SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER MODULE)

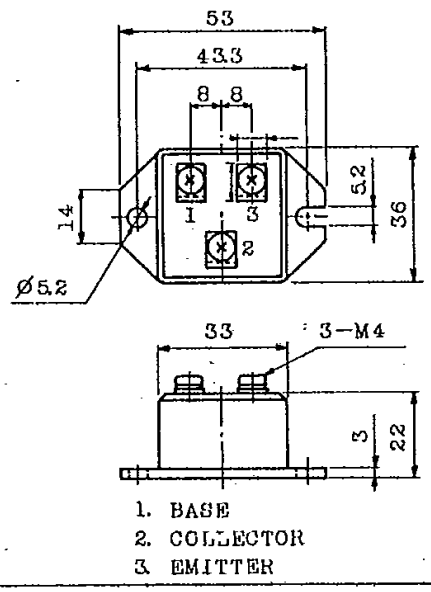
MG30G1BL2

HGIH POWER SWITCHING APPLICATIONS.

FEATURES:

. The Collector is Isolated from Ground.
. High DC Current Gain : h_{FE}=100(Min.) (I_C=30A)
. Low Saturation Voltage : $V_{CE(sat)}$=2V(Max.) (I_C=30A)
. High Speed : t_f=2μs(Max.) (I_C=30A)

Unit in mm



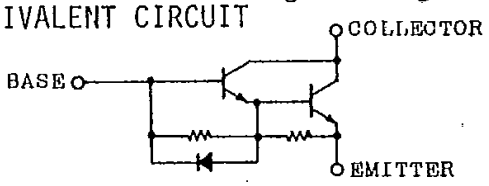
JEDEC	—
EIAJ	—
TOSHIBA	2-33B1A

Weight : 98g

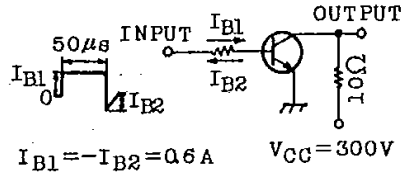
MAXIMUM RATINGS (T_c=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Voltage		$V_{CEO(SUS)}$	450	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	30	A
	Pulse	I_{CP}	60	A
Base Current		I_B	2	A
Collector Power Dissipation (T_c=25°C)		P_C	250	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−40 ~ 125	°C
Isolation Voltage		V_{Isol}	2000 (AC 1Minute)	V
Screw Torque			20	kg·cm

EQUIVALENT CIRCUIT

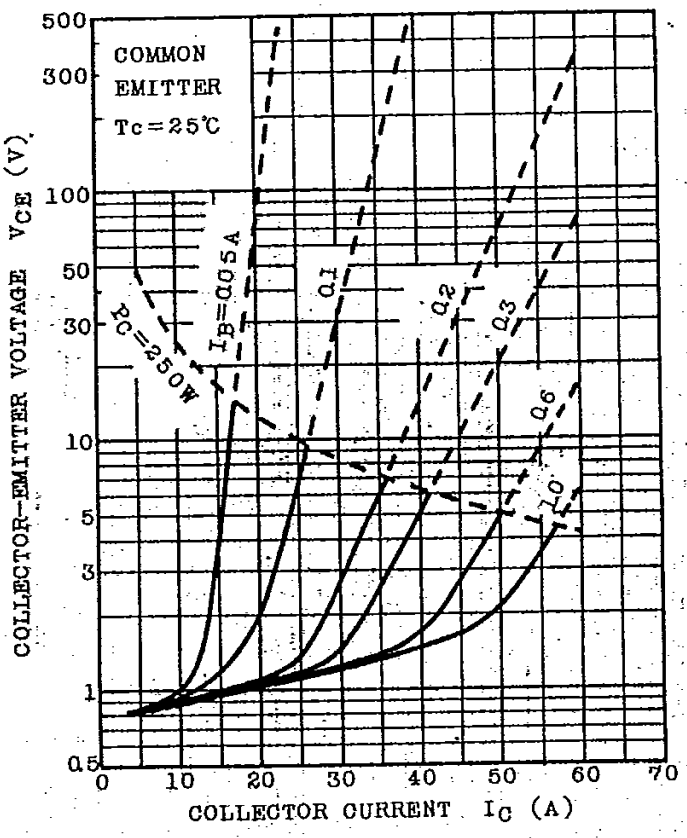


ELECTRICAL CHARACTERISTICS (T_a=25°C)

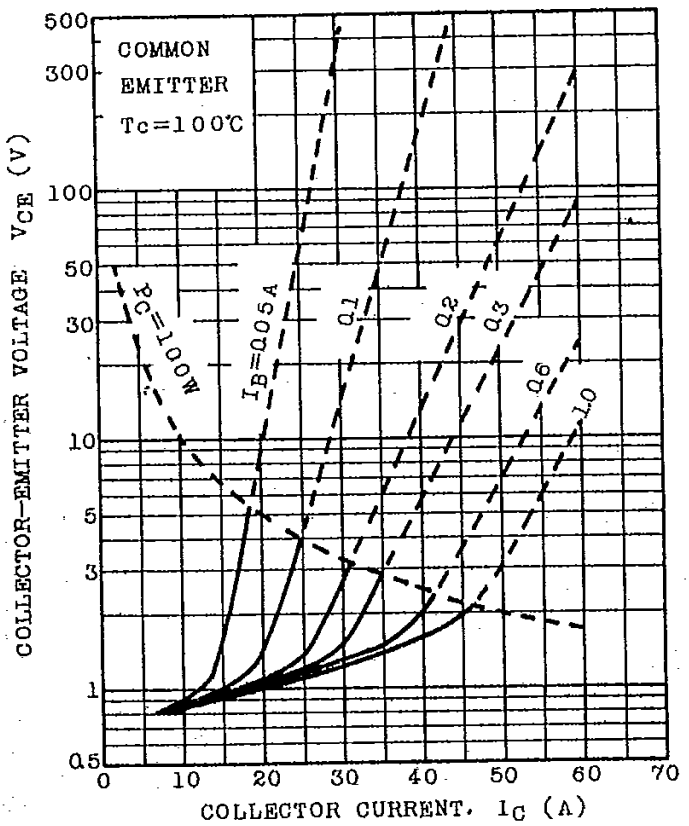
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=600V, I_E=0	−	−	1.0	mA
Emitter Cut-off Current		I_{EBO}	V_{EB}=6V, I_C=0	−	−	200	mA
Collector-Emitter Sustaining Voltage		$V_{CEO(SUS)}$	I_C=0.5A, L=40mH	450	−	−	V
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=30A	100	−	−	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=30A, I_B=0.6A	−	−	2.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$		−	−	2.5	V
Collector Output Capacitance		C_{ob}	V_{CB}=50V, I_E=0, f=1MHz	−	250	−	pF
Switching Time	Turn-on Time	t_{on}		−	−	1.0	μs
	Storage Time	t_{stg}		−	−	12	
	Fall Time	t_f		−	−	2.0	
Thermal Resistance		$R_{th(j-c)}$	Junction to Case	−	−	0.5	°C/W

I_{B1}=−I_{B2}=0.6A
DUTY CYCLE=0.5%

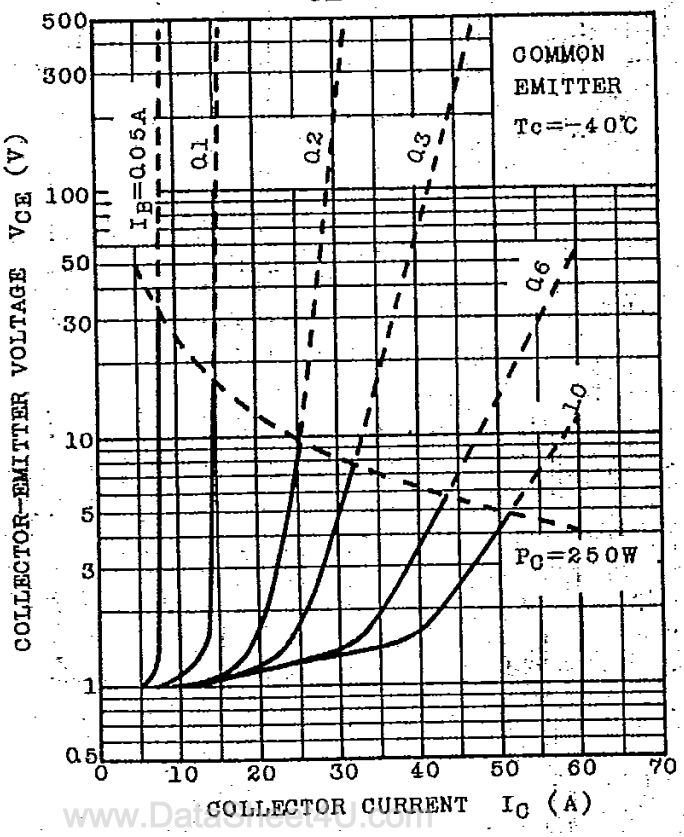
V_{CE} – I_C



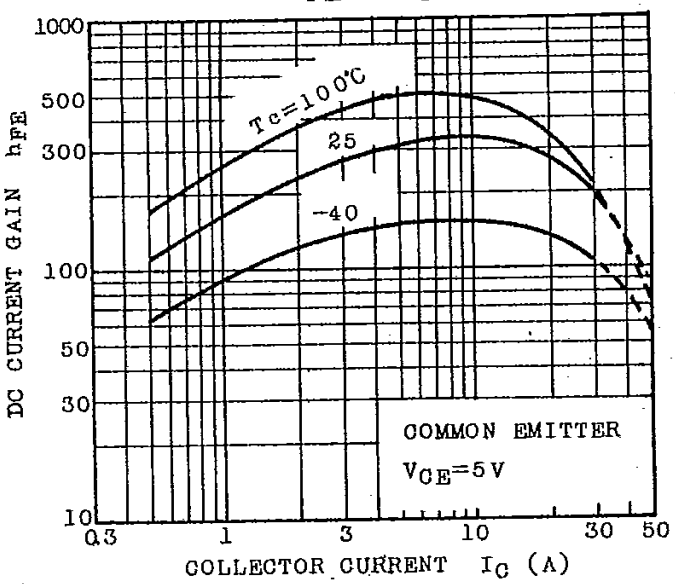
V_{CE} – I_C



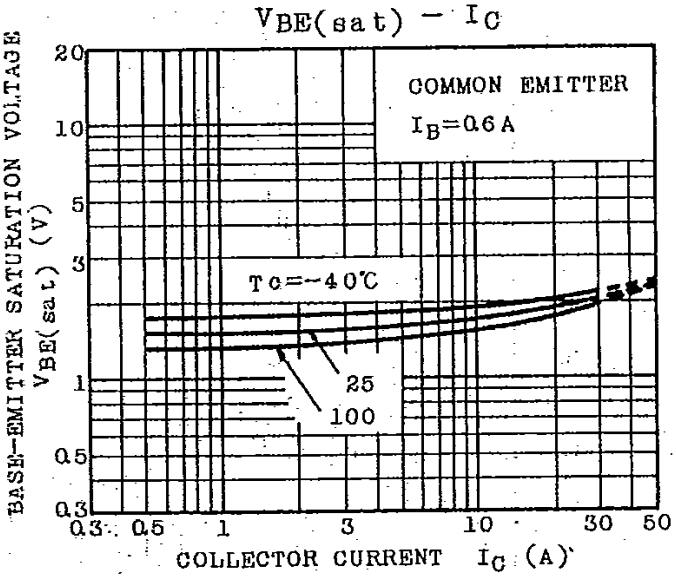
V_{CE} – I_C



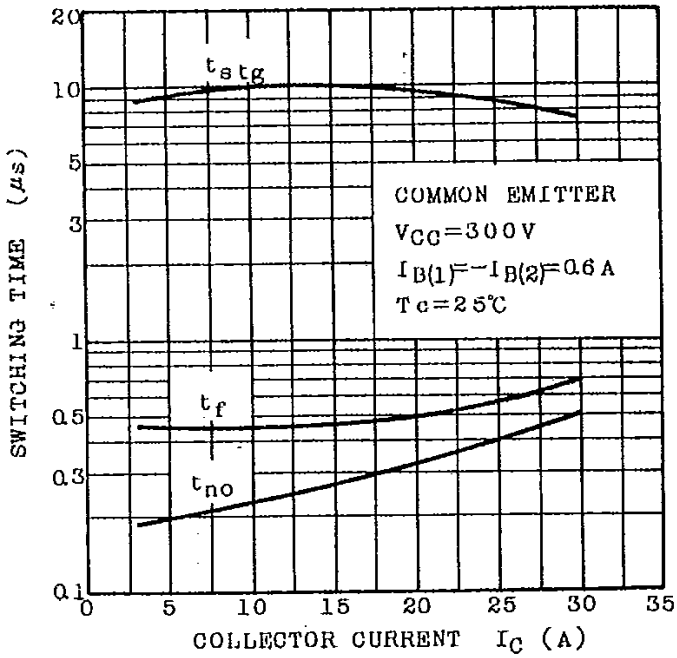
h_{FE} – I_C



$V_{BE(sat)} - I_C$



SWITCHING CHARACTERISTIC



SAFE OPERATING AREA