

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16110 DT-33-35

TOSHIBA SEMICONDUCTOR TECHNICAL DATA

TOSHIBA GTR MODULE
 MG300Q1UK1
 SILICON NPN TRIPLE DIFFUSED TYPE

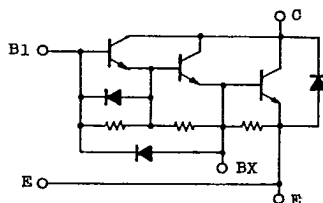
TENTATIVE

HIGH POWER SWITCHING APPLICATIONS.
 MOTOR CONTROL APPLICATIONS.

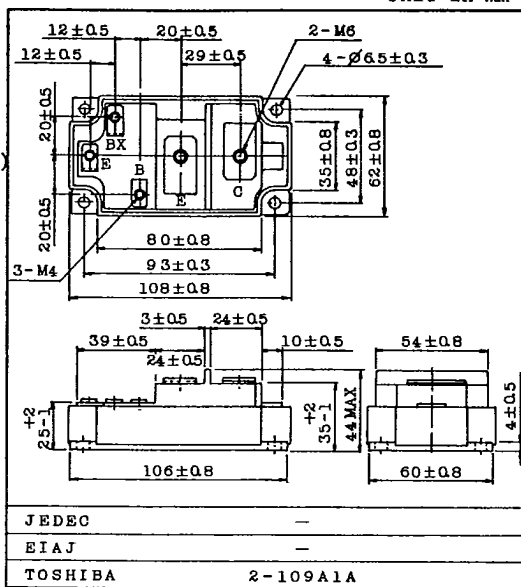
FEATURES:

- The Collector is Isolated from Case
- With Built-in Free Wheeling Diode
- High DC Current Gain : $h_{FE}=100(\text{Min.})(I_C=300A)$
- Low Saturation Voltage
 : $V_{CE(sat)}=2.5V(\text{Max.})(I_C=300A)$
- High Speed : $t_f=5\mu s(\text{Max.})(I_C=300A)$

EQUIVALENT CIRCUIT



Unit in mm



Weight :

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	1200	V
Collector-Emitter Sustaining Voltage		$V_{CEX(SUS)}$	1200	V
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	900	V
Emitter-Base Voltage		V_{EB0}	7	V
Collector Current	DC	I_C	300	A
	lms	I_{CP}	600	
Forward Current	DC	I_F	300	A
	lms	I_{FM}	600	
Base Current		I_B	30	A
Collector Power Dissipation (Tc=25°C)		P_C	1600	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 M4/M6/Mounting)		-	20/30/30	kg·cm

MG300Q1UK1

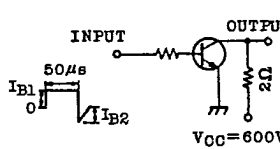
TOSHIBA CORPORATION

TOSHIBA SEMICONDUCTOR

TECHNICAL DATA

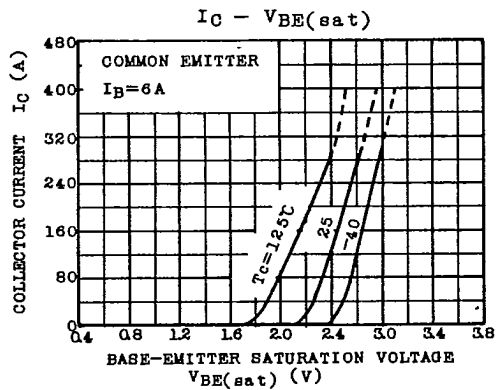
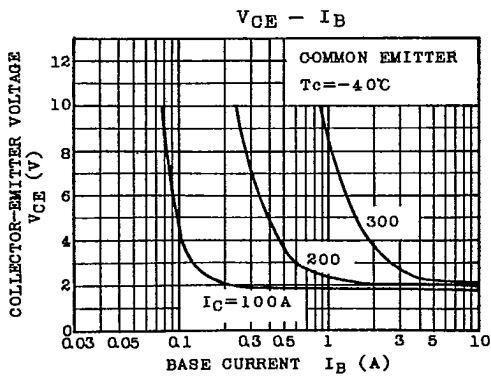
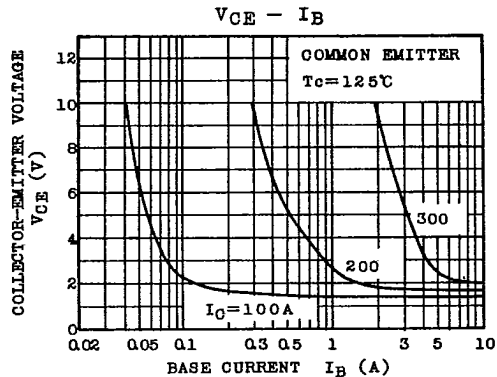
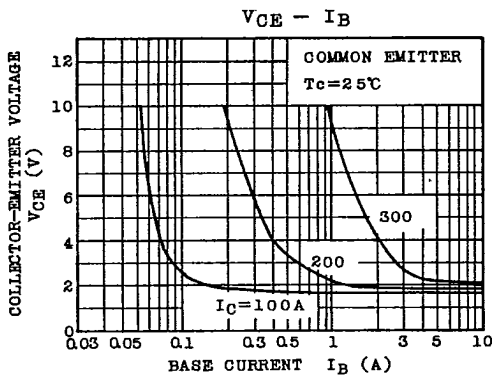
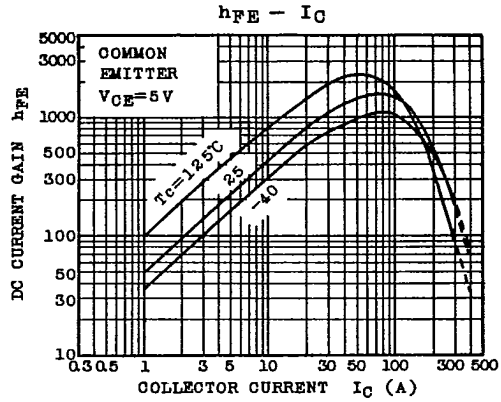
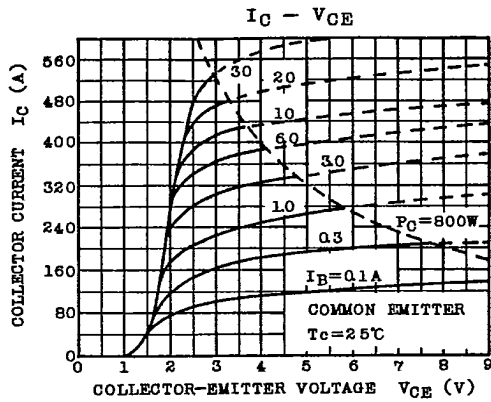
MG300Q1UK1

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} =1200V, I _E =0	-	-	8	mA
Emitter Cut-off Current		IEBO	VEB=7V, I _C =0	-	-	800	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 =300A	100	-	-	
Collector-Emitter Saturation Voltage		V _{CE(sat)}	I _C =300A, I _B =6A	-	-	2.5	V
Base-Emitter Saturation Voltage		V _{BE(sat)}		-	-	3.5	V
Switching Time	Turn-on Time	t _{on}	 <p>INPUT</p> <p>OUTPUT</p> <p>50µs</p> <p>IB1</p> <p>IB2</p> <p>V_{CC}=600V</p> <p>DUTY CYCLE=0.5%</p>	-	-	4	µs
	Storage Time	t _{stg}		-	-	12	
	Fall Time	t _f		I _{B1} =6A, I _{B2} =-18A	-	-	
Forward Voltage		V _F	I _F =300A, I _B =0	-	-	1.8	V
Reverse Recovery Time		t _{rr}	I _F =300A, V _{BE} =-3V di/dt=300A/µs	-	-	1.0	µs
Thermal Resistance		R _{th(j-c)}	Transistor	-	-	0.078	°C/W
			Diode	-	-	0.325	

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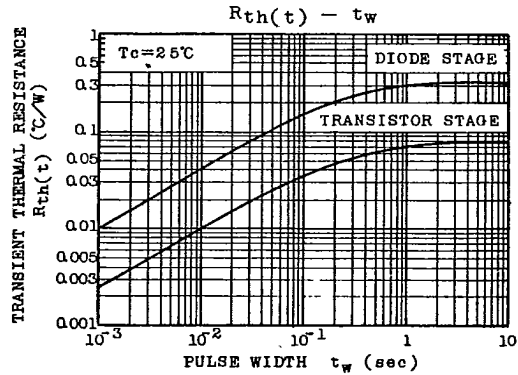
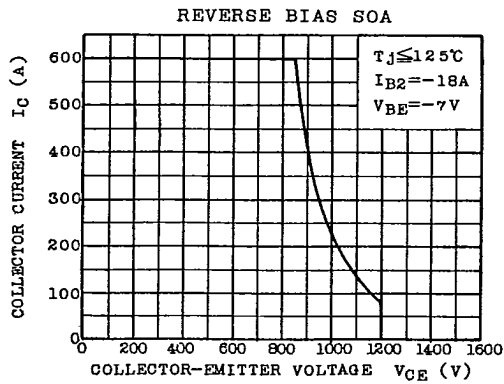
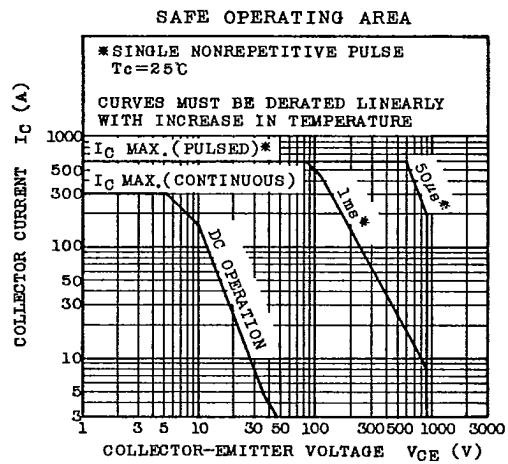
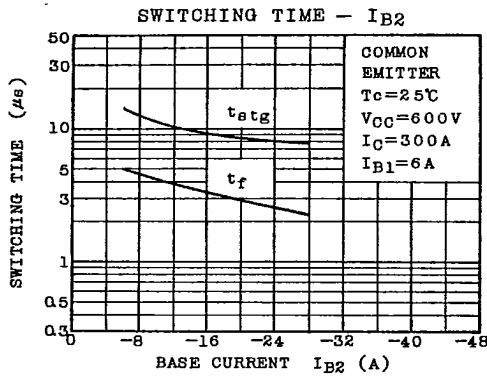
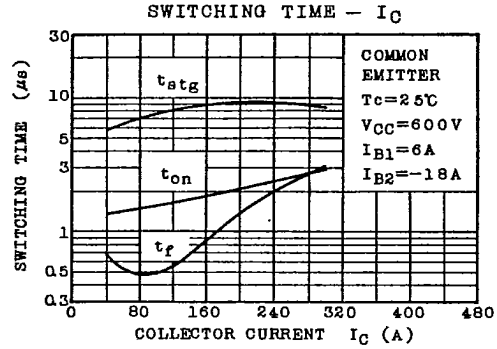
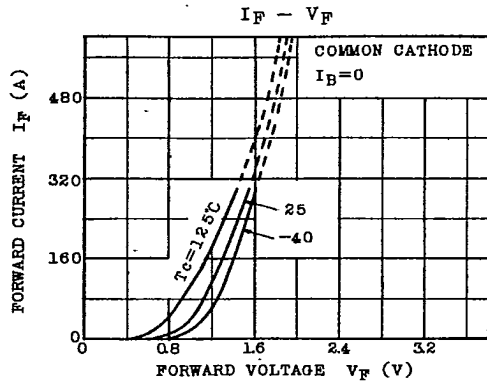
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TOSHIBA CORPORATION

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