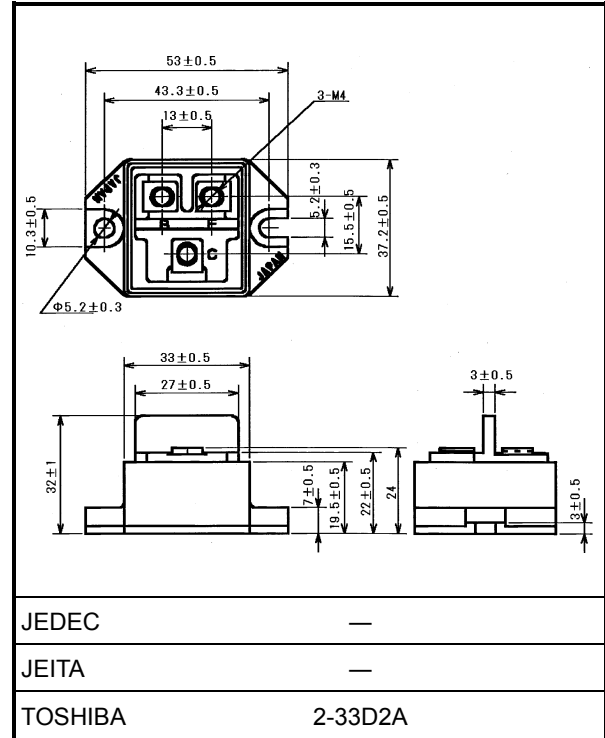
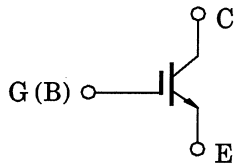
MG25Q1BS11

High Power Switching Applications
 Motor Control Applications

Unit: mm

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

Equivalent Circuit

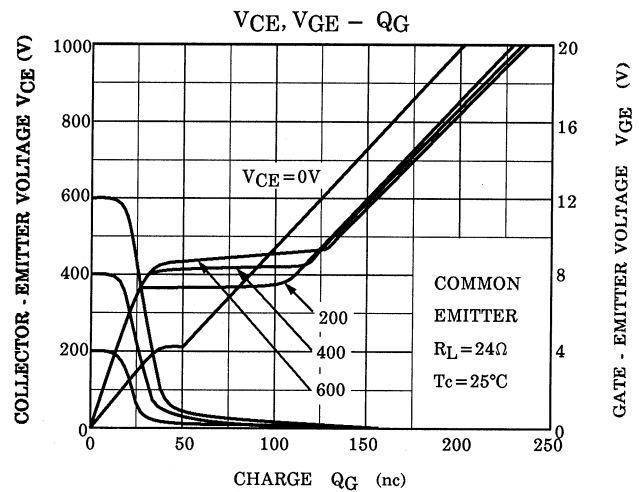
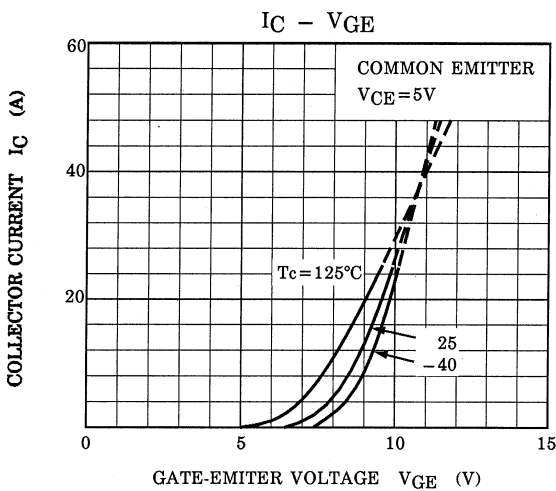
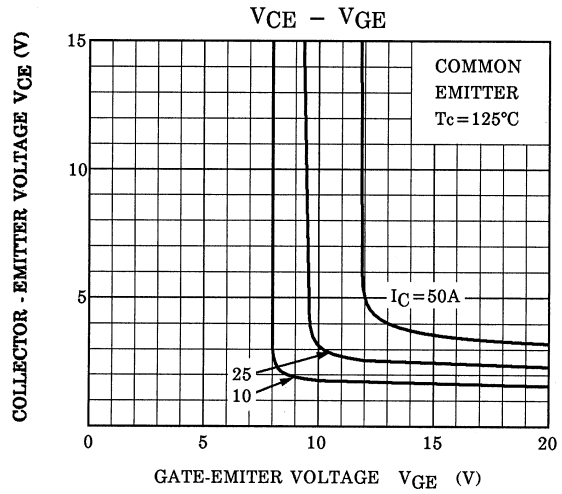
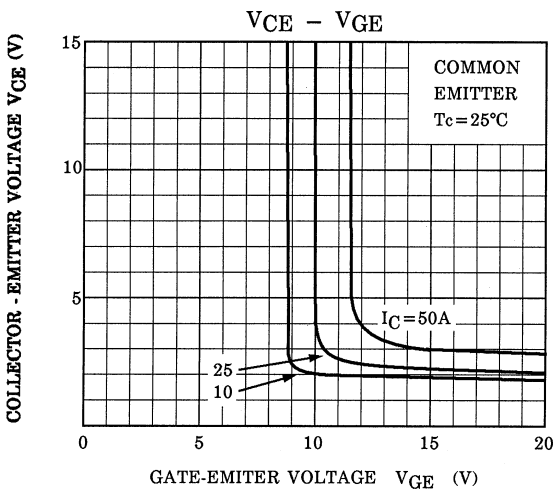
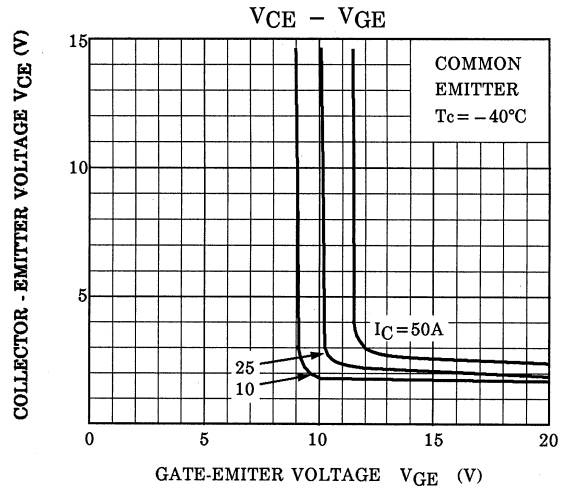
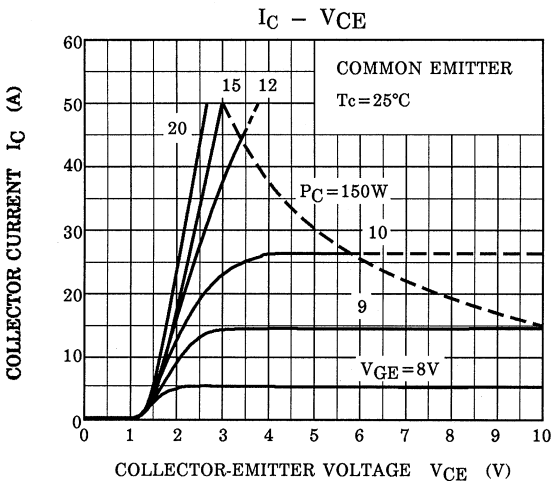


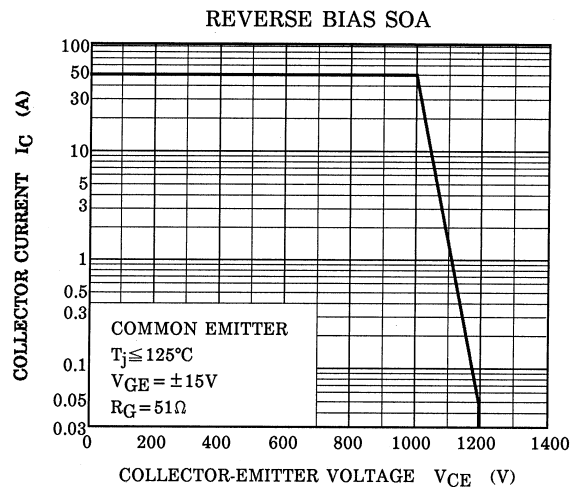
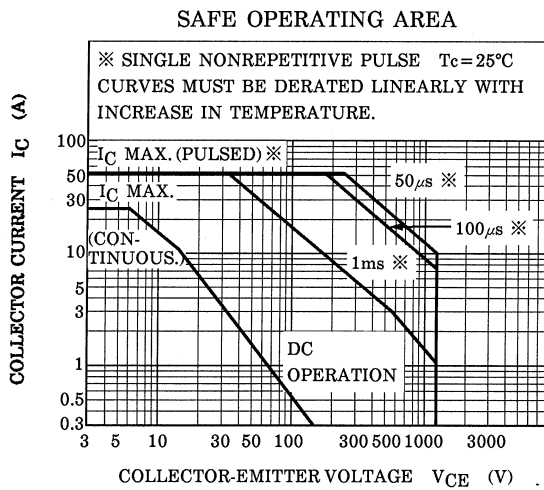
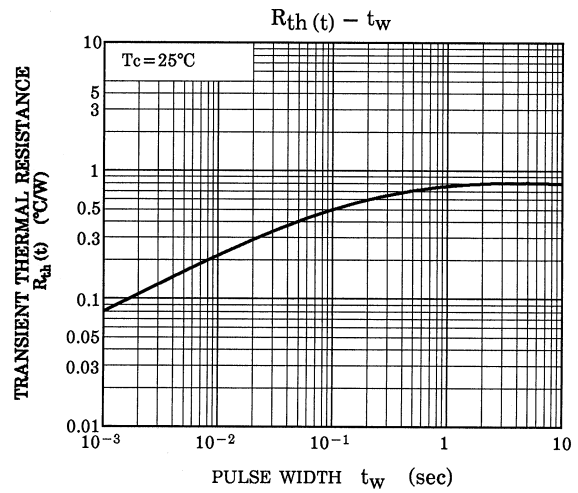
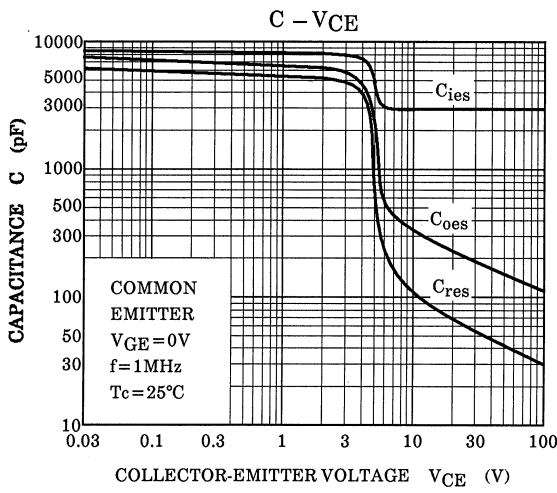
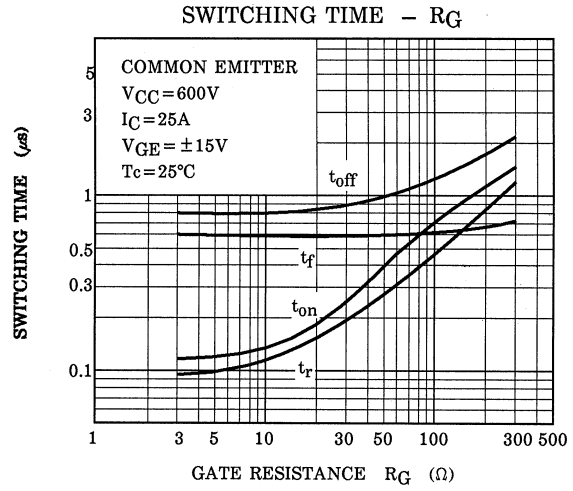
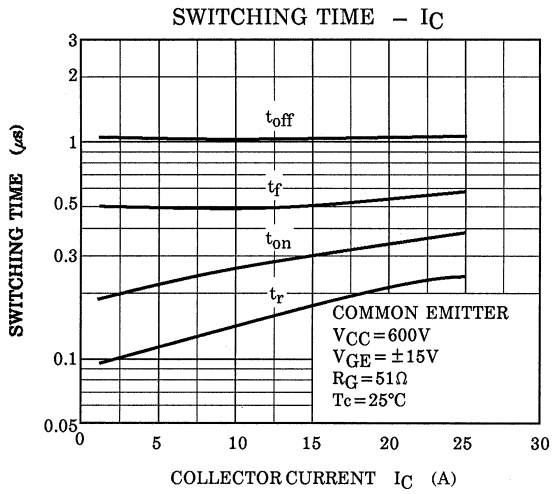
Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-emitter voltage	V_{CES}	1200	V
Gate-emitter voltage	V_{GES}	±20	V
Collector current	DC	I_C	A
	1ms	I_{CP}	
Collector power dissipation (Tc = 25°C)	P_C	250	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}	$V_{CE} = 1200V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE (OFF)}$	$I_C = 25mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-emitter Saturation voltage		$V_{CE (sat)}$	$I_C = 25A, V_{GE} = 15V$	—	2.2	2.7	V
Input capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f=1MHz$	—	3000	—	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		—	0.6	1.0	
	Turn-off time	t_{off}		—	1.2	1.8	
Thermal resistance		$R_{th (j-c)}$	—	—	—	0.5	°C / W





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