

GTR Module

Silicon N Channel IGBT

High Power Switching Applications

Motor Control Applications

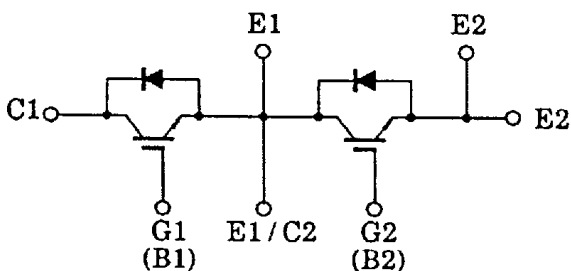
Features

- High input impedance
- High speed: $t_f = 1.0\mu\text{s}$ (Max.)
 $t_{rr} = 0.5\mu\text{s}$ (Max.)
- Low saturation: $V_{CE(sat)} = 2.7\text{V}$ (Max.)
- Enhancement mode
- The electrodes are isolated from case
- Includes a complete half bridge card in one package

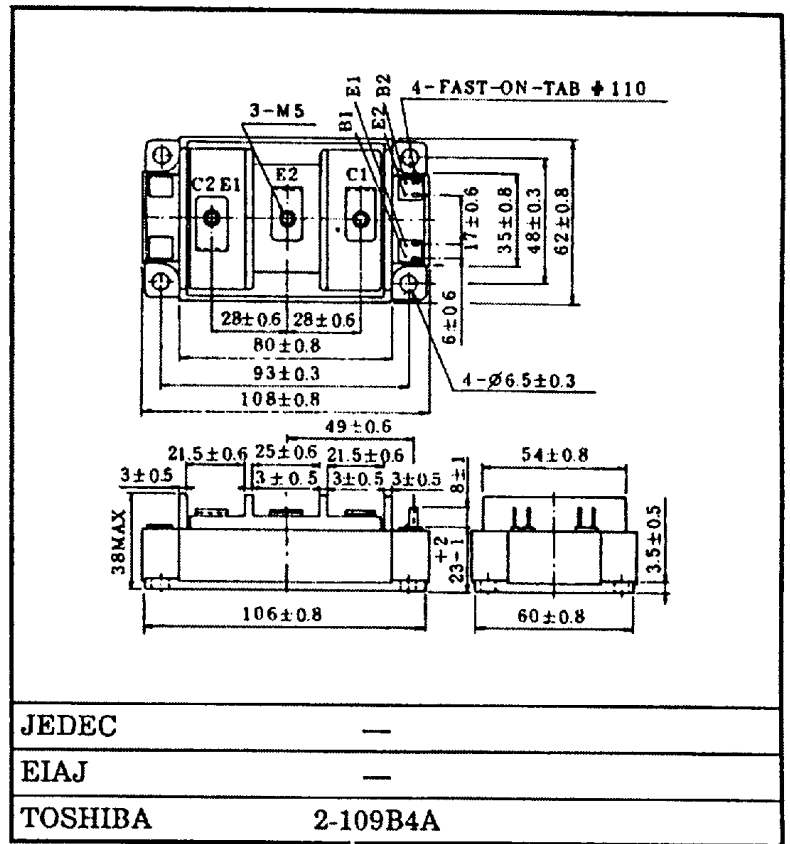
Maximum Ratings ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CES}	1200	V
Gate-Emitter Voltage	V_{GES}	± 20	V
Collector Current	DC	I_C	100
	1ms	I_{CP}	200
Forward Current	DC	I_F	100
	1ms	I_{FM}	200
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)	P_C	800	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 ~ 125	$^\circ\text{C}$
Isolation Voltage	V_{isol}	2500 (AC 1 min.)	V
Screw Torque (Terminal/Mounting)	—	3/3	$\text{N}\cdot\text{m}$

Equivalent Circuit



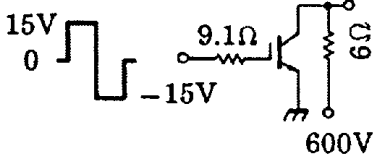
Unit in mm



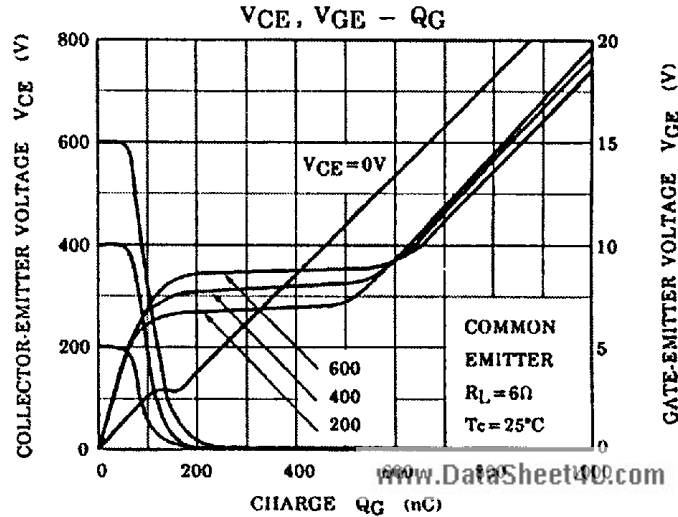
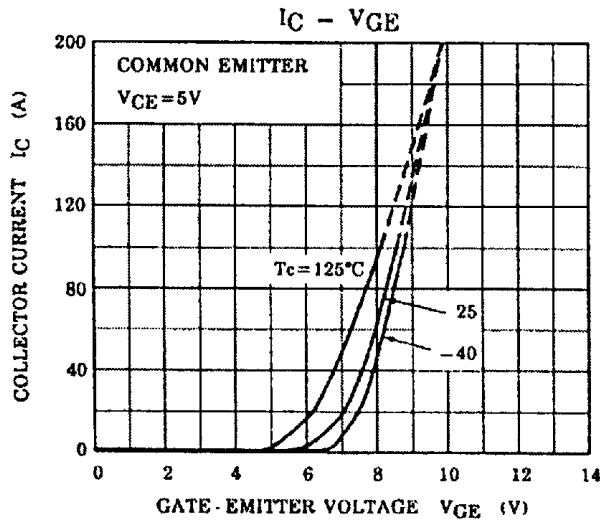
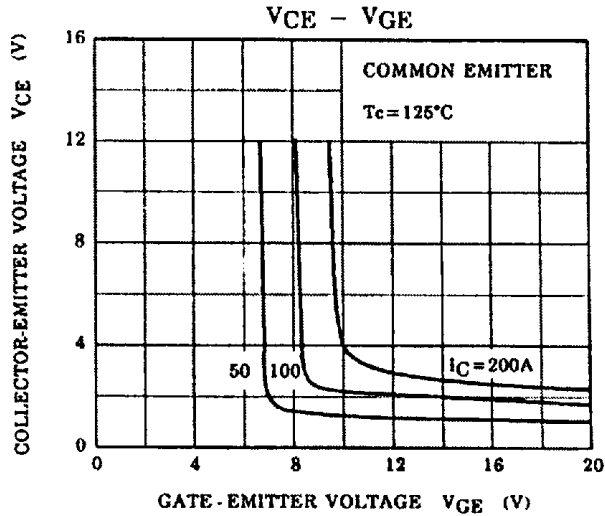
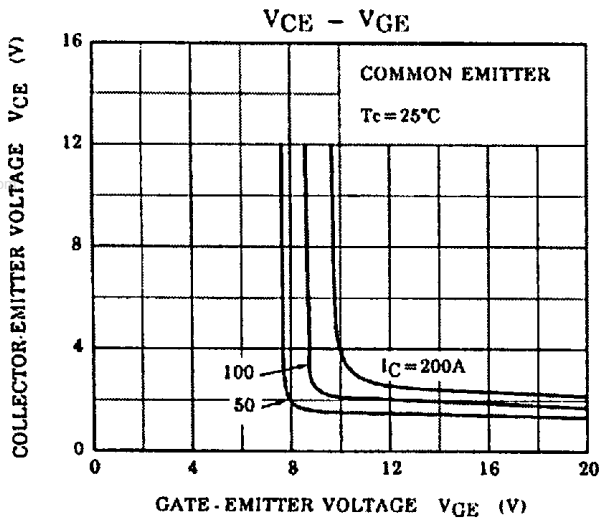
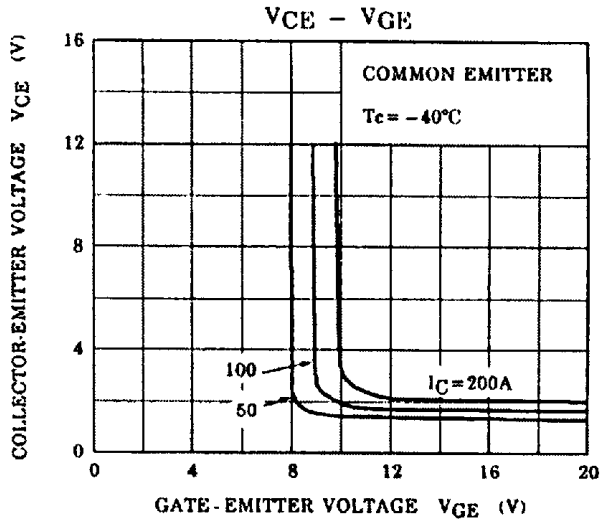
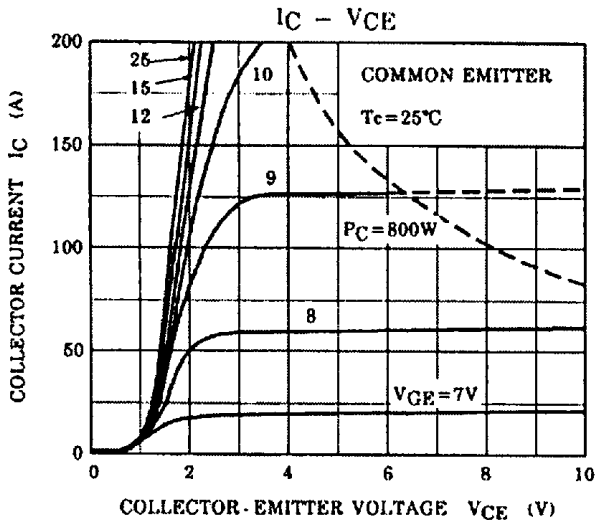
Weight : 445g

MG100Q2YS11

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}	$V_{CE} = 1200V, V_{GE} = 0$	—	—	2.0	mA
Gate-Emitter Cut-off Voltage		$V_{GE (OFF)}$	$I_C = 100mA, V_{CE} = 5V$	3.0	—	6.0	V
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 100A, V_{GE} = 15V$	—	2.2	2.7	V
Input Capacitance		C_{ies}	$V_{CE} = 10V, V_{GE} = 0, f = 1MHz$	—	15600	—	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	
Forward Voltage		V_F	$I_F = 100A, V_{GE} = 0$	—	2.2	3.0	V
Reverse Recovery Time		t_{rr}	$I_F = 100A, V_{GE} = -10V$ $di/dt = 200A/\mu s$	—	0.25	0.5	μs
Thermal Resistance		$R_{th (j - c)}$	Transistor	—	—	0.156	°C/W
			Diode	—	—	0.5	

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