

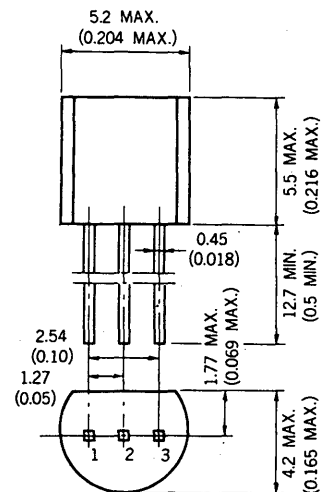
DESCRIPTION The 2SA954 is designed for use in driver stage of high voltage audio equipment.

- FEATURES**
- High total power dissipation.
 $P_T = 600 \text{ mW}$
 - High h_{FE} and high voltage.
 $h_{FE} (I_C = -50 \text{ mA}) : 200 \text{ TYP.}$
 $V_{CEO} : -80 \text{ V}$

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature	-55 to +150 °C
Junction Temperature	+150 °C Maximum
Maximum Power Dissipation ($T_a = 25 \text{ °C}$)	
Total Power Dissipation	600 mW
Maximum Voltages and Currents ($T_a = 25 \text{ °C}$)	
V_{CBO} Collector to Base Voltage	-80 V
V_{CEO} Collector to Emitter Voltage	-80 V
V_{EBO} Emitter to Base Voltage	-5.0 V
I_C Collector Current	-300 mA
I_B Base Current	-60 mA

PACKAGE DIMENSIONS in millimeters (inches)



1. EMITTER EIAJ : SC-43B
2. COLLECTOR JEDEC : TO-92
3. BASE IEC : PA33

ELECTRICAL CHARACTERISTICS ($T_a = 25 \text{ °C}$)

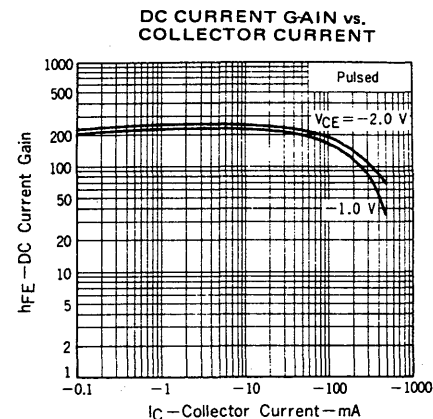
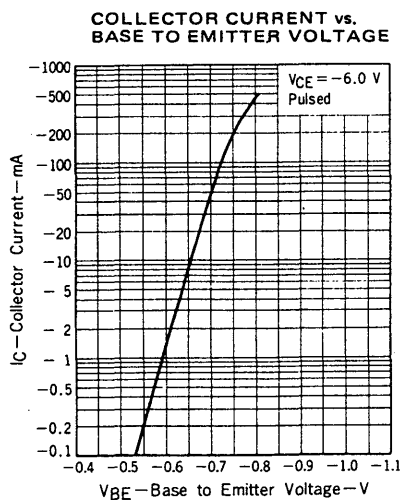
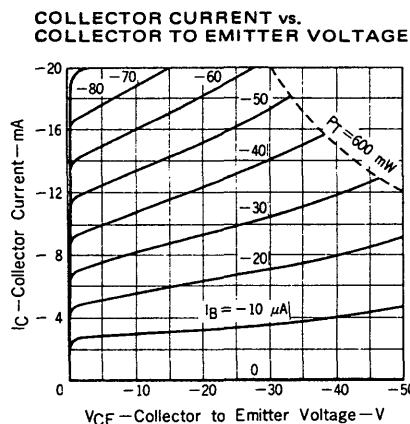
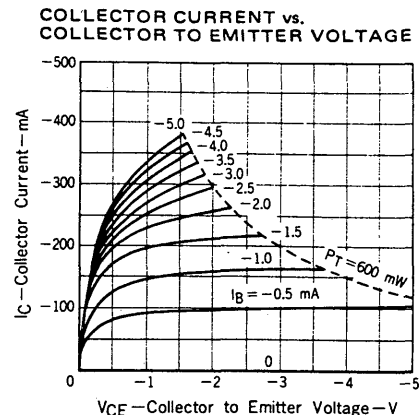
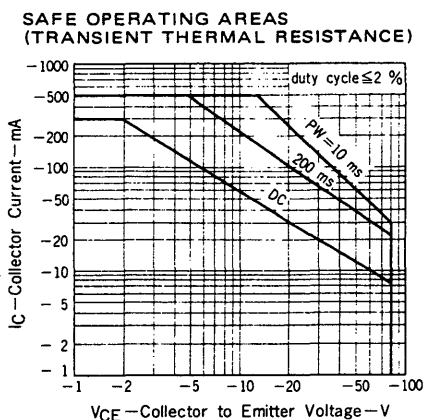
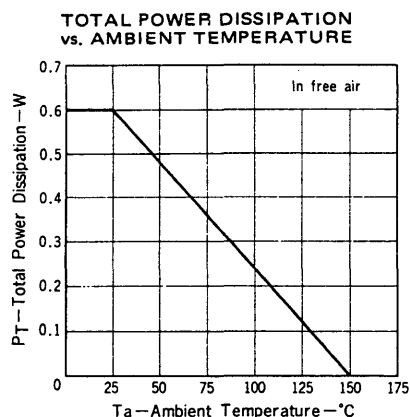
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}^*	DC Current Gain	90	200	400	—	$V_{CE} = -1.0 \text{ V}, I_C = -50 \text{ mA}$
h_{FE2}^*	DC Current Gain	30	80		—	$V_{CE} = -1.0 \text{ V}, I_C = -300 \text{ mA}$
C_{ob}	Collector to Base Capacitance		13	25	pF	$V_{CB} = -6.0 \text{ V}, I_E = 0$ $f = 1.0 \text{ MHz}$
f_T	Gain Bandwidth Product	50	100		MHz	$V_{CE} = -6.0 \text{ V}, I_E = 10 \text{ mA}$
V_{BE}^*	Base to Emitter Voltage	-600	-660	-700	mV	$V_{CE} = -6.0 \text{ V}, I_C = -10 \text{ mA}$
$V_{CE(sat)}^*$	Collector Saturation Voltage		-0.15	-0.6	V	$I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$
$V_{BE(sat)}^*$	Base Saturation Voltage		-0.85	-1.2	V	$I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$
I_{CBO}	Collector Cutoff Current			-100	nA	$V_{CB} = -80 \text{ V}, I_E = 0$
I_{EBO}	Emitter Cutoff Current			-100	nA	$V_{EB} = -5.0 \text{ V}, I_C = 0$

* Pulsed PW $\leq 350 \mu\text{s}$, duty cycle $\leq 2.0 \%$

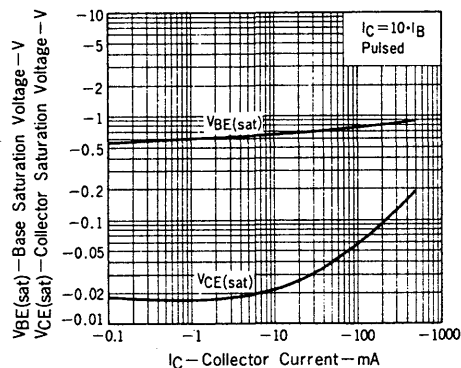
Classification of h_{FE1}

Rank	M	L	K
Range	90 - 180	135 - 270	200 - 400

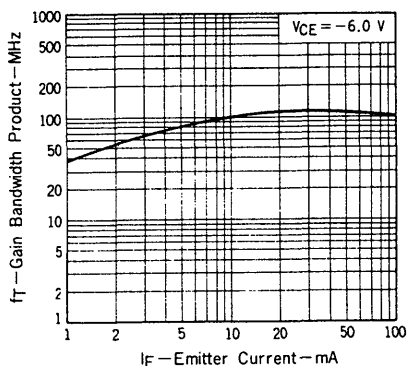
h_{FE} Test Conditions : $V_{CE} = -1.0 \text{ V}, I_C = -50 \text{ mA}$

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



EMITTER TO BASE AND COLLECTOR TO BASE CAPACITANCE vs. REVERSE VOLTAGE

