

9097250 TOSHIBA (DISCRETE/OPTO)

90D 16199 DT-33-35



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA G-TR MODULE

MG15G1A13

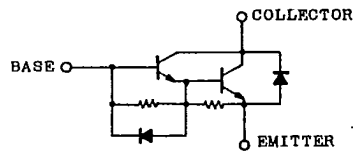
SILICON NPN TRIPLE DIFFUSED TYPE

HIGH POWER SWITCHING APPLICATIONS.
MOTOR CONTROL APPLICATIONS.

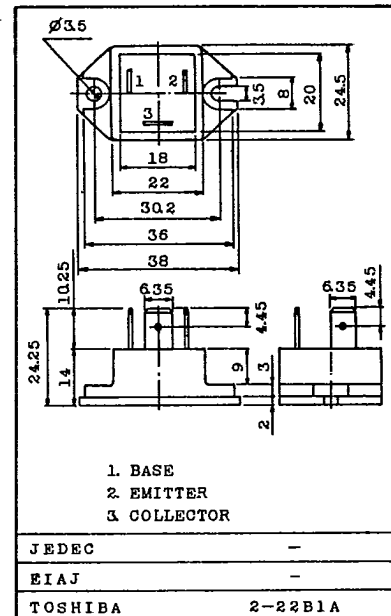
FEATURES:

- . The Collector is Isolated from Case.
- . With Built-in Free Wheeling Diode.
- . High DC Current Gain : $h_{FE}=100(\text{Min.})$ ($I_C=15A$)
- . Low Saturation Voltage : $V_{CE(\text{sat})}=2V(\text{Max.})$ ($I_C=15A$)
- . High Speed : $t_f=2\mu s(\text{Max.})$ ($I_C=15A$)

EQUIVALENT CIRCUIT



Unit in mm



Weight : 28g

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	600	V
Collector-Emitter Voltage	V_{CE0}	600	V
Collector-Emitter Sustaining Voltage	$V_{CE0(\text{SUS})}$	450	V
Emitter-Base Voltage	V_{EB0}	6	V
Collector Current	DC	I_C	15
	1ms	I_C	30
	DC	$-I_C$	15
Base Current	I_B	1	A
Collector Power Dissipation ($T_c=25^\circ\text{C}$)	P_C	120	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		10	kg·cm

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TOSHIBA CORPORATION

EGA-MG15G1A13-1

GT1A2

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9097250 TOSHIBA (DISCRETE/OPTO)

90D 16200 DT-33-35



SEMICONDUCTOR

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TECHNICAL DATA

MG15G1AL3

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	ICBO	V _{CB} =600V, I _E =0	-	-	1.0	mA	
Emitter Cut-off Current	IEBO	VEB=6V, IC=0	-	-	100	mA	
Collector-Emitter Sustaining Voltage	V _{CEO(SUS)}	IC=0.5A, L=40mH	450	-	-	V	
DC Current Gain	h _{FE}	V _{CE} =5V, IC=15A	100	-	-		
Collector-Emitter Saturation Voltage	V _{CE(sat)}	IC=15A, IB=0.4A	-	-	2.0	V	
Base-Emitter Saturation Voltage	V _{BE(sat)}		-	-	2.5	V	
Emitter-Collector Voltage	VECO	IE=15A, IB=0	-	-	1.5	V	
Reverse Recovery Time	t _{rr}	-IC=15A, VEB=3V VCE=300V	-	-	2.0	μs	
Collector Output Capacitance	C _{ob}	V _{CB} =50V, I _E =0, f=1MHz	-	190	-	pF	
Switching Time	Turn-on Time	t _{on}			-	1.0	μs
	Storage Time	t _{stg}			-	12	
	Fall Time	t _f	IB1=-IB2=0.4A DUTY CYCLE=0.5%		-	2.0	
Thermal Resistance (Junction to Case)	R _{th(j-c)}	Transistor	-	-	1.0	°C/W	
		Diode	-	-	3.5		

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TOSHIBA CORPORATION

EGA-MG15G1AL3-2

GT1A2

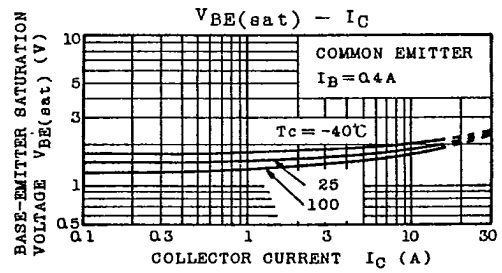
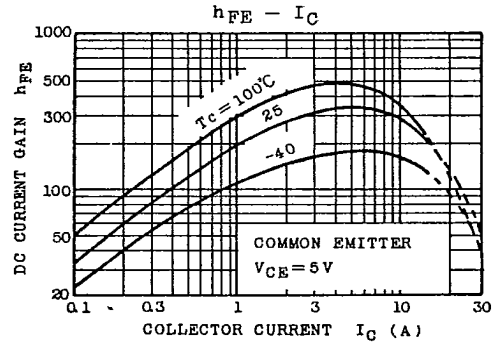
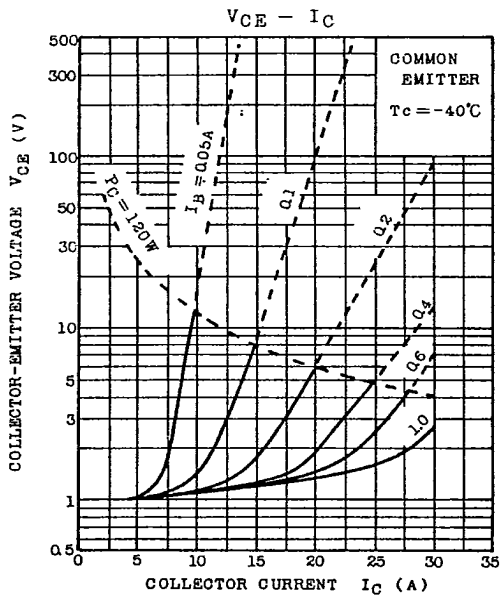
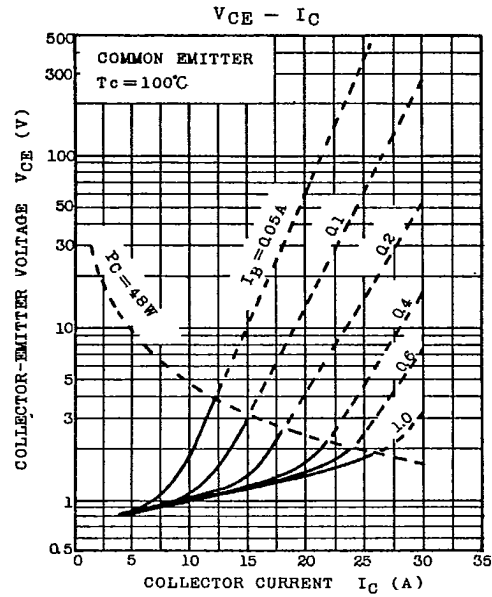
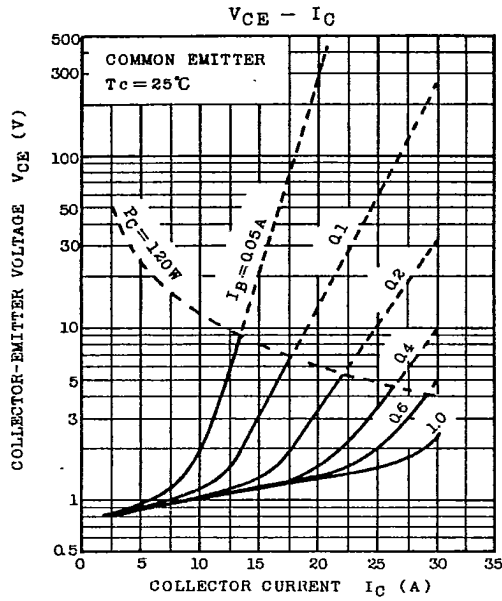
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SEMICONDUCTOR

TECHNICAL DATA

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TOSHIBA CORPORATION

EGA-MG15G1AL3-3

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9097250 TOSHIBA (DISCRETE/OPTO)

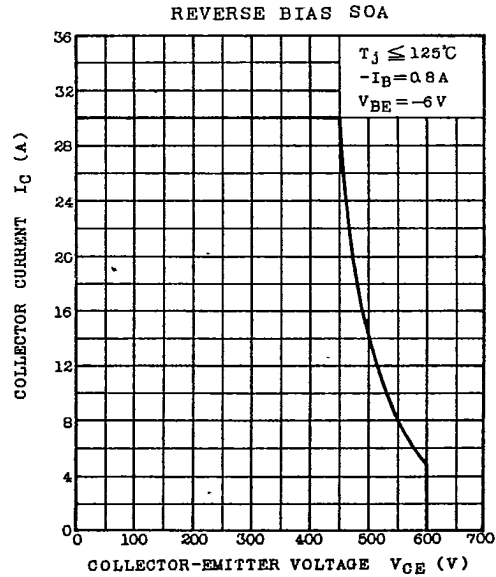
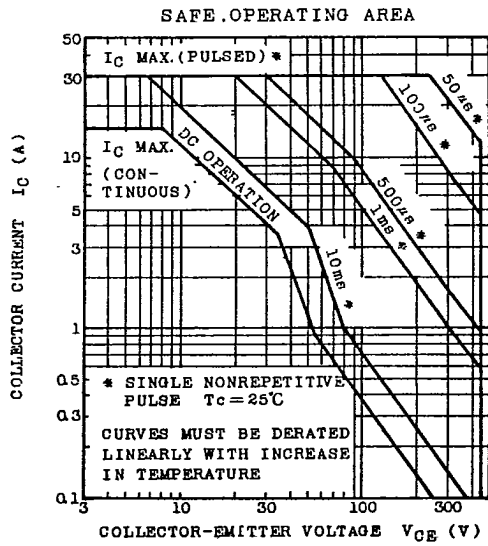
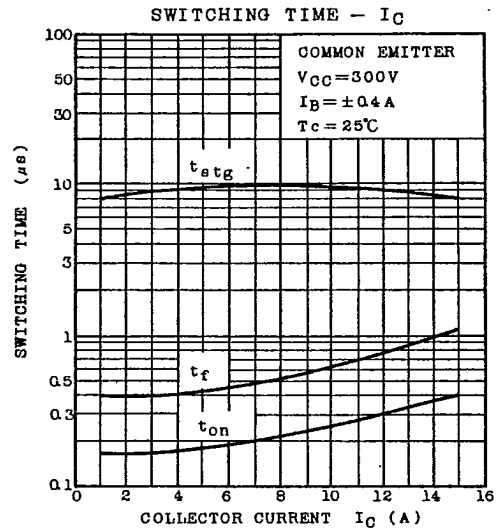
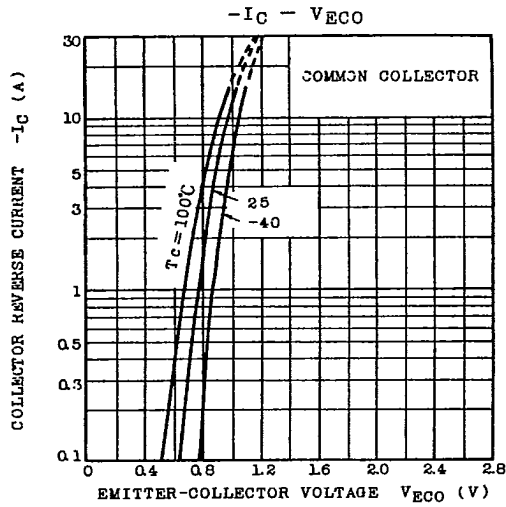
90D 16202 DT-33-35



SEMICONDUCTOR

TECHNICAL DATA

MG15G1AL3



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TOSHIBA CORPORATION

EGA-MG15G1AL3-4

GT1A2