

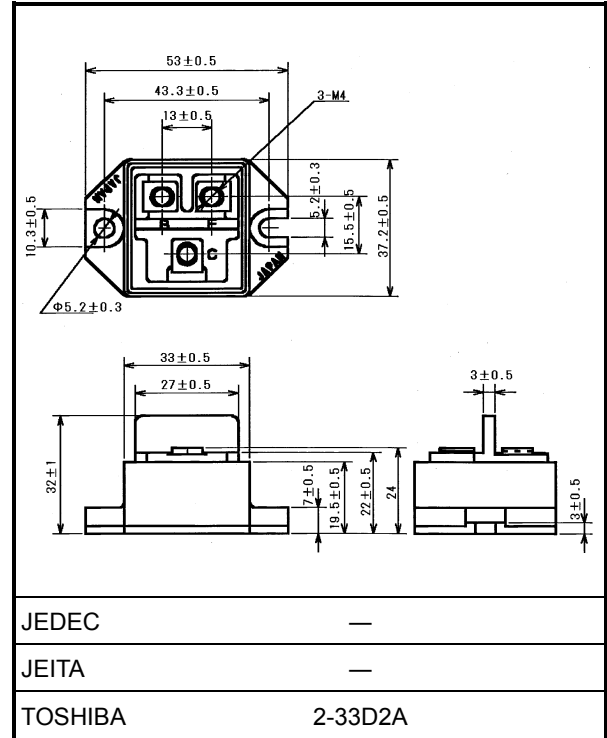
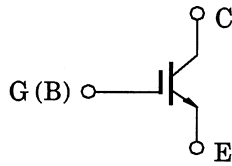
# MG50Q1BS11

High Power Switching Applications  
 Motor Control Applications

Unit: mm

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

### Equivalent Circuit

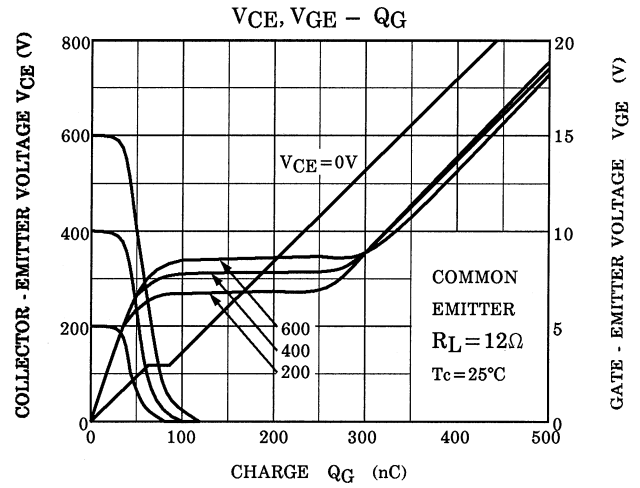
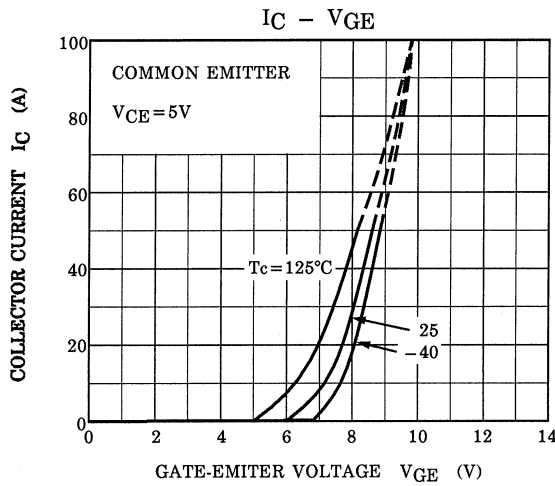
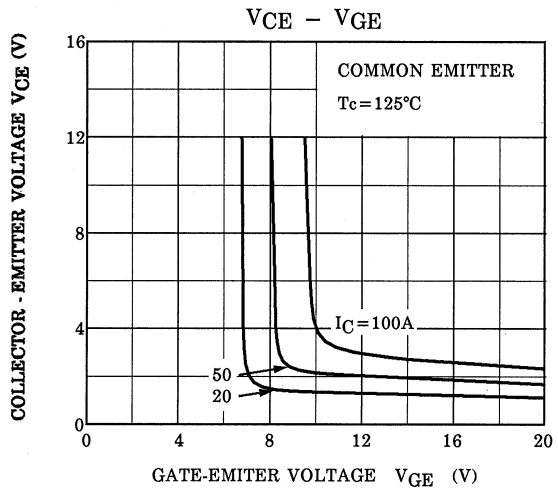
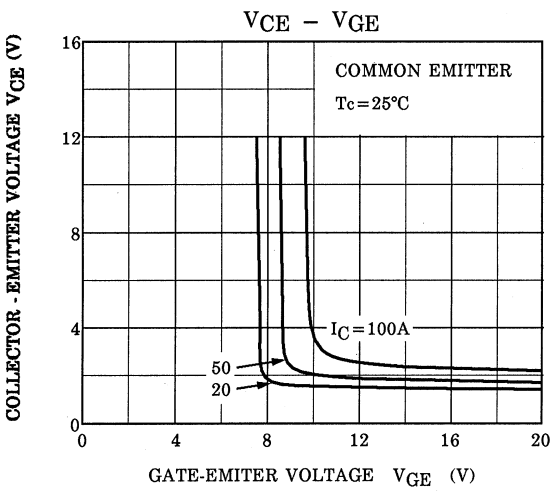
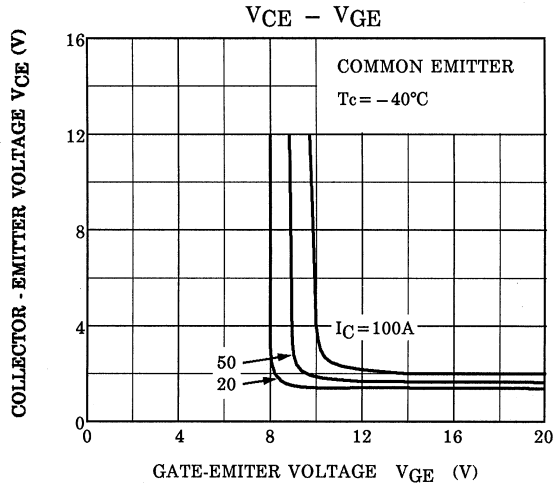
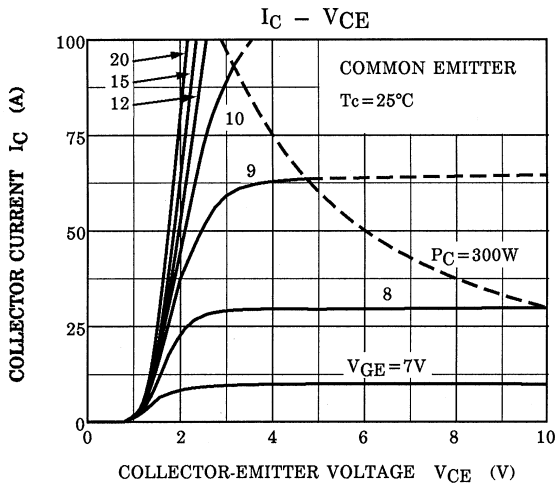


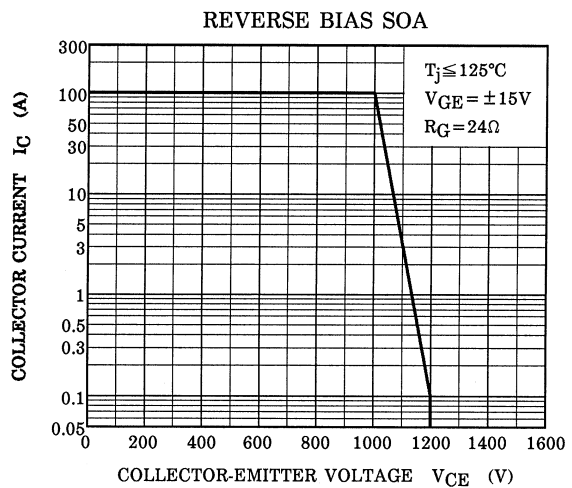
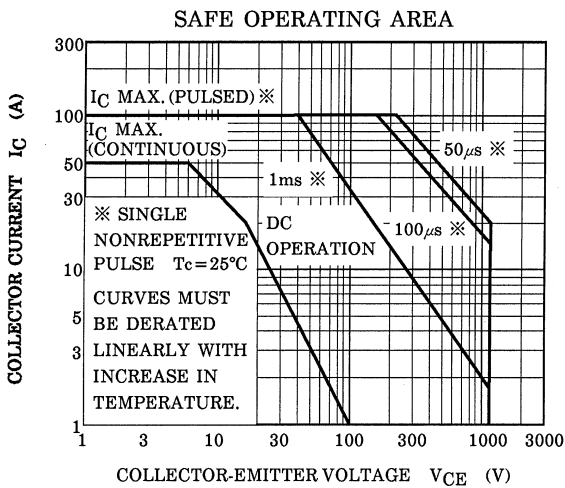
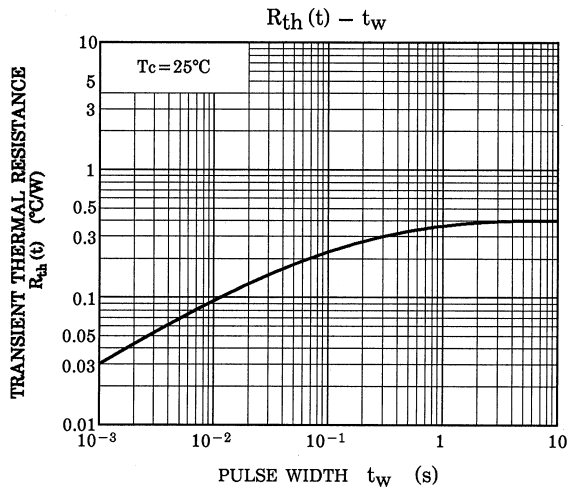
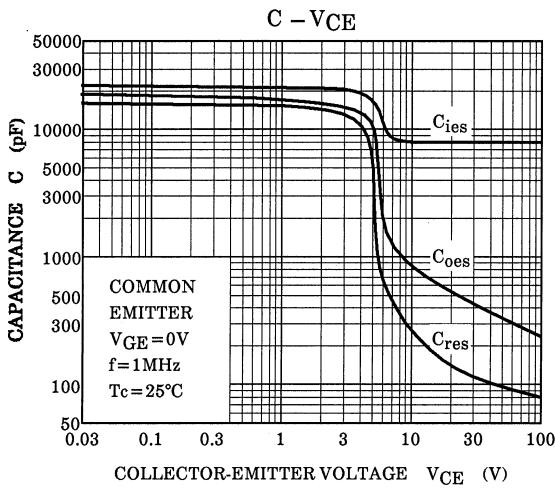
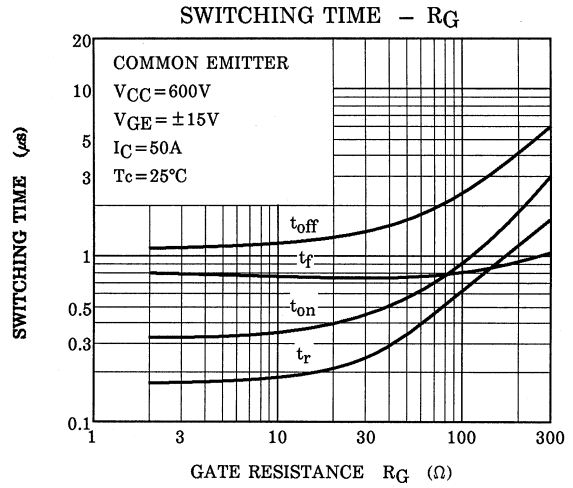
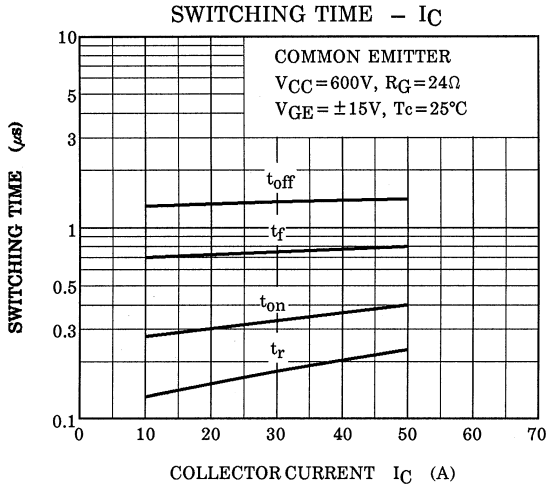
### Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-emitter voltage	V <sub>CES</sub>	1200	V
Gate-emitter voltage	V <sub>GES</sub>	±20	V
Collector current	DC	I <sub>C</sub>	50
	1ms	I <sub>CP</sub>	100
Collector power dissipation (T <sub>c</sub> = 25°C)	P <sub>C</sub>	300	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-40 to 125	°C
Isolation voltage	V <sub>Isol</sub>	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		$I_{GES}$	$V_{GE} = \pm 20V, V_{CE} = 0$	—	—	$\pm 500$	nA
Collector cut-off current		$I_{CES}$	$V_{CE} = 1200V, V_{GE} = 0$	—	—	1.0	mA
Gate-emitter cut-off voltage		$V_{GE (OFF)}$	$I_C = 50mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 50A, V_{GE} = 15V$	—	2.2	2.7	V
Input capacitance		$C_{ies}$	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	7800	—	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		$R_{th (j-c)}$		—	—	0.39	°C / W





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