2SD633
2SD634
2SD635

SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER)

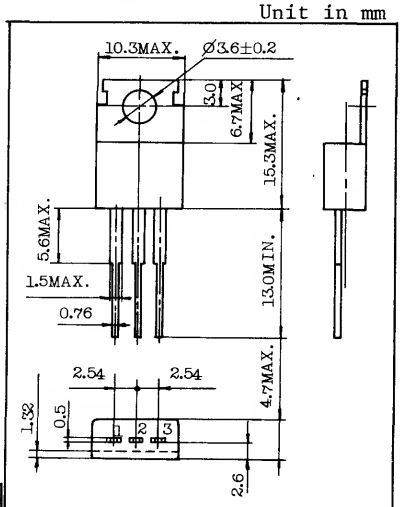
HIGH POWER SWITCHING APPLICATIONS.
HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS.

FEATURES:

- High DC Current Gain
  : h_{FE}=2000 (Min.) (V_{CE}=3V, I_C=3A)
- Low Saturation Voltage
  : $V_{CE(sat)}$=1.5V (Max.), (I_C=3A)
- Complementary to 2SB673, 2SB674, and 2SB675.

INDUSTRIAL APPLICATIONS

Unit in mm



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

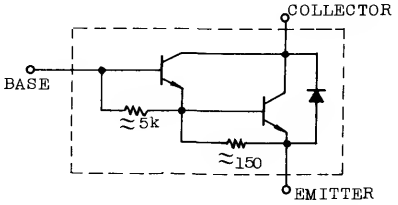
JEDEC	TO – 220AB
EIAJ	SC – 46
TOSHIBA	2 – 10A1A

Mounting Kit No. AC75
Weight : 1.9g

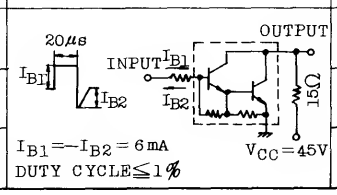
MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SD633	V_{CBO}	100	V
	2SD634		80	
	2SD635		60	
Collector-Emitter Voltage	2SD633	V_{CEO}	100	V
	2SD634		80	
	2SD635		60	
Emitter-Base Voltage		V_{EBO}	5	V
Continuous Collector Current		I_C	7	A
Contunuous Base Current		I_B	0.2	A
Collector Power Dissipation (Tc=25°C)		P_C	40	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55∿150	°C

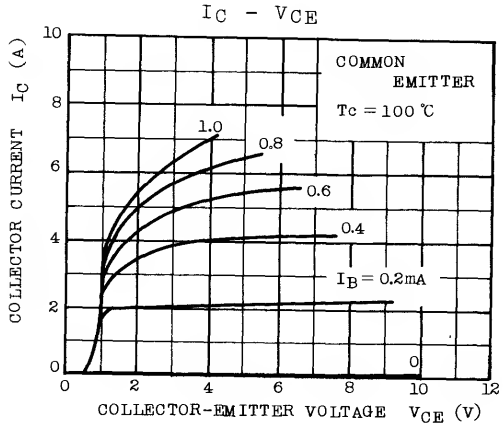
EQUIVALENT CIRCUIT



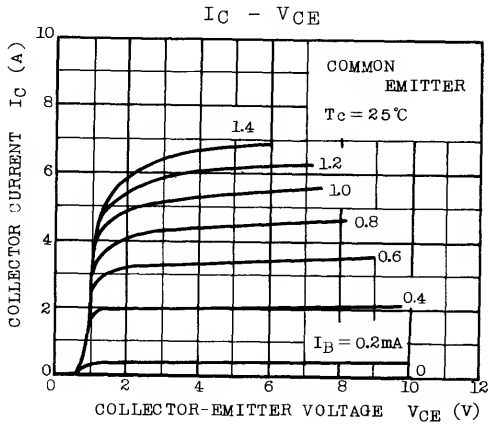
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SD633	I_{CBO}	V_{CB}=100V, I_E=0	-	-	100	μA
	2SD634		V_{CB}=80V, I_E=0	-	-	100	
	2SD635		V_{CB}=60V, I_E=0	-	-	100	
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	3.0	mA
Collector-Emitter Breakdown Voltage	2SD633	$V_{(BR)CEO}$	I_C=50mA, I_B=0	100	-	-	V
	2SD634			80	-	-	
	2SD635			60	-	-	
DC Current Gain		$h_{FE(1)}$	V_{CE}=3V, I_C=3A	2000	-	15000	
		$h_{FE(2)}$	V_{CE}=3V, I_C=7A	1000	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)(1)}$	IC=3A, I_B=6mA	-	0.9	1.5	V
		$V_{CE(sat)(2)}$	I_C=7A, I_B=14mA	-	1.2	2.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=3A, I_B=6mA	-	1.5	2.5	V
Switching Time	Turn-on Time	t_{on}		-	0.8	-	μs
	Storage Time	t_{stg}		-	3.0	-	
	Fall Time	t_f		-	2.5	-	

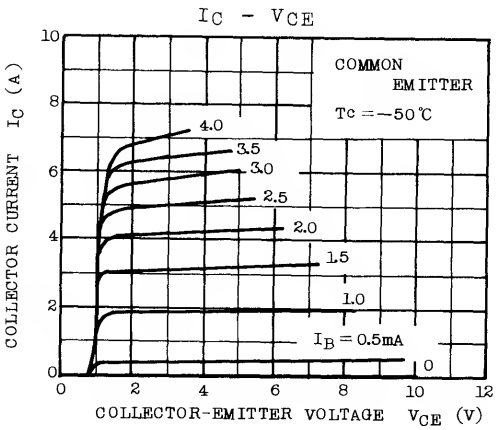
I_C - V_{CE}



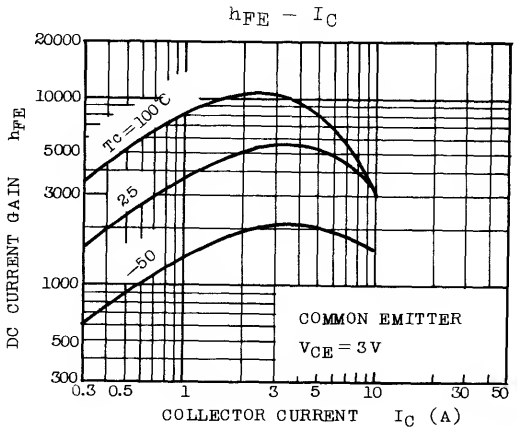
I_C - V_{CE}



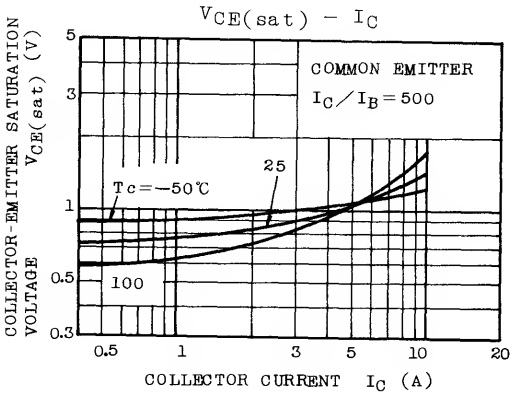
I_C - V_{CE}



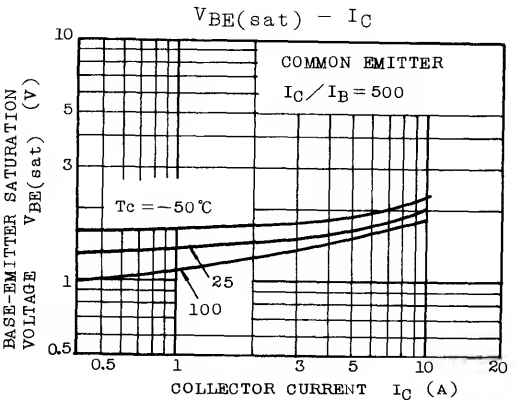
h_{FE} - I_C



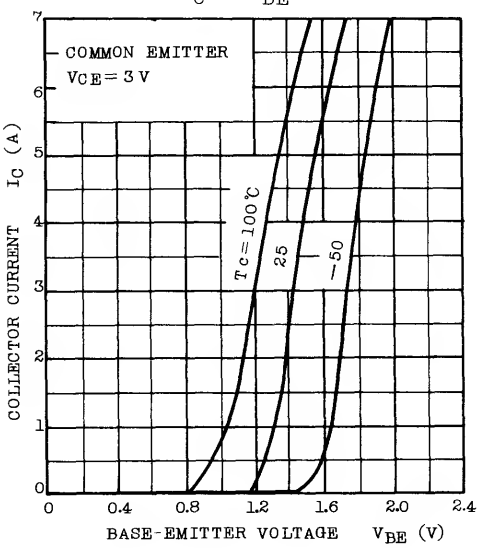
$V_{CE(sat)}$ - I_C



$V_{BE(sat)}$ - I_C



$I_C - V_{BE}$



SAFE OPERATING AREA