2SD687

SILICON NPN EPITAXIAL TYPE (PCT PROCESS)
(DARLINGTON POWER)

SWITCHING APPLICATIONS.

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS.

POWER AMPLIFIER APPLICATIONS.

INDUSTRIAL APPLICATIONS

FEATURES :

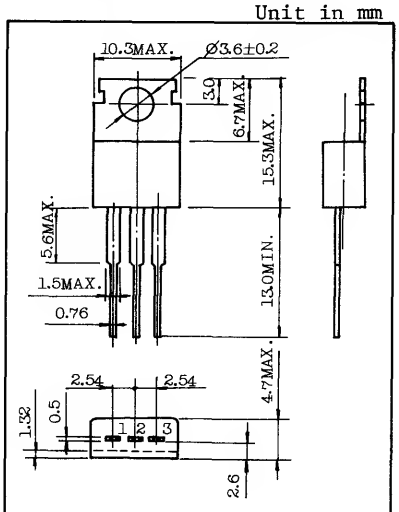
. High DC Current Gain

: h_{FE}=2000(Min.)(V_{CE}=2V, I_C=1A)

. Low Saturation Voltage

: $V_{CE(sat)}$=1.5V(Max.)(I_C=2A)

Unit in mm



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

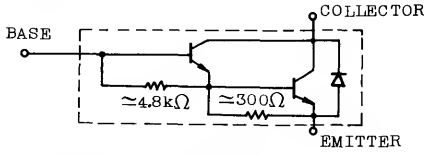
JEDEC	TO — 220AB
EIAJ	SC — 46
TOSHIBA	2 — 10A1A

Mounting Kit No. AC75
Weight : 1.9g

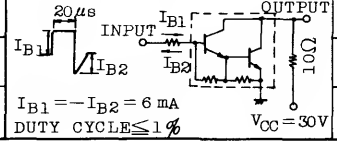
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	3	A
Collector Power Dissipation (Tc=25°C)	P_C	25	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55∿150	°C

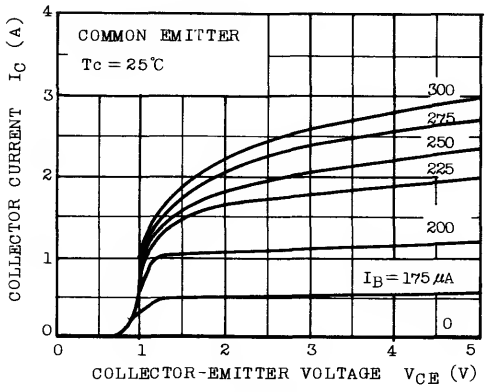
EQUIVALENT CIRCUIT



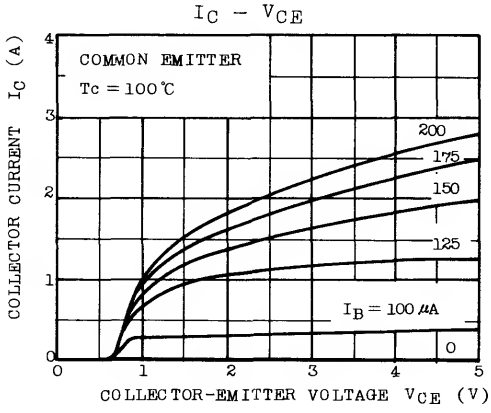
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=60V, I_E=0	-	-	20	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	2.5	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=25mA, I_B=0	40	-	-	V
DC Current Gain		$h_{FE(1)}$	V_{CE}=2V, I_C=1A	2000	-	-	
		$h_{FE(2)}$	V_{CE}=2V, I_C=3A	1000	-	-	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=2A, I_B=4mA	-	-	1.5	V
	Base-Emitter	$V_{BE(sat)}$	I_C=2A, I_B=4mA	-	-	2.0	
Switching Time	Turn-on Time	t_{on}		-	0.1	-	μs
	Storage Time	t_{stg}		-	1.0	-	
	Fall Time	t_f		-	0.2	-	

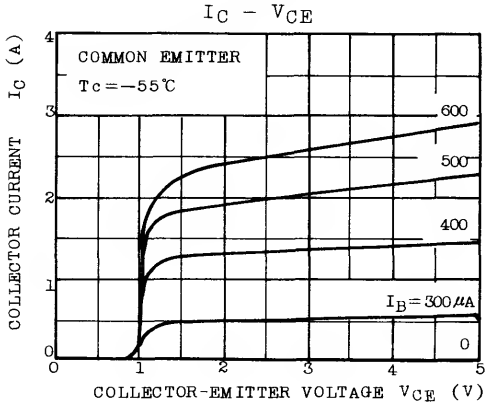
$I_C - V_{CE}$



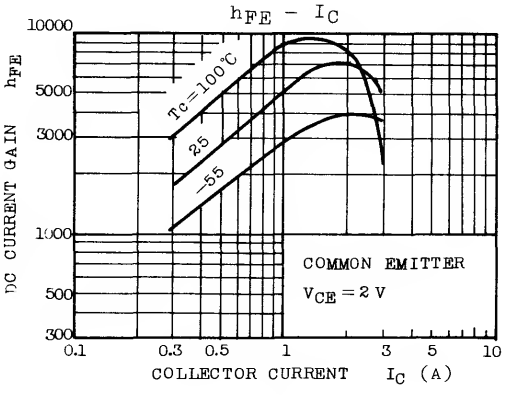
$I_C - V_{CE}$



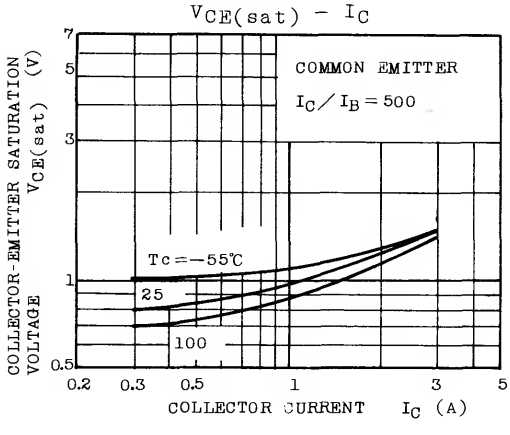
$I_C - V_{CE}$



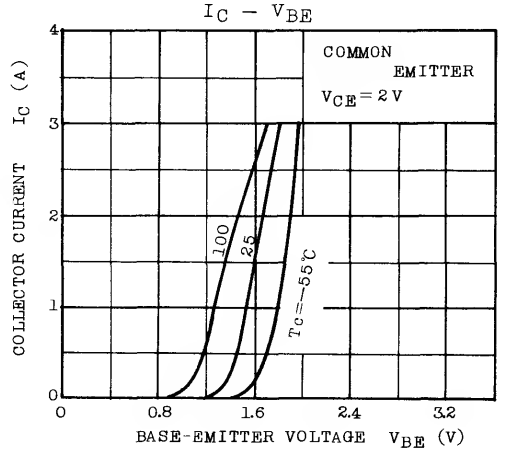
$h_{FE} - I_C$



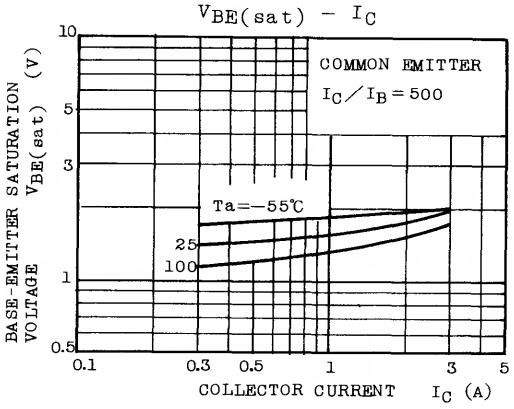
$V_{CE(sat)} - I_C$



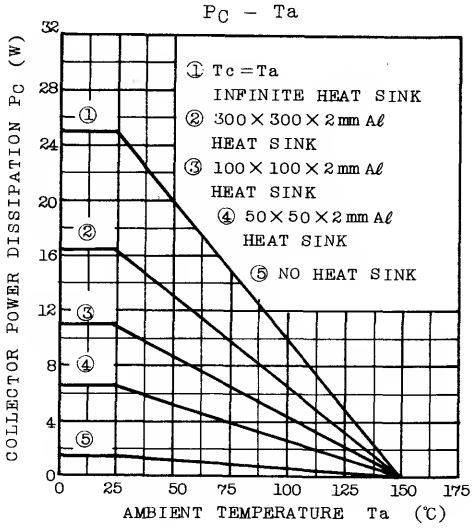
$I_C - V_{BE}$



$V_{BE(sat)} - I_C$



$P_C - Ta$



SAFE OPERATING AREA