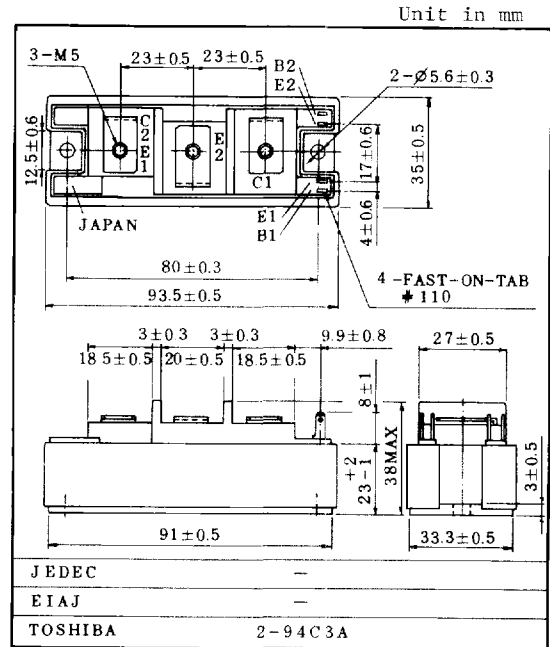
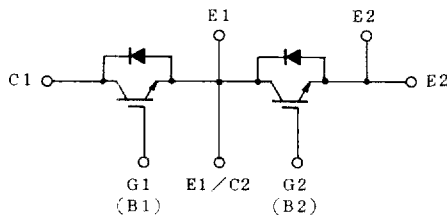


HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

- High Input Impedance
- High Speed : $t_f=0.35\mu s(\text{Max.})$
 $t_{rr}=0.25\mu s(\text{Max.})$
- Low Saturation Voltage
: $V_{CE(sat)}=4.0V(\text{Max.})$
- Enhancement-Mode
- Includes a Complete Half Bridge in One Package.
- The Electrodes are Isolated from Case.

EQUIVALENT CIRCUIT



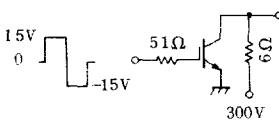
Weight: 205g

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	
Forward Current	DC	I_F	50	A
	1ms	I_{FM}	100	
Collector Power Dissipation		P_C	250	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)		—	30/30	kg·cm

MG50J2YS1

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
Collector-Emitter Breakdown Voltage		$V_{(BR)CES}$	$I_C=10mA, V_{GE}=0$	600	-	-	V
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}	$V_{CE}=10V, V_{GE}=0, f=1MHz$	-	3500	-	pF
Switching Time	Rise Time	t_r		-	0.30	0.60	μs
	Turn-on Time	t_{on}		-	0.40	0.80	
	Fall Time	t_f		-	0.15	0.35	
	Turn-off Time	t_{off}		-	0.50	1.00	
Forward Voltage		V_F	$I_F=50A, V_{GE}=0$	-	2.0	2.7	V
Reverse Recovery Time		t_{rr}	$I_F=50A, V_{GE}=-10V$ $di/dt=100A/\mu s$	-	0.15	0.25	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	-	-	0.50	$^{\circ}C/W$
			Diode	-	-	0.83	

