

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16292 DT-33-35



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA GTR MODULE

MG400H1FK1

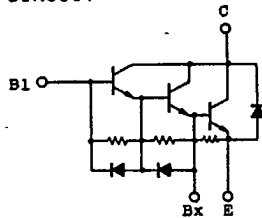
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

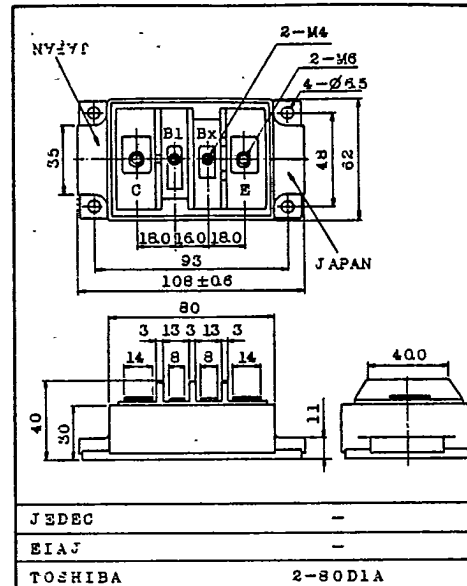
FEATURES:

- The Collector is Isolated from Case.
- With Built-in Free Wheeling Diode
- High DC Current Gain : $h_{FE}=200(\text{Min.})$ ($I_C=400\text{A}$)
- Low Saturation Voltage
: $V_{CE(\text{sat})}=2.5\text{V}(\text{Max.})$ ($I_C=400\text{A}$)

EQUIVALENT CIRCUIT



Unit in mm



JEDEC

EIAJ

TOSHIBA

2-80D1A

Weight : 500g

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Sustaining Voltage		$V_{CEX(\text{SUS})}$	600	V
Collector-Emitter Sustaining Voltage		$V_{CEO(\text{SUS})}$	550	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	400	A
	1ms	I_{CP}	800	A
Forward Current	DC	I_F	400	A
	1ms	I_{FM}	800	A
Base Current		I_B	12	A
Collector Power Dissipation ($T_c=25^\circ\text{C}$)		P_C	1600	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40 ~ 125	$^\circ\text{C}$
Isolation Voltage		V_{isol}	2500 (AC 1 Minute)	V
Screw Torque	Terminal (M4/M6)		20/30	kg·cm
	Mounting		30	

1984-4-5

TOSHIBA CORPORATION

EGA-MG400H1FK1-1

JT1A2

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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CE} =600V, I _E =0	-	-	4	mA
Emitter Cut-off Current		IEBO	V _{EB} =6V, I _C =0	-	-	800	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 =400A	200	-	-	
Collector-Emitter Saturation Voltage		V _{CE(sat)}	I _C =400A, I _B =4A	-	-	2.5	V
Base-Emitter Saturation Voltage		V _{BE(sat)}		-	-	3.5	V
Switching Time	Turn-on Time	t _{on}	<p>INPUT OUTPUT 50µs I_{B1} I_C I_{B2} V_{CC}=300V</p>	-	-	2.0	µs
	Storage Time	t _{stg}		-	-	12	
	Fall Time	t _f		I _{B1} =-I _{B2} =4A DUTY CYCLE=0.5%	-	-	
Forward Voltage		V _F	I _F =400A, I _B =0	-	-	1.8	V
Reverse Recovery Time		t _{rr}	I _F =400A, V _{BE} =-3V di/dt=200A/µs	-	-	1.0	µs
Thermal Resistance		R _{th(j-c)}	Transistor	-	-	0.078	°C/W
			Diode	-	-	0.325	

TOSHIBA CORPORATION

EGA-MG400H1FK1-2

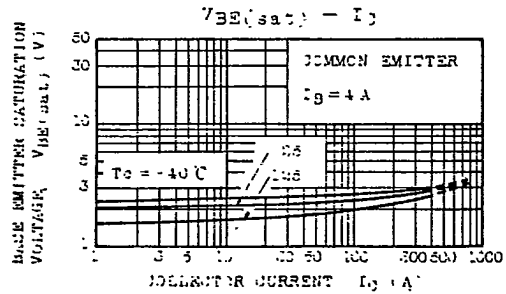
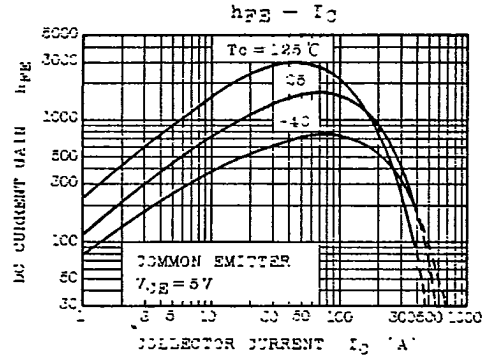
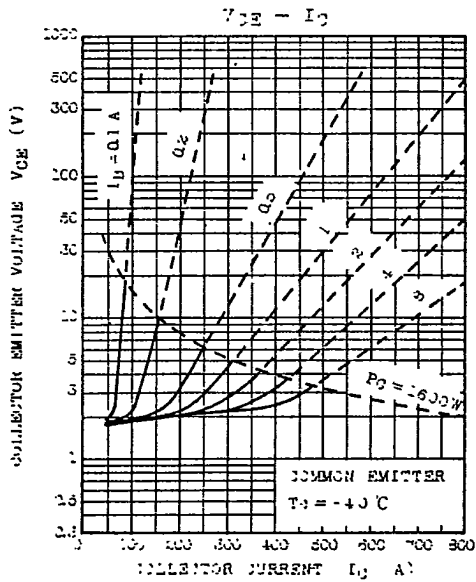
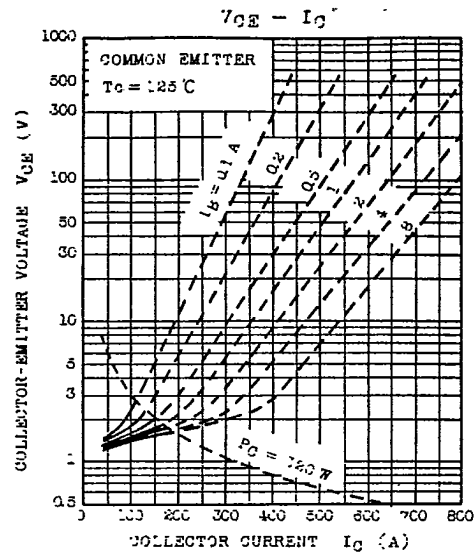
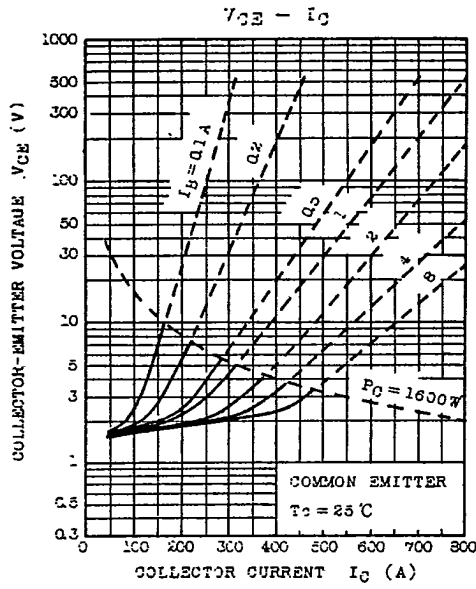
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SEMICONDUCTOR

TECHNICAL DATA

MG400H1FK1



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TOSHIBA CORPORATION

EGA-MG400H1FK1-3

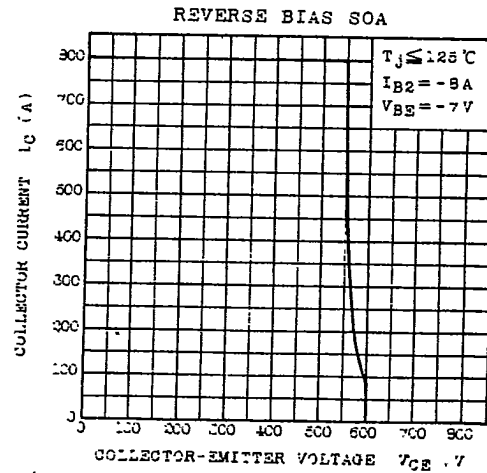
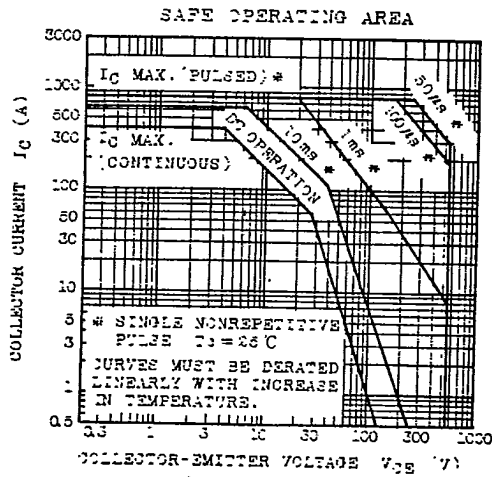
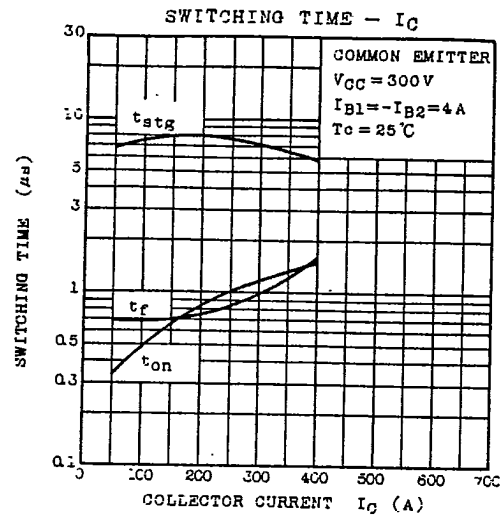
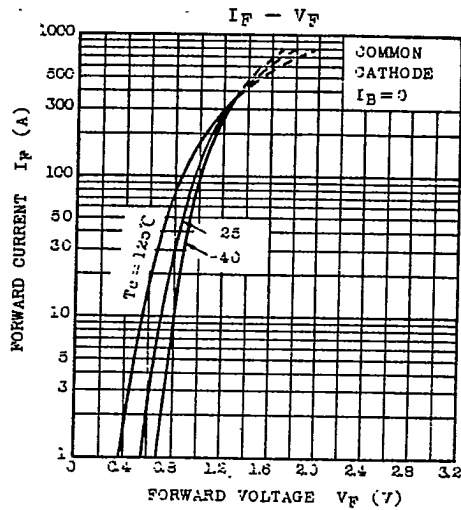
3T1A2



SEMICONDUCTOR

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MG400H1FK1



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TOSHIBA CORPORATION

ECA-MG400H1FK1-1

3T1A2