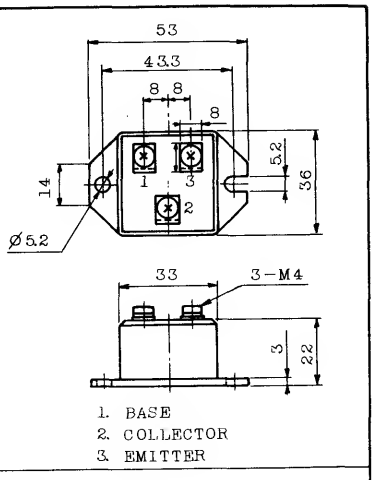
MG50G1BL2

SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER MODULE)

HIGH POWER SWITCHING APPLICATIONS.

FEATURES:
- The Collector is Isolated from Ground.
- High DC Current Gain : h_{FE}=100(Min.) (I_C=50A)
- Low Saturation Voltage : $V_{CE(sat)}$=2V(Max.) (I_C=50A)
- High Speed : t_f=2μs(Max.) (I_C=50A)

Unit in mm



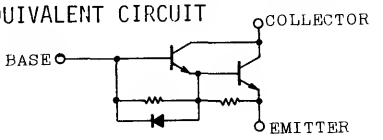
JEDEC	—
EIAJ	—
TOSHIBA	2-33B1A

Weight : 98g

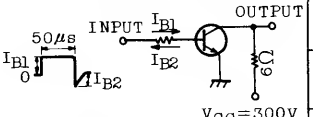
MAXIMUM RATINGS (T_c=25°C)

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	50	A
	Pulse	I_{CP}	100	A
Base Current		I_B	3	A
Collector Power Dissipation (T_c=25°C)		P_C	300	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-40 ~ 125	°C
Isolation Voltage		V_{Isol}	2000 (AC 1 Minute)	V
Screw Torque			20	kg·cm

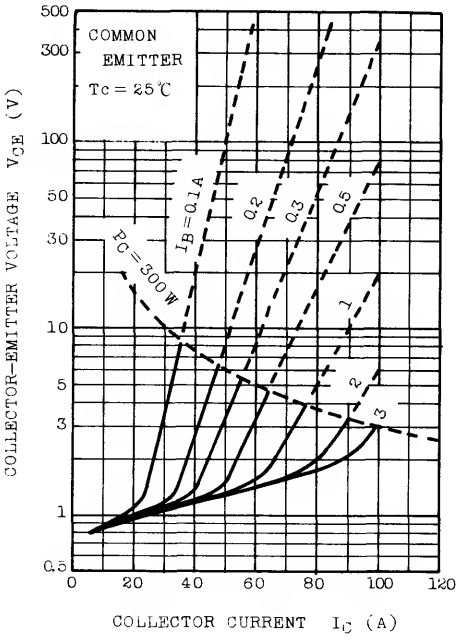
EQUIVALENT CIRCUIT



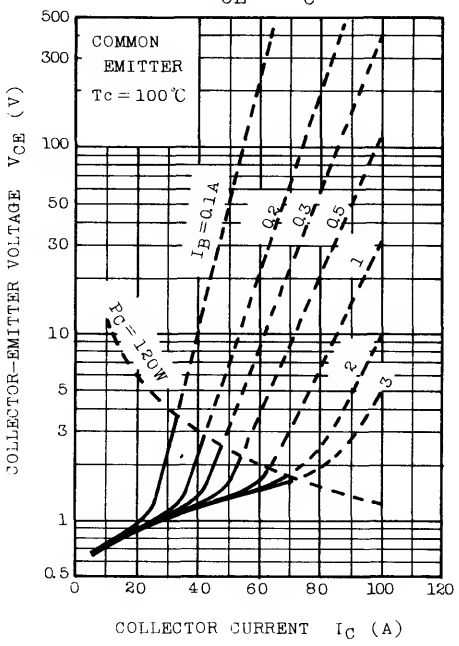
ELECTRICAL CHARACTERISTICS (T_a=25°C)

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=50A	100	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=50A, I_B=1A	-	-	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	-	450	-	pF
Switching Time	Turn-on Time	t_{on}		-	-	1.0	μs
	Storage Time	t_{stg}		-	-	12	
	Fall Time	t_f	I_{B1}=-I_{B2}=1A DUTY CYCLE=0.5%	-	-	2.0	
Thermal Resistance		$R_{th(j-c)}$	Junction to Case	-	-	0.41	°C/W

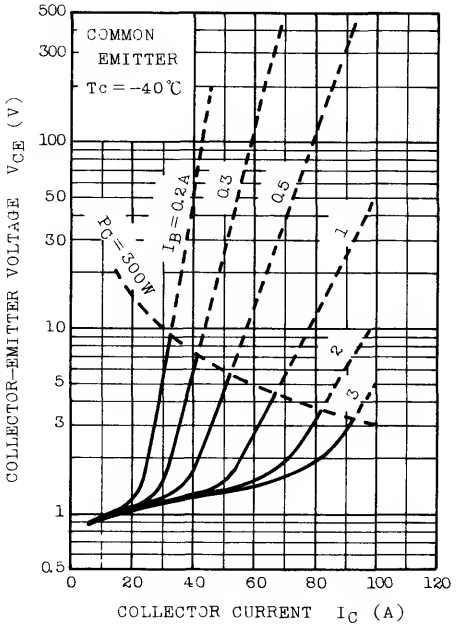
V_{CE} – I_C



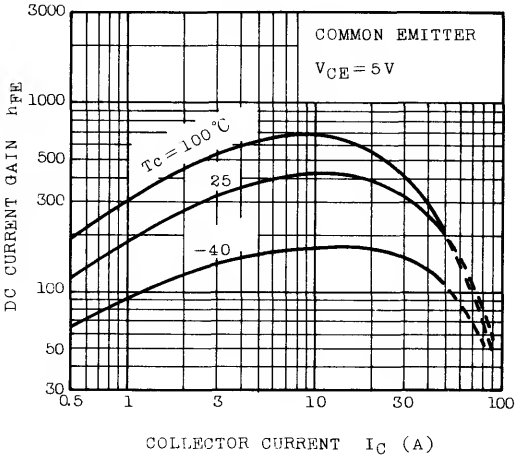
V_{CE} – I_C



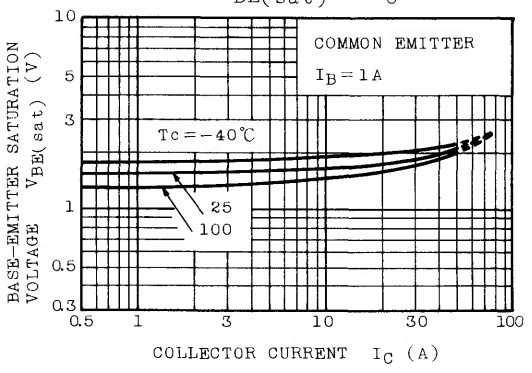
V_{CE} – I_C



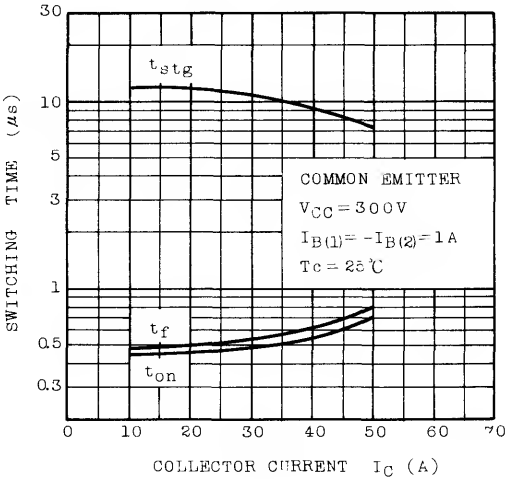
h_{FE} – I_C



$V_{BE(sat)} - I_C$



SWITCHING CHARACTERISTIC



SAFE OPERATING AREA