

MG50Q2YK1

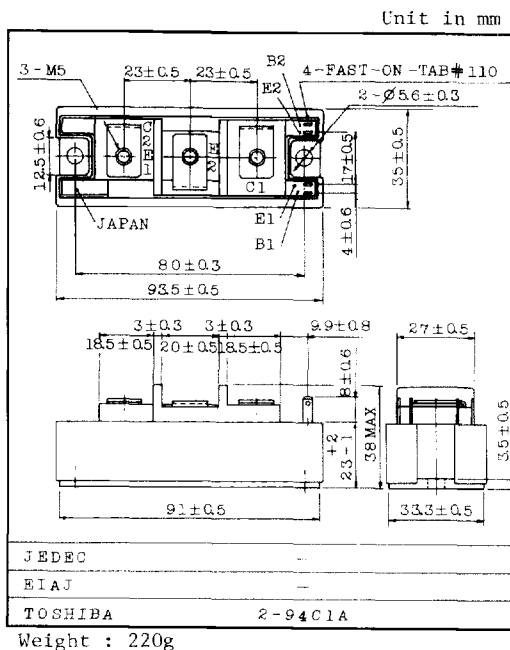
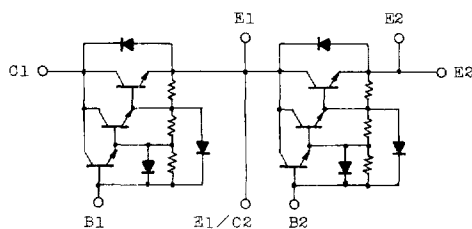
GTR MODULE
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

FEATURES:

- The Collector is Isolation from Case.
- 2 Power Transistors and 2 Free Wheeling Diodes are Built-in to 1 Package.
- High DC Current Gain
 - : $h_{FE}=100(\text{Min.})(I_C=50A)$
- Low Saturation Voltage
 - : $V_{CE(\text{sat})}=2.5V(\text{Max.})(I_C=50A)$

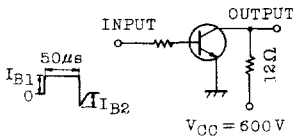
EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		VCBO	1200	V
Collector-Emitter Sustaining Voltage		VCEX(SUS)	1200	V
		VCEO(SUS)	900	
Emitter-Base Voltage		VEBO	7	V
Collector Current	DC	IC	50	A
	1ms	ICP	100	
Forward Current	DC	IF	50	A
	1ms	IFM	100	
Base Current		IB	5	A
Collector Power Dissipation (Tc=25°C)		PC	350	W
Junction Temperature		Tj	150	°C
Storage Temperature Range		Tstg	-40~125	°C
Isolation Voltage		VIsol	2500 (AC, 1 Minute)	V
Screw Torque (Terminal/Mounting)		-	20/30	kg·cm

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=1200V, I_E=0$	-	-	1.0	mA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=7V, I_C=0$	-	-	200	mA
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	$I_C=1A, L=40mH$	900	-	-	V
DC Current Gain		h_{FE}	$V_{CE}=5V, I_C=50A$	100	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=50A, I_B=1A$	-	2.0	2.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		-	2.8	3.2	V
Switching Time	Turn-on Time	t_{on}	 $I_{B1}=1A, I_{B2}=-3A$ DUTY CYCLE=0.5% $V_{CE}=600V$	-	0.7	2	μs
	Storage Time	t_{stg}		-	10	13	
	Fall Time	t_f		-	2.4	4	
Forward Voltage		V_F	$I_F=50A, I_B=0$	-	1.3	1.8	V
Reverse Recovery Time		t_{rr}	$I_F=50A, V_{BE}=-3V$ $di/dt=100A/\mu s$	-	0.6	1.0	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	-	-	0.35	$^{\circ}C/W$
			Diode	-	-	1.3	

