SEMICONDUCTOR
TECHNICAL DATA

TOSHIBA GTR MODULE

MG15G4GL1 MG15G6EL1

SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

FEATURES :

.The Collctor is Isolated from Case

.4 or 6 Darlington Transistors including Free Wheeling Diodes are Built-in to 1 package

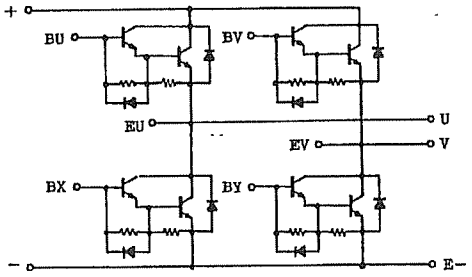
.High DC Current Gain

: h_{FE}=100(Min.) (I_C=15A)

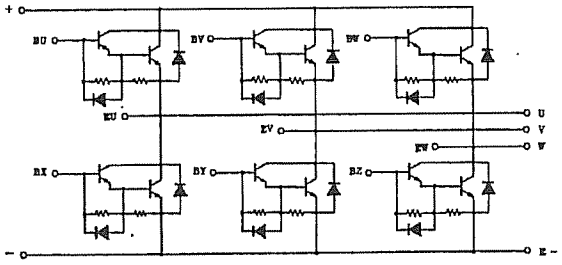
.Low Saturation Voltage

: $V_{CE(sat)}$=2V(Max.) (I_C=15A)

EQUIVALENT CIRCUIT

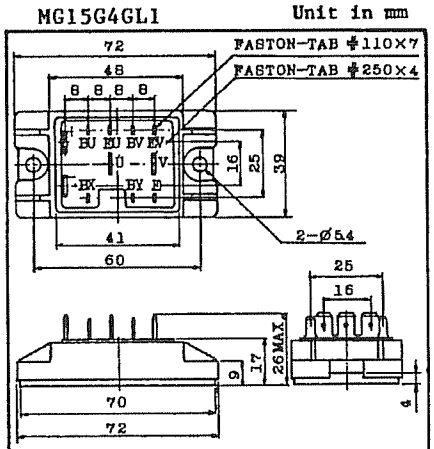


MG15G4GL1



MG15G6EL1

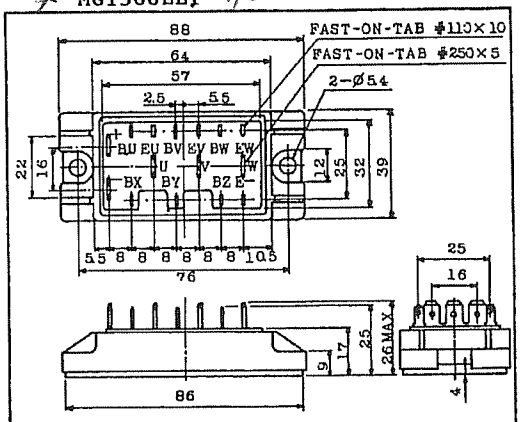
MG15G4GL1 Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-48A1A

Weight : 140g

MG15G6EL1 Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-64A1A

Weight : 180g

SEMICONDUCTOR

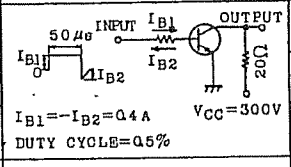
TECHNICAL DATA

MG15G4GL1
MG15G6E11

MAXIMUM RATINGS (Ta=25°C)

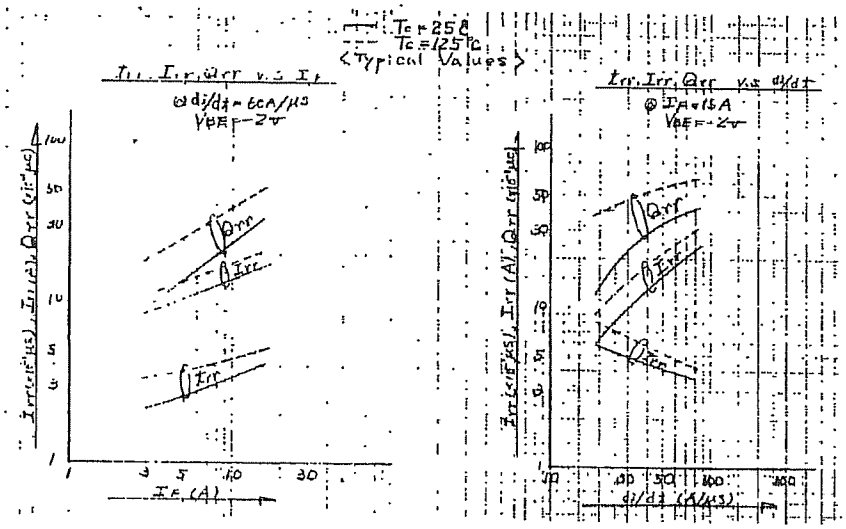
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Voltage		V_{CEO}	600	V
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	450	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	15	A
	1ms	I_C	30	A
	DC	$-I_C$	15	A
Base Current		I_B	1	A
Collector Power Dissipation (Tc=25°C)		P_C	100	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 Torgue			30	kg·cm

ELECTRICAL CHARACTERISTICS (Ta=25°C)

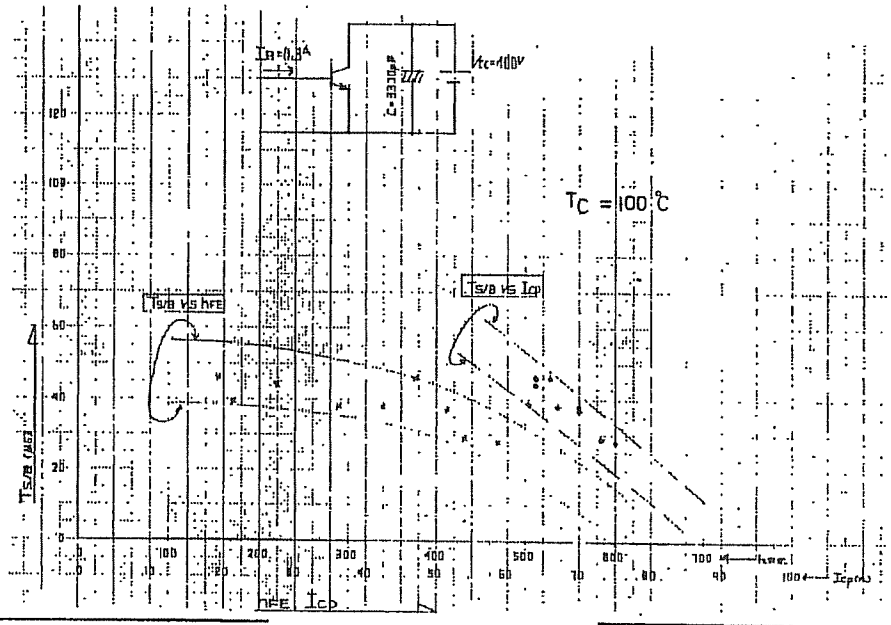
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=600V, I_E=0	−	−	1.0	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	−	−	100	mA
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	450	−	−	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=15A	100	−	−	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=15A, I_B=0.4A	−	−	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		−	−	2.5	V
Emitter-Collector Voltage		V_{ECO}	I_E=15A, I_B=0	−	−	1.6	V
Reverse Recovery Time		t_{rr}	$-I_C$=15A, V_{EB}=2V, V_{CE}=300V	−	−	0.7	μs
Collector Output Capacitance		Cob	V_{CB}=50V, I_E=0, f=1MHz	−	400	−	pF
Switching Time	Turn-on Time	ton		−	−	1.0	μs
	Storage Time	tstg		−	−	12	
	Fall Time	tf	I_{B1}=−I_{B2}=0.4A DUTY CYCLE=0.5%	−	−	2.0	
Thermal Resistance (Junction to Case)		$R_{th(j-c)}$		−	−	1.25	°C/W

SEMICONDUCTOR
TECHNICAL DATA

MG15G4GL1
MG15G6EL1

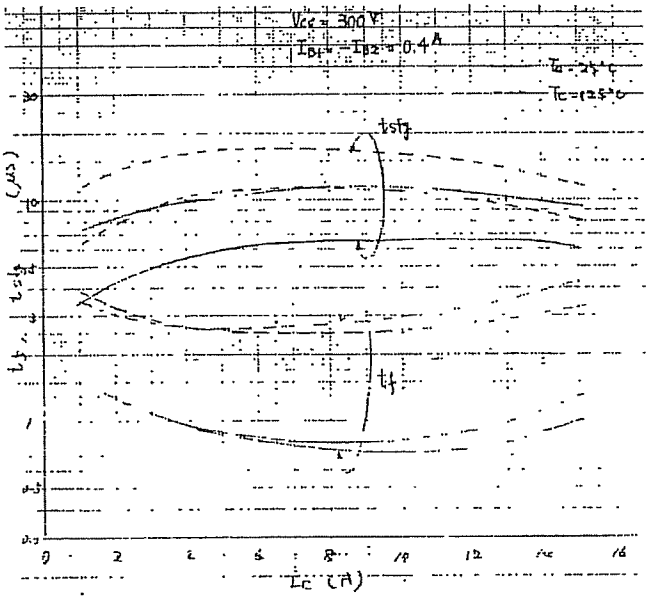


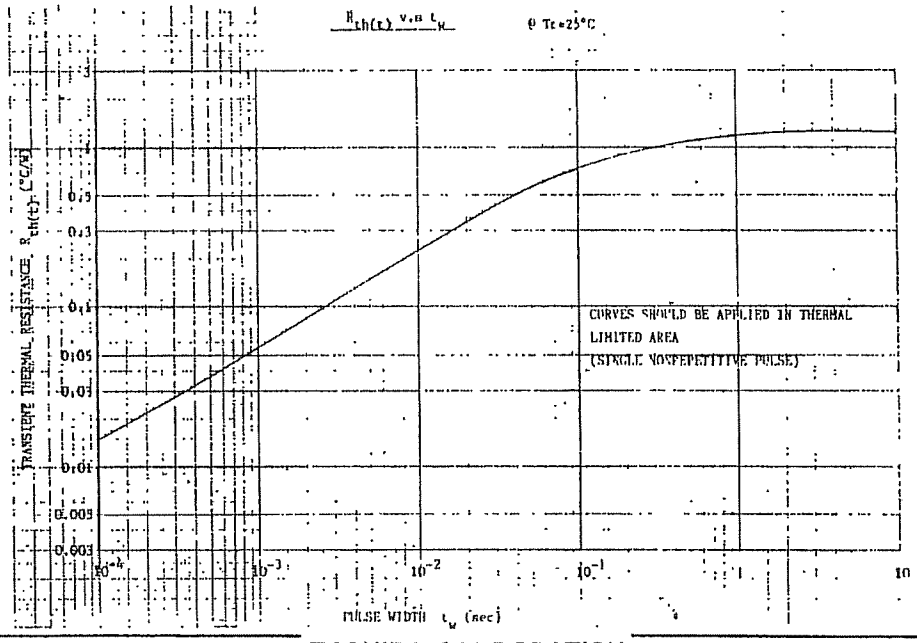
SHORT CIRCUIT



SEMICONDUCTOR
TECHNICAL DATA

MG15G4GL1
MG15G6EL1





TOSHIBA CORPORATION

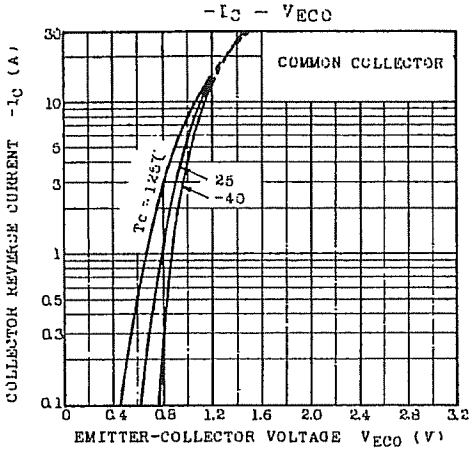
GT1A2A

SEMICONDUCTOR

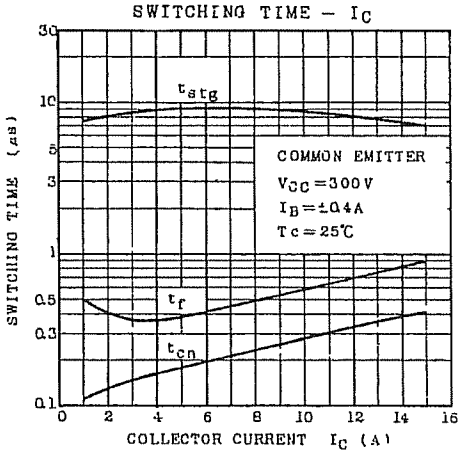
TECHNICAL DATA

M G 1 5 G 4 G L 1
M G 1 5 G 6 E L 1

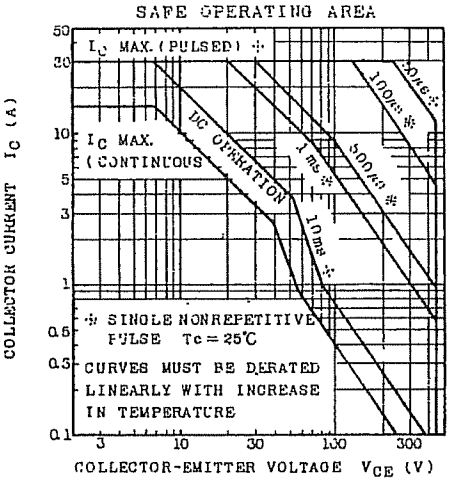
$-I_C - V_{ECO}$



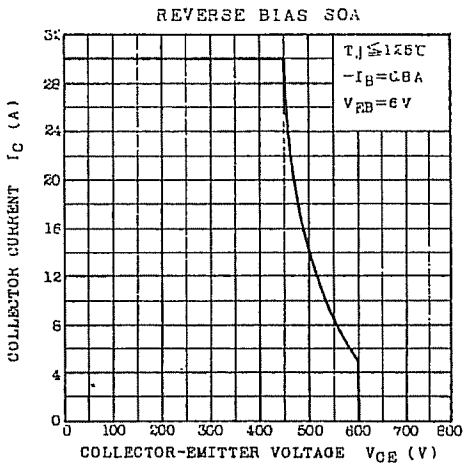
SWITCHING TIME – I_C



SAFE OPERATING AREA



REVERSE BIAS SOA

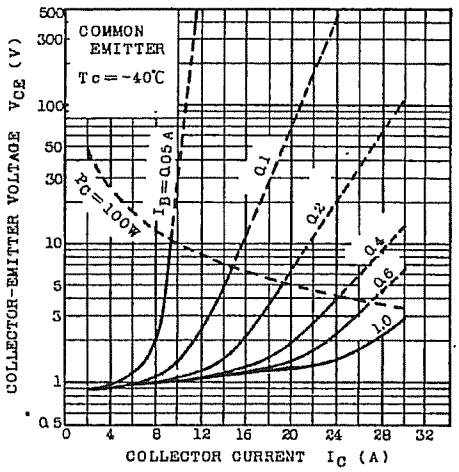


SEMICONDUCTOR

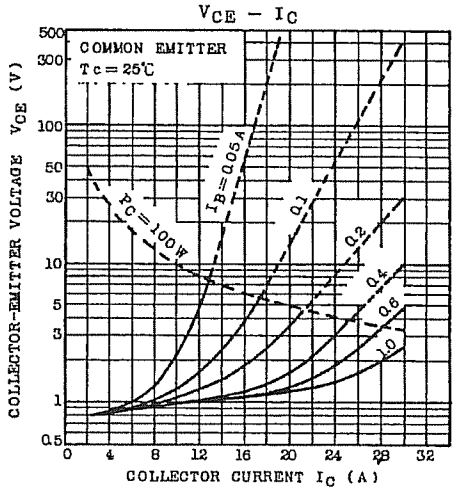
TECHNICAL DATA

MG15G4GL1
MG15G6BL1

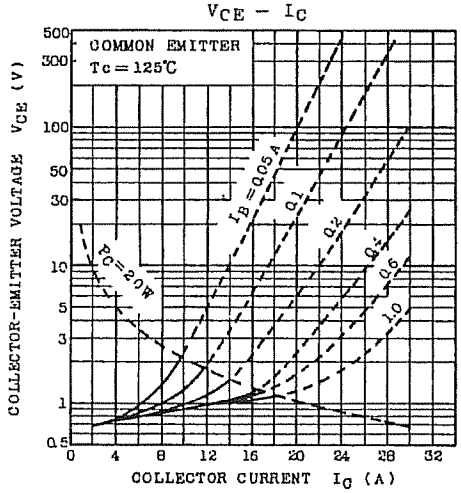
V_{CE} – I_C



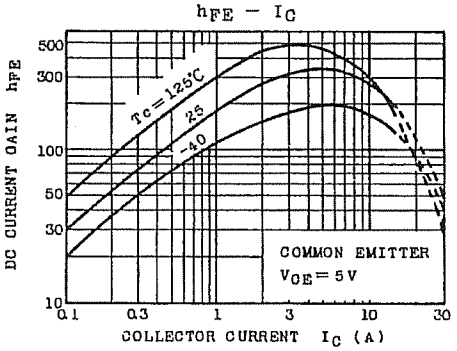
V_{CE} – I_C



V_{CE} – I_C



h_{FE} – I_C



$V_{BE(sat)}$ – I_C