TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

TOSHIBA GTR MODULE

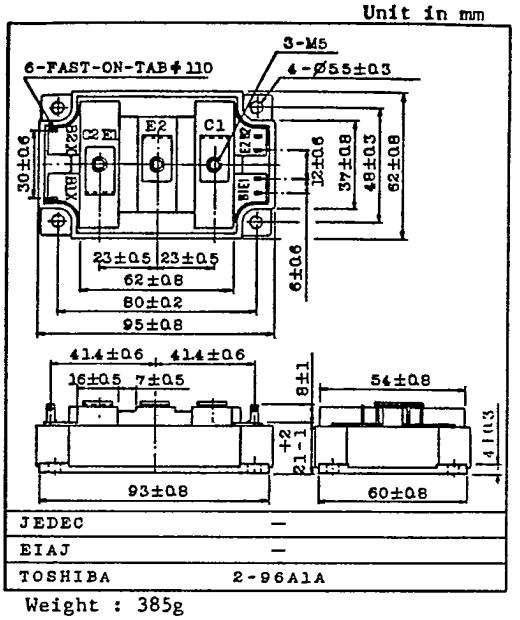
MG100G2YL1

SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

- The Collector is Isolated from Case
- With Built-in Free Wheeling Diode
- High DC Current Gain: h_{FE}=100(Min.)(I_C=100A)
- Low Saturation Voltage
  : $V_{CE(sat)}$=2V(Max.)(I_C=100A)
- High Speed : t_f=2μs(Max.)(I_C=100A)

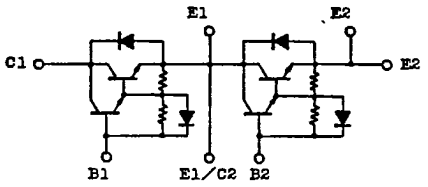
Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-96A1A

Weight : 385g

EQUIVALENT CIRCUIT



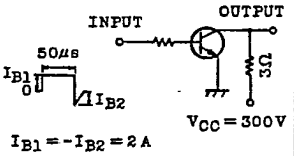
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Sustaining Voltage		$V_{CEX(SUS)}$	600	V
		$V_{CEO(SUS)}$	450	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	100	A
	1ms	I_{CP}	200	
Forward Current	DC	I_F	100	A
	1ms	I_{FM}	200	
Base Current		I_B	10	A
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)		-	30/30	kg·cm

TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

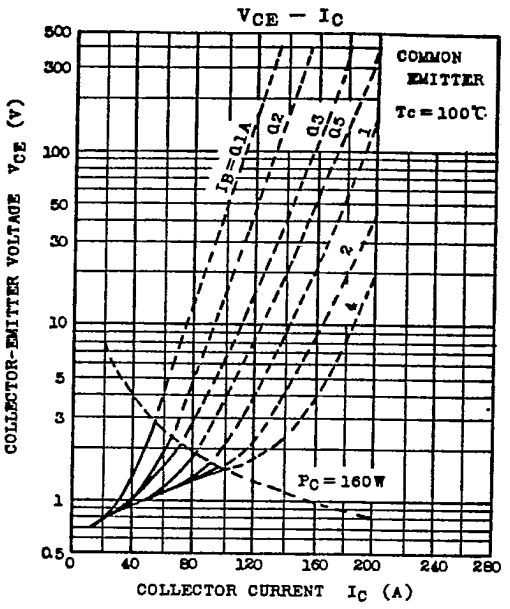
MG100G2YL1

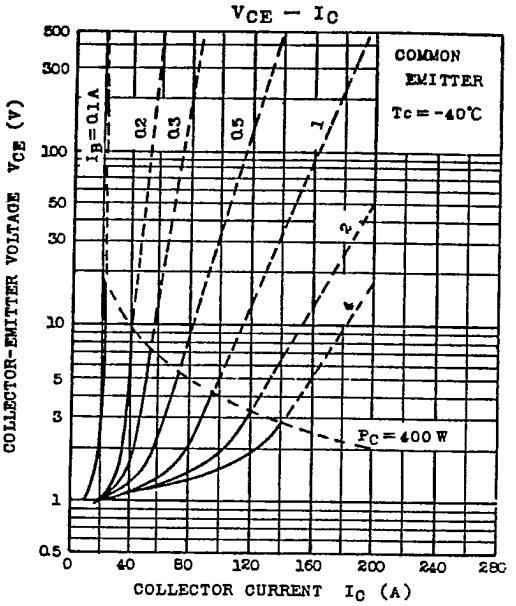
ELECTRICAL CHARACTERISTICS (Ta=25°C)

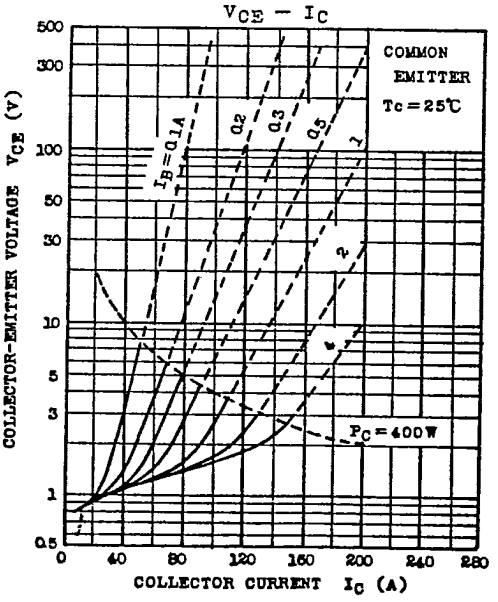
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=600V, I_E=0	-	-	2.0	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	-	-	200	mA
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	450	-	-	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=100A	100	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=100A, I_B=2A	-	1.5	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		-	2.2	2.7	V
Switching Time	Turn-on Time	t_{on}		-	1.2	2.0	μs
	Storage Time	t_{stg}		-	7	12	
	Fall Time	t_f	I_{B1}=-I_{B2}=2A DUTY CYCLE=0.5%	-	1.0	2.0	
Forward Voltage		V_F	I_F=100A, I_B=0	-	1.3	1.7	V
Reverse Recovery Time		t_{rr}	IF=100A, V_{BE}=-3V di/dt=100A/μs	-	-	1.5	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	-	-	0.31	°C/W
			Diode	-	-	1.3	

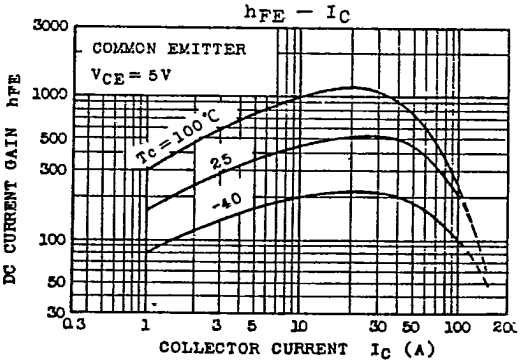
TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

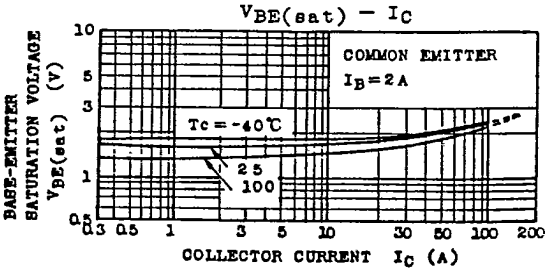
MG100G2YL1











MG100G2YL1-3

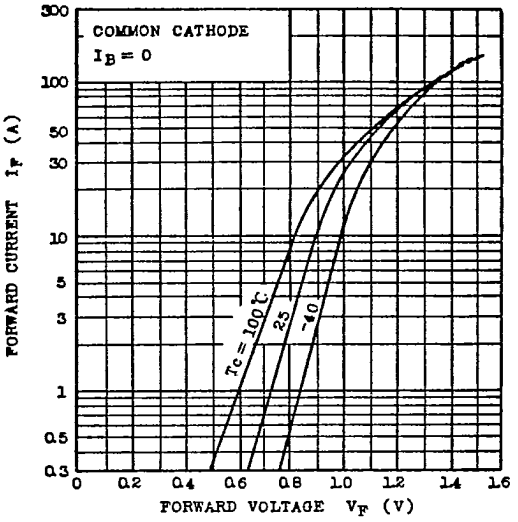
TOSHIBA CORPORATION

GT1A2(2)

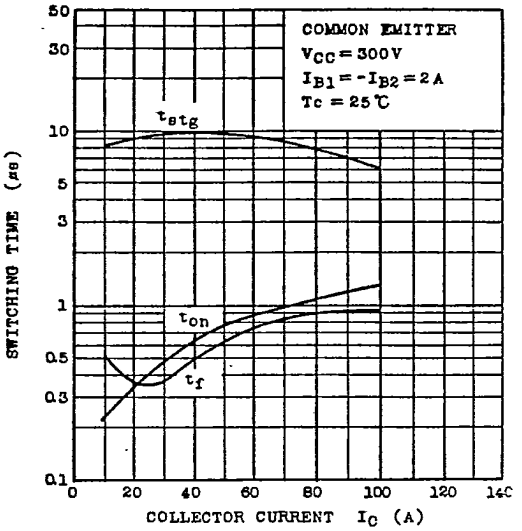
TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

MG100G2YL1

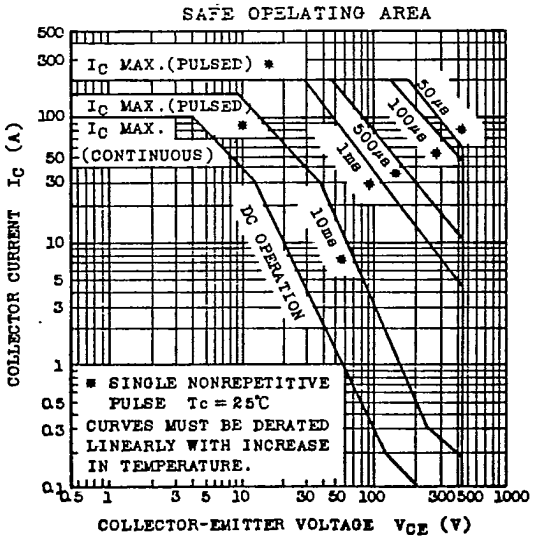
$I_F - V_F$



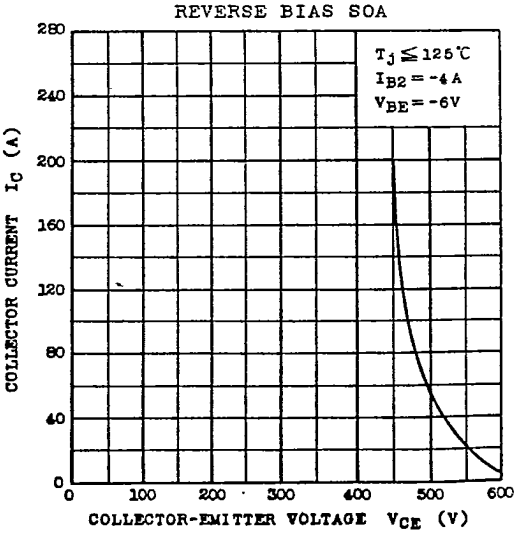
SWITCHING TIME — I_C



SAFE OPERATING AREA



REVERSE BIAS SOA



MG100G2YL1-4

TOSHIBA CORPORATIO

TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

TOSHIBA GTR MODULE

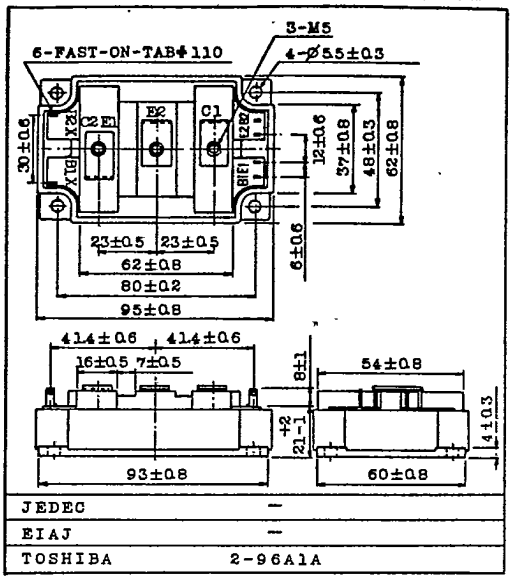
MG100H2YL1

SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

- The Collector is Isolated from Case
- With Built-in Free Wheeling Diode
- High DC Current Gain: h_{FE}=80(Min)(I_C=100A)
- Low Saturation Voltage
  : $V_{CE(sat)}$=2V(Max.)(I_C=100A)
- High Speed : tf=4μs(Max.)(I_C=100A)

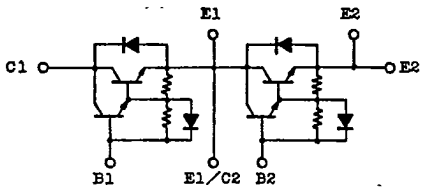
Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-96A1A

Weight : 385g

EQUIVALENT CIRCUIT



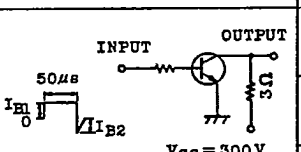
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Sustaining Voltage		$V_{CEX(SUS)}$	600	V
		$V_{CEO(SUS)}$	550	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	100	A
	1ms	I_{CP}	200	
Forward Current	DC	I_F	100	A
	1ms	I_{FM}	200	
Base Current		I_B	15	A
Collector Power Dissipation (Tc=25°C)		P_C	400	W
Junction Temperature		Tj	150	°C
Storage Temperature Range		Tstg	-40~125	°C
Isolation Voltage		V_{Isol}	2500 (AC 1 Minute)	V
Screw Torque (Terminal/Mounting)		-	30/30	kg·cm

TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

MG100H2YL1

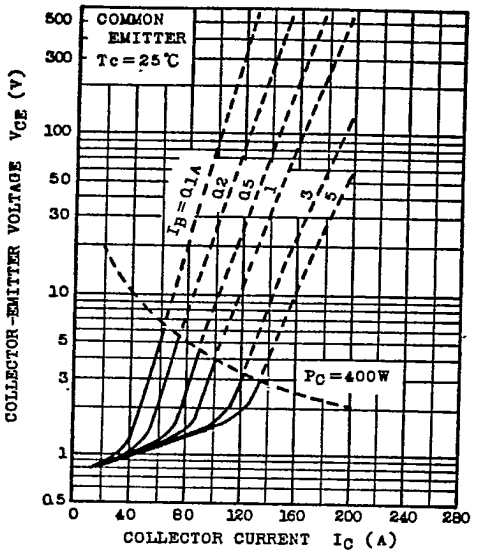
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=600V, I_E=0	-	-	1.0	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	-	-	200	mA
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	550	-	-	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=100A	80	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=100A, I_B=3A	-	-	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		-	-	2.7	V
Switching Time	Turn-on Time	t_{on}	 $I_{B1}=-I_{B2}=3A$ DUTY CYCLE=0.5%	-	-	2.0	μs
	Storage Time	t_{stg}		-	-	12	
	Fall Time	t_f		-	-	4.0	
Forward Voltage		V_F	I_F=100A, I_B=0	-	-	1.7	V
Reverse Recovery Time		t_{rr}	I_F=100A, V_{BE}=-3V di/dt=100A/μs	-	-	1.5	μs
Thermal Resistance		$R_{th(j-c)}$	Transistor	-	-	0.31	°C/W
			Diode	-	-	1.3	

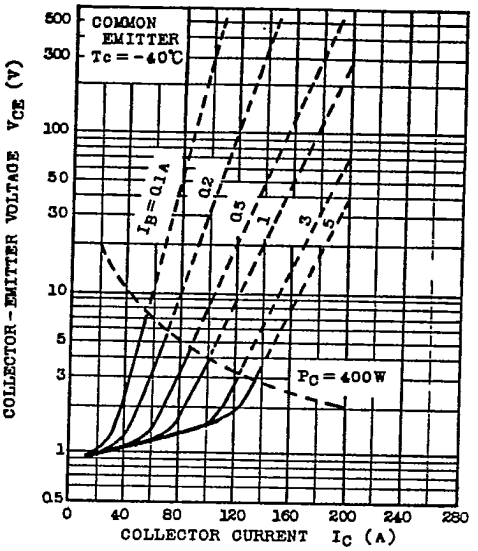
TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

MG100H2YL1

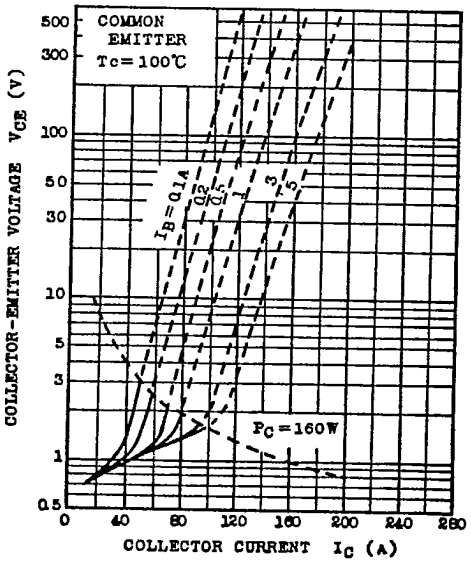
V_{CE} – I_C



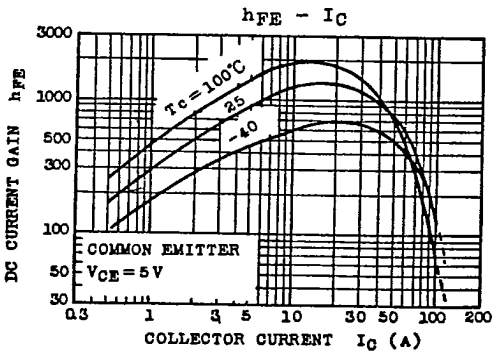
V_{CE} – I_C



V_{CE} – I_C



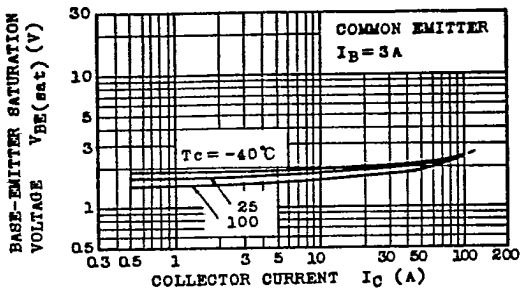
h_{FE} – I_C



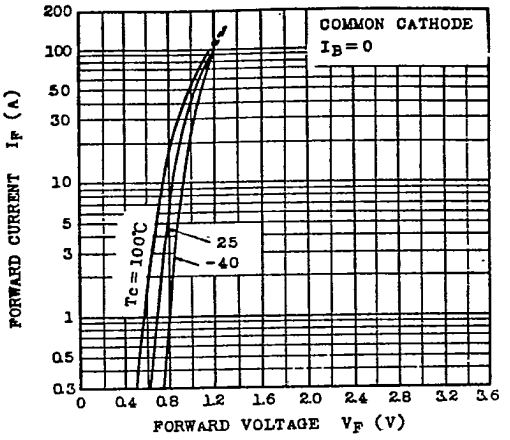
TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

MG100H2YL1

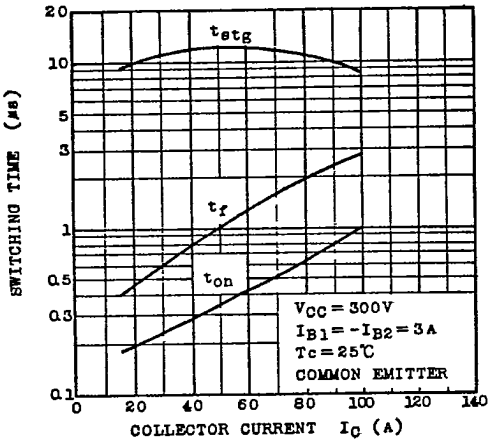
$V_{BE(sat)}$ – I_C



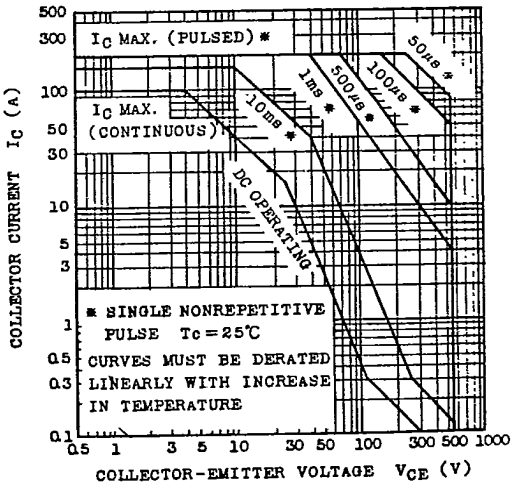
I_F – V_F



SWITCHING TIME – I_C



SAFE OPERATING AREA



REVERSE BIAS SOA