

TOSHIBA GTR MODULE SILICON N CHANNEL IGBT

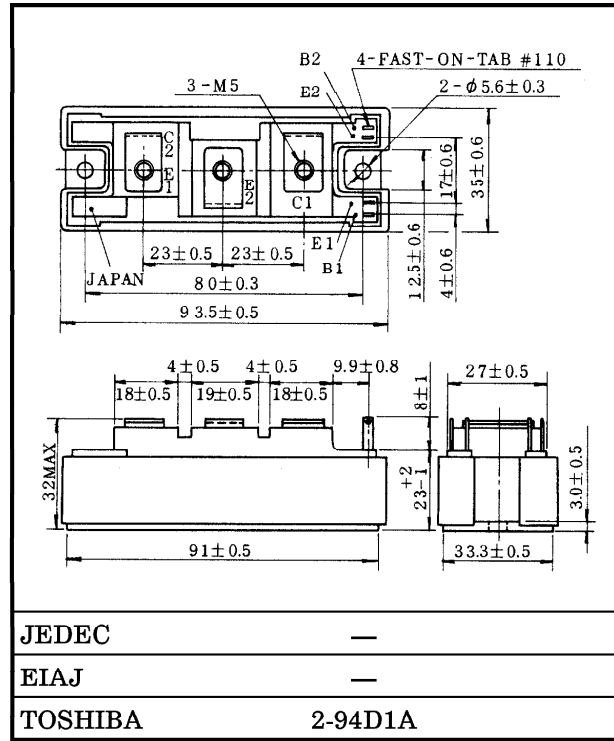
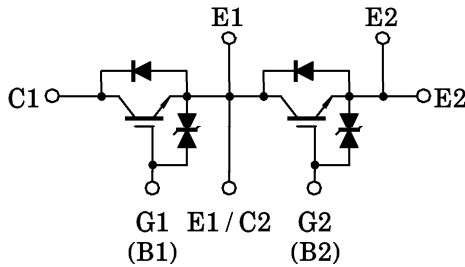
MG50Q2YS40

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

Unit in mm

- High Input Impedance
- High Speed : $t_f = 0.5\mu s$ (Max.)
 $t_{rr} = 0.5\mu s$ (Max.)
- Low Saturation Voltage
: $V_{CE(sat)} = 4.0V$ (Max.)
- Enhancement-Mode
- Includes a Complete Half Bridge in One Package.
- The Electrodes are Isolated from Case.

EQUIVALENT CIRCUIT



Weight : 202g

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	50
	1ms	I_{CP}	100
Forward Current	DC	I_F	50
	1ms	I_{FM}	100
Collector Power Dissipation (Tc = 25°C)	P_C	400	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-40~125	°C
Isolation Voltage	V_{Isol}	2500 (AC 1 minute)	V
Screw Torque (Terminal / Mounting)	—	3 / 3	N · m

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I _{GES}	V _{GE} = ±20V, V _{CE} = 0	—	—	±10	μA
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	—	3.0	4.0	V
Input Capacitance		C _{ies}	V _{CE} = 10V, V _{GE} = 0, f = 1MHz	—	6000	—	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		—	0.2	0.5	
	Turn-off Time	t _{off}		—	0.8	1.5	
Forward Voltage		V _F	I _F = 50A, V _{GE} = 0	—	2.0	2.5	V
Reverse Recovery Time		t _{rr}	I _F = 50A, V _{GE} = -10V di / dt = 100A / μs	—	0.25	0.5	μs
Thermal Resistance		R _{th(j-c)}	Transistor	—	—	0.31	°C / W
			Diode	—	—	1.0	

