

TOSHIBA SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA GTR MODULE

MG300M1UK1

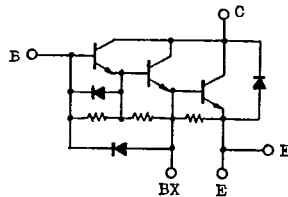
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

FEATURES:

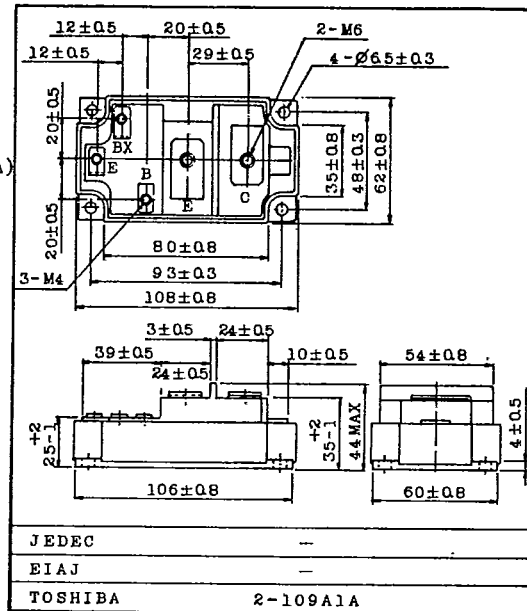
- The Collector is Isolated from Case.
- With Built-in Free Wheeling Diode
- High DC Current Gain: $h_{FE}=100(\text{Min.})(I_C=300A)$
- Low Saturation Voltage
: $V_{CE(\text{sat})}=2.5V(\text{Max.})(I_C=300A)$
- Excellent Collector Balance by Direct Parallel Connection of Each All Terminals.

EQUIVALENT CIRCUIT

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	1000	V
Collector-Emitter Sustaining Voltage		$V_{CEX(\text{SUS})}$	1000	V
		$V_{CEO(\text{SUS})}$	880	
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	300	A
	1ms	I_{CP}	600	
Forward Current	DC	I_F	300	A
	1ms	I_{FM}	600	
Base Current		I_B	30	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/Mounting)		-	20/30/30	kg·cm

Unit in mm



JEDEC

EIAJ

TOSHIBA

2-109A1A

Weight :

9097250 TOSHIBA (DISCRETE/OPTO)

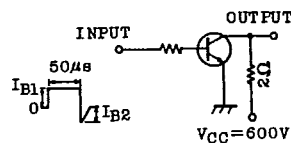
90D 16107 DT-33-35

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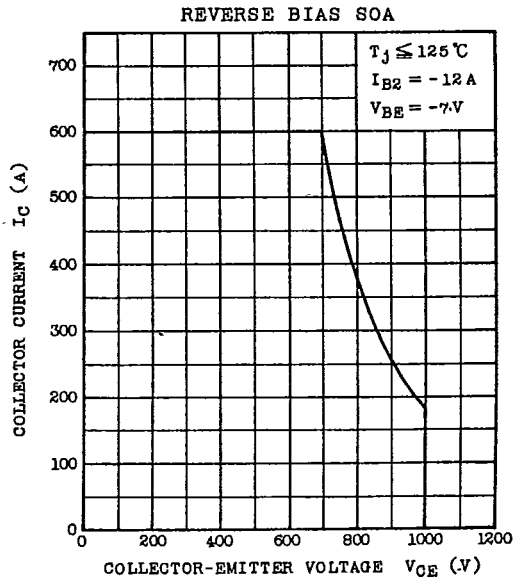
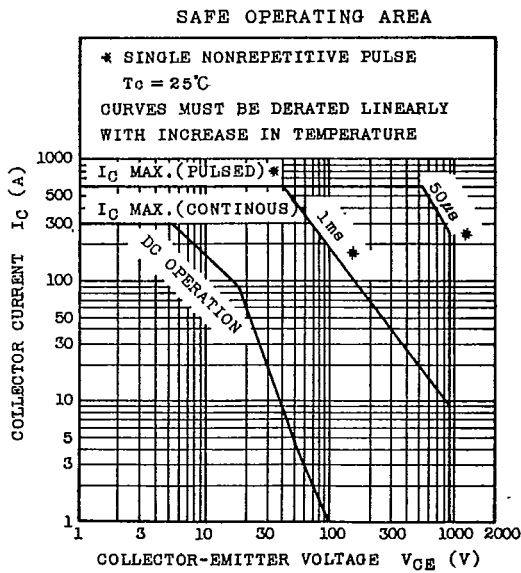
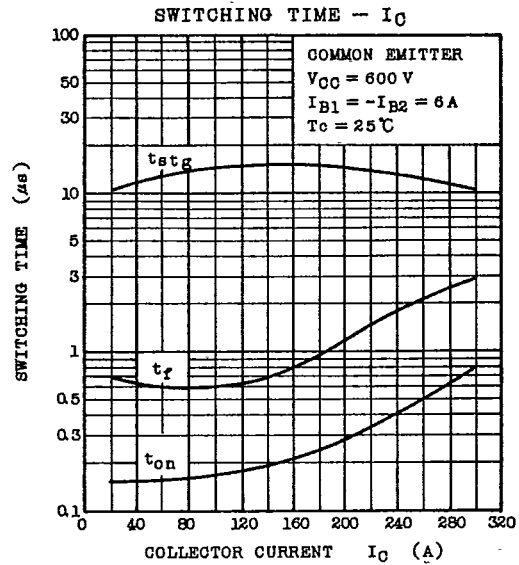
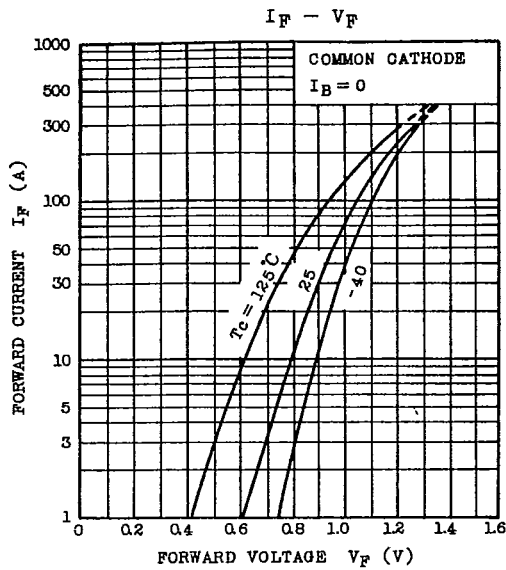
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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} =1000V, I _E =0	-	-	14	mA
Emitter Cut-off Current		IEBO	V _{EB} =7V, I _C =0	-	-	800	mA
Collector-Emitter Sustaining Voltage		V _{CEO} (SUS)	I _C =1A, L=40mH	880	-	-	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}	 INPUT 50µs I_{B1} 0 I_{B2} OUTPUT V_{CC}=600V	-	-	2.0	µs
	Storage Time	t _{stg}		-	-	15	
	Fall Time	t _f		-	-	5	
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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