

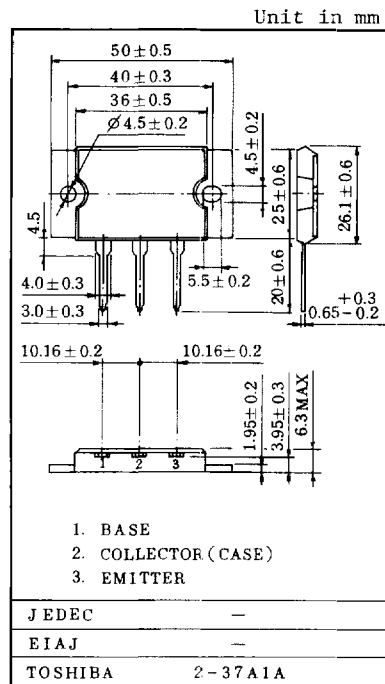
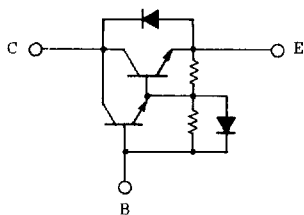
MG30T1A1

GTR MODULE
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
INDUCTION HEATING APPLICATIONS.

- . With Built-in Free Wheeling Diode
- . High DC Current Gain : $h_{FE}=50(\text{Min.})(I_C=30A)$
- . Low Saturation Voltage : $V_{CE(\text{sat})}=2V(\text{Max.})(I_C=30A)$
- . High Speed : $t_f=0.8\mu s(\text{Max.})(I_C=30A)$

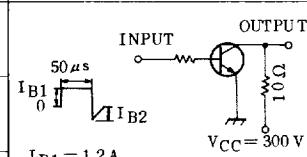
EQUIVALENT CIRCUIT

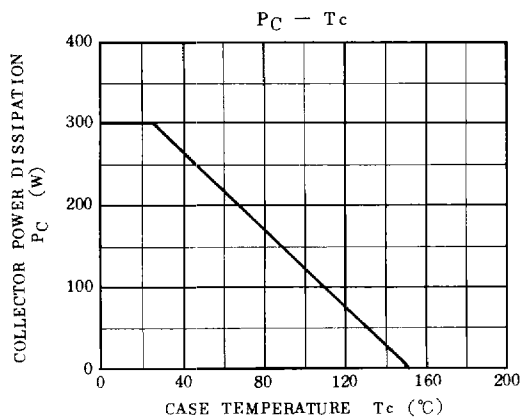


MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	1500	V
Collector-Emitter Sustaining Voltage		$V_{CEO(\text{SUS})}$	700	V
Emitter-Base Voltage		V_{EBO}	10	V
Collector Current	DC	I_C	30	A
	1ms	I_{CP}	60	
Forward Current	DC	I_F	30	A
	1ms	I_{FM}	60	
Base Current		I_B	6	A
Collector Power Dissipation ($T_c=25^\circ\text{C}$)		P_C	300	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$
Screw Torque		—	20	kg·cm

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} =1300V, I _E =0	-	-	1	mA
Emitter Cut-off Current		IEBO	V _{EB} =10V, I _C =0	-	-	300	mA
Collector-Emitter Sustaining Voltage		V _{CEO(SUS)}	I _C =0.5A, L=40mH	700	-	-	V
DC Current Gain		h _{FE}	V _{CE} =5V, I _C =30A	50	-	-	-
Collector-Emitter Saturation Voltage		V _{CE(sat)}	I _C =30A, I _B =1.2A	-	1.0	2.0	V
Base-Emitter Saturation Voltage		V _{BE(sat)}		-	1.8	2.5	V
Switching Time	Turn-on Time	t _{on}	 <p>INPUT OUTPUT 50μs I_{B1} I_{B2} 10Ω V_{CC}=300V</p>	-	0.8	1.0	μs
	Storage Time	t _{stg}		-	3.0	5.0	
	Fall Time	t _f		I _{B1} =1.2A I _{B2} =-10A DUTY CYCLE = 0.5%	-	0.5	
Forward Voltage		V _F	I _F =30A, I _B =0	-	1.3	1.7	V
Reverse Recovery Time		t _{rr}	I _F =30A, V _{BE} =-5V di/dt=20A/μs	-	1.5	3.0	μs
Thermal Resistance		R _{th(j-c)}	Transistor	-	-	0.42	°C/W
			Diode	-	-	0.75	



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