

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16213 DT-33-35



**SEMICONDUCTOR**  
TECHNICAL DATA

TOSHIBA GTR MODULE

MG20G4GL1 MG20G6EL1

SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.  
MOTOR CONTROL APPLICATIONS.

FEATURES :

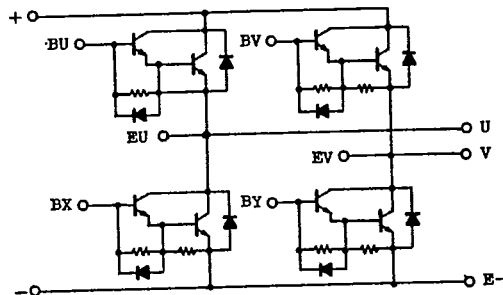
- . The Collector is Isolated from Case
- . 4 or 6 Darlingtons including Free Wheeling Diodes are Built-in to 1 package
- . High DC Current Gain

:  $h_{FE}=100(\text{Min.}) (I_C=20A)$

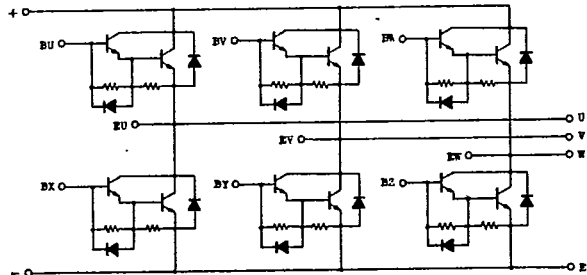
- . Low Saturation Voltage

:  $V_{CE(\text{sat})}=2V(\text{Max.}) (I_C=20A)$

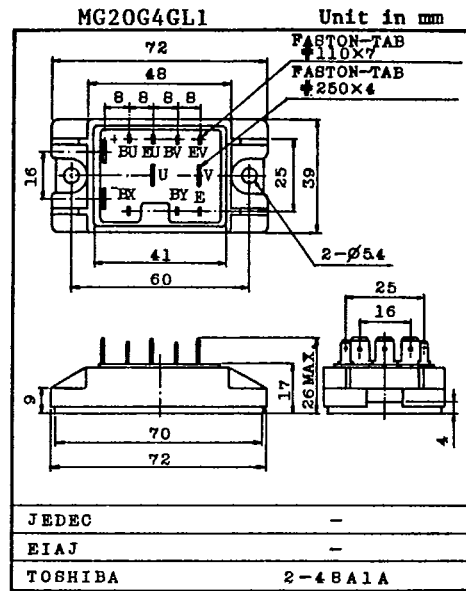
EQUIVALENT CIRCUIT



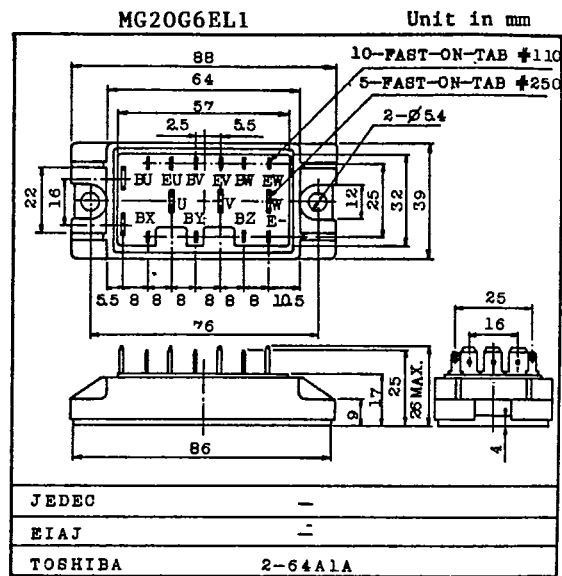
MG20G4GL1



MG20G6EL1



Weight : 140g



Weight : 180g

TOSHIBA CORPORATION

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16214 DT-33-35



# SEMICONDUCTOR

## TECHNICAL DATA

M G 2 0 G 4 G L 1

M G 2 0 G 6 E L 1

## MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		VCBO	600	V
Collector-Emitter Sustaining Voltage		VCEX(SUS)	600	V
Collector-Emitter Sustaining Voltage		VCEO(SUS)	450	V
Emitter-Base Voltage		VEBO	6	V
Collector Current	DC	IC	20	A
	1ms	ICP	40	A
Forward Current	DC	IF	20	A
	1ms	IFM	40	A
Base Current		IB	2	A
Collector Power Dissipation (Tc=25°C)		PC	125	W
Junction Temperature		Tj	150	°C
Storage Temperature Range		Tstg	-40 ~ 125	°C
Isolation Voltage		VIsol	2500 (AC 1 Minute)	V
Screw Torque		-	30	kg·cm

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	VCE=600V, IE=0	-	-	1.0	mA
Emitter Cut-off Current		IEBO	VEB=6V, IC=0	-	-	100	mA
Collector-Emitter Sustaining Voltage		VCEO(SUS)	IC=0.5A, L=40mH	450	-	-	V
DC Current Gain		hFE	VCE=5V, IC=20A	100	-	-	
Collector-Emitter Saturation Voltage		VCE(sat)	IC=20A, IB=0.5A	-	-	2.0	V
Base-Emitter Saturation Voltage		VBE(sat)		-	-	2.5	V
Switching Time	Turn-on Time	ton	<p>50µs IB1 IB2 VCC = 300V DUTY CYCLE = 15%</p>	-	-	1.0	µs
	Storage Time	tstg		-	-	12	
	Fall Time	tf		-	-	2.0	
Forward Voltage		VF	IF=20A, IB=0	-	-	1.6	V
Reverse Recovery Time		trr	IF=20A, VBE=-2V di/dt=60A/µs	-	-	0.7	µs
Thermal Resistance		Rth(j-c)		-	-	1.0	°C/W

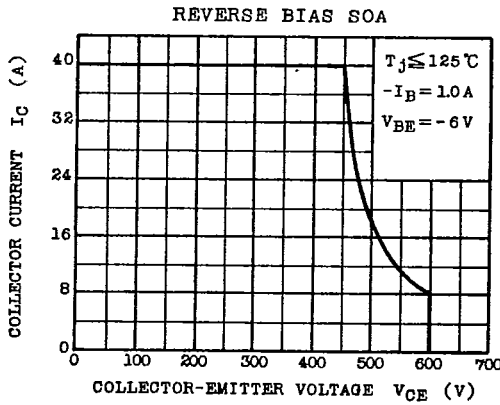
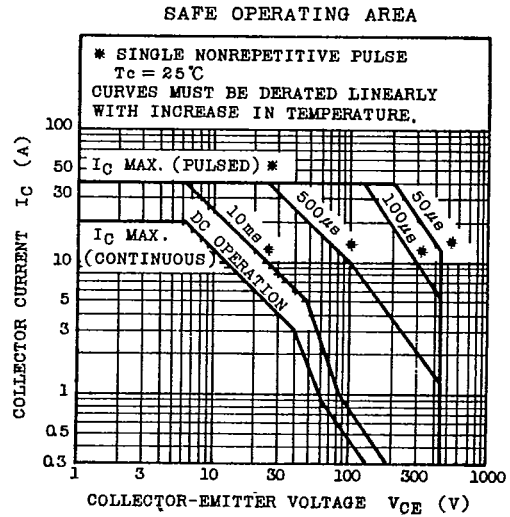
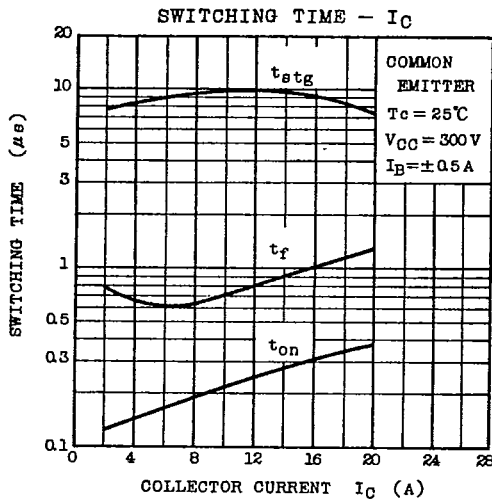
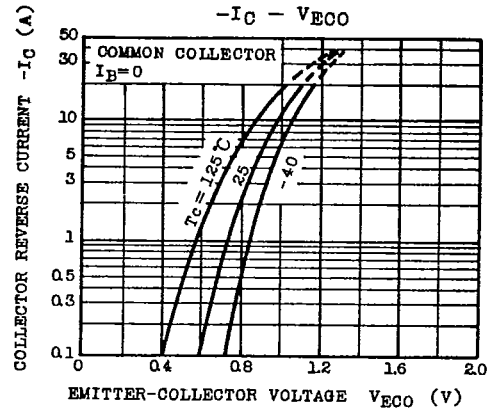
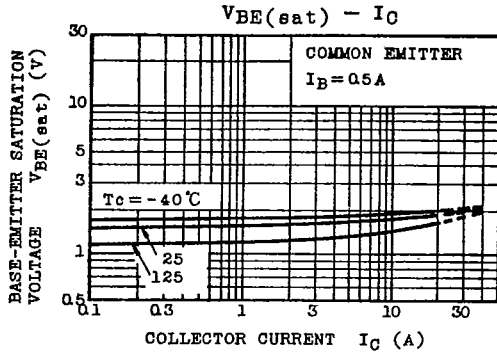
TOSHIBA CORPORATION

3T1A2A



**SEMICONDUCTOR**  
TECHNICAL DATA

MG20G4GL1  
MG20G6EL1



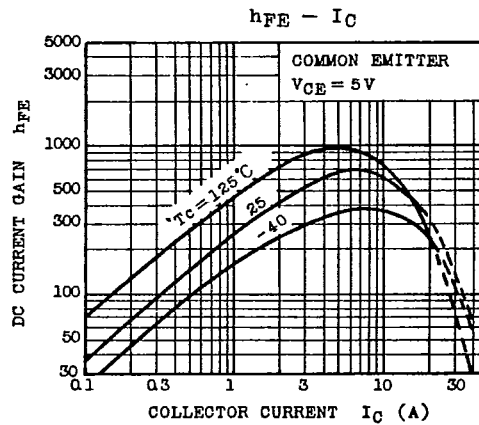
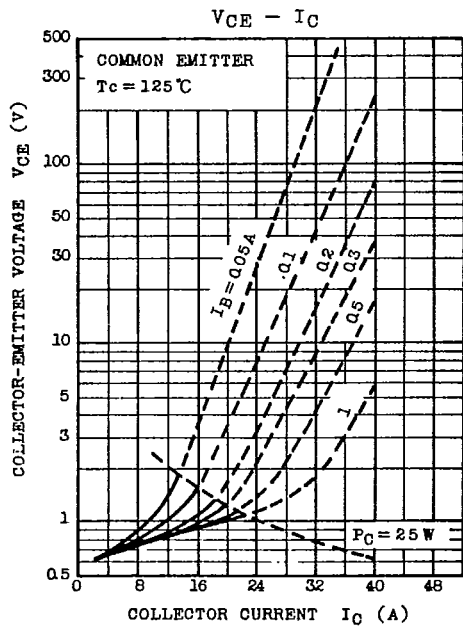
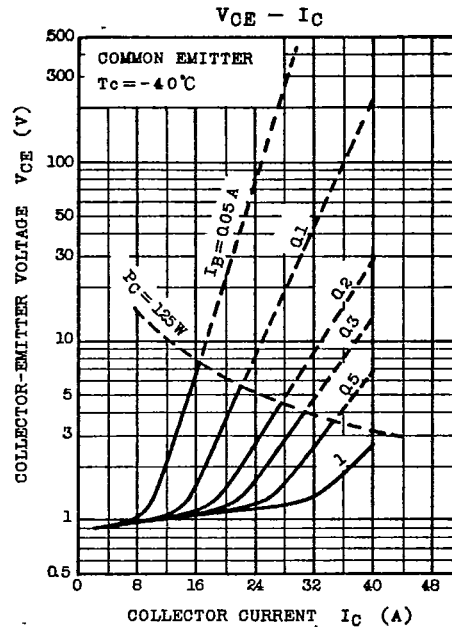
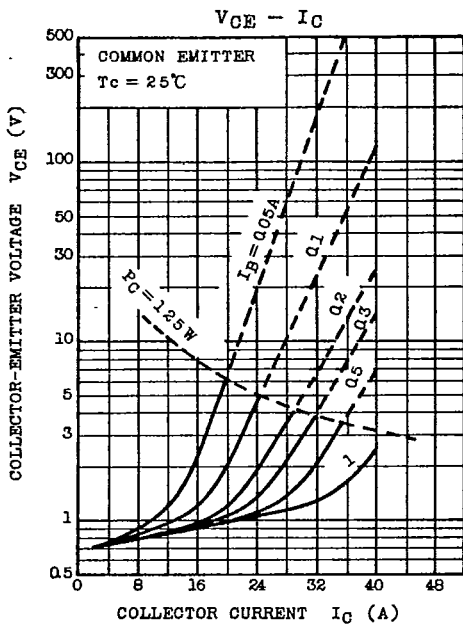
TOSHIBA CORPORATION

GT1A2A



**SEMICONDUCTOR**  
TECHNICAL DATA

M G 2 0 G 4 G L 1  
M G 2 0 G 6 E L 1



TOSHIBA CORPORATION

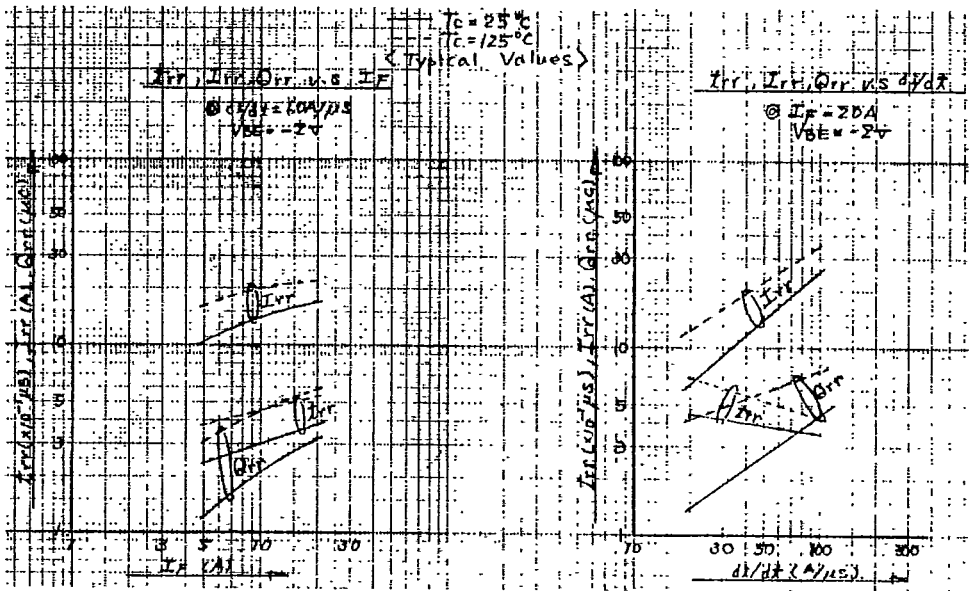
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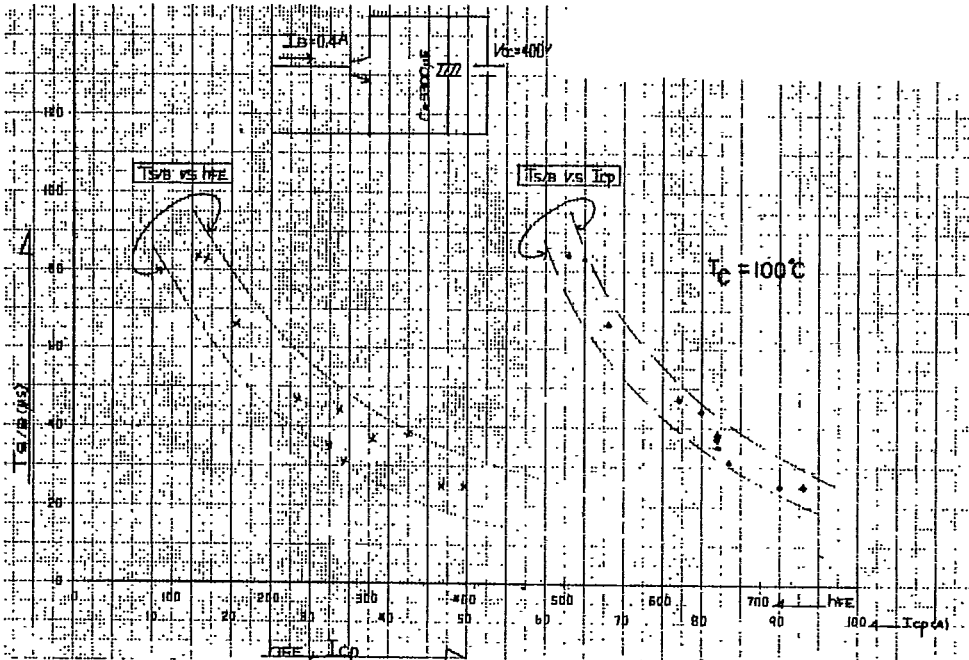
# SEMICONDUCTOR

## TECHNICAL DATA

MG20G4GLI  
MG20G6ELI



### SHORT CIRCUIT



TOSHIBA CORPORATION

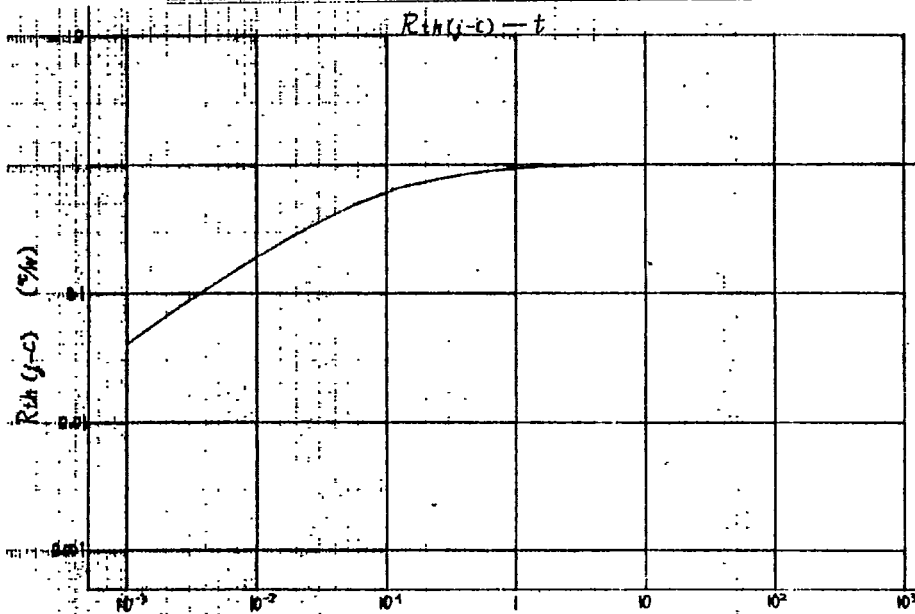
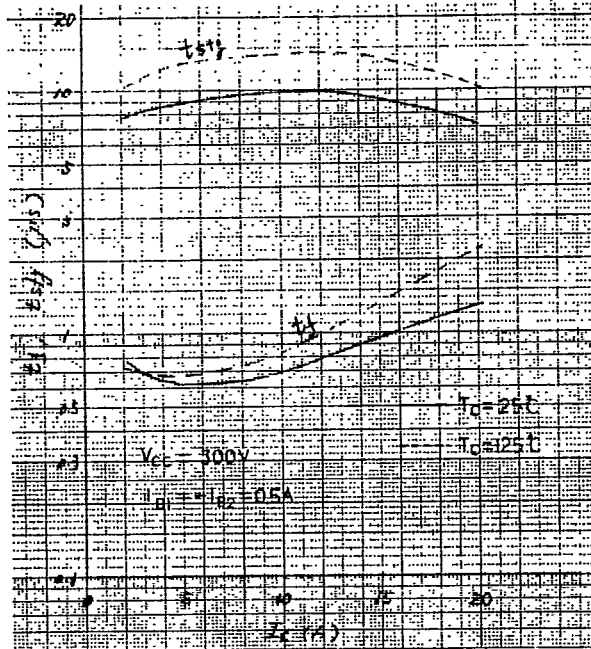


# SEMICONDUCTOR

TECHNICAL DATA

MG20G4GLI

MG20G6ELI



TOSHIBA CORPORATION

GT1A2A