

DESCRIPTION The 2SA952 is designed for use in output stage of portable radio and cassette type tape recorder, general purpose applications.

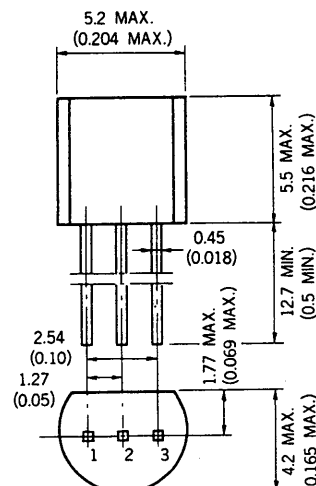
FEATURES

- High total power dissipation.
 $P_T = 600 \text{ mW}$
- High h_{FE} and low $V_{CE(sat)}$.
 $h_{FE} (I_C = -100 \text{ mA}) : 200 \text{ TYP.}$
 $V_{CE(sat)} (-700 \text{ mA}) : -0.25 \text{ V TYP.}$

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		-30 V
V_{CEO} Collector to Emitter Voltage		-25 V
V_{EBO} Emitter to Base Voltage		-5.0 V
I_C Collector Current		-700 mA
I_B Base Current		-150 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	—	$V_{CE} = -1.0 \text{ V}, I_C = -100 \text{ mA}$
h_{FE2}^*	DC Current Gain	50	100	—	—	$V_{CE} = -1.0 \text{ V}, I_C = -700 \text{ mA}$
C_{ob}	Collector to Base Capacitance	—	17	40	pF	$V_{CB} = -6.0 \text{ V}, I_E = 0$ $f = 1.0 \text{ MHz}$
f_T	Gain Bandwidth Product	50	160	—	MHz	$V_{CE} = -6.0 \text{ V}, I_E = 10 \text{ mA}$
V_{BE}^*	Base to Emitter Voltage	-600	-640	-700	mV	$V_{CE} = -6.0 \text{ V}, I_C = -10 \text{ mA}$
$V_{CE(sat)}^*$	Collector Saturation Voltage	—	-0.25	-0.6	V	$I_C = -700 \text{ mA}, I_B = -70 \text{ mA}$
$V_{BE(sat)}^*$	Base Saturation Voltage	—	-0.95	-1.2	V	$I_C = -700 \text{ mA}, I_B = -70 \text{ mA}$
I_{CBO}	Collector Cutoff Current	—	—	-100	nA	$V_{CB} = -30 \text{ V}, I_E = 0$
I_{EBO}	Emitter Cutoff Current	—	—	-100	nA	$V_{EB} = -5.0 \text{ V}, I_C = 0$

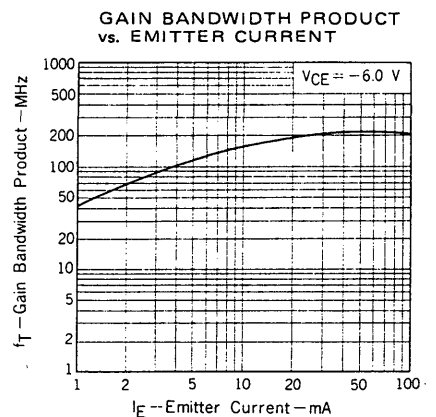
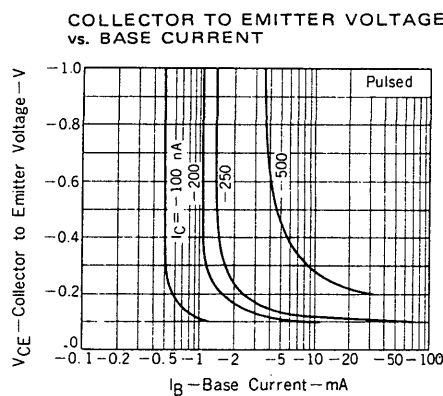
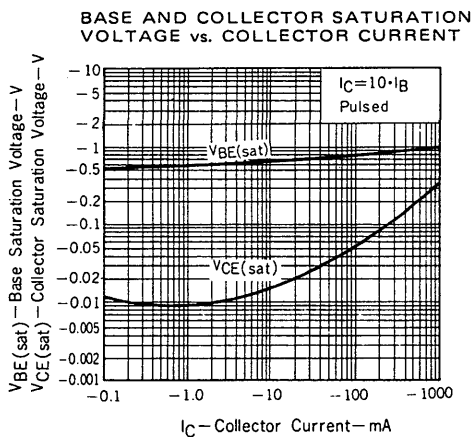
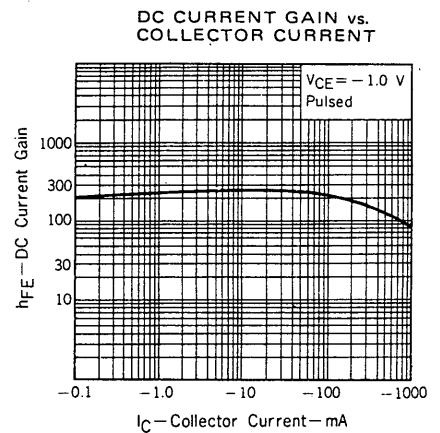
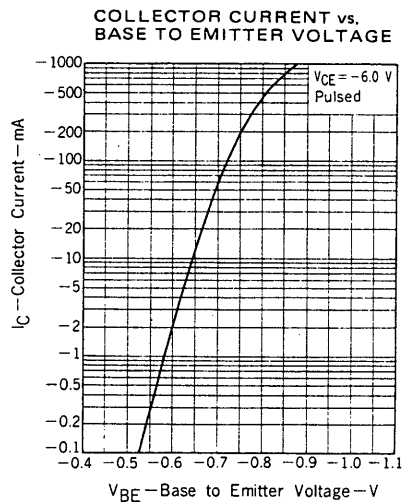
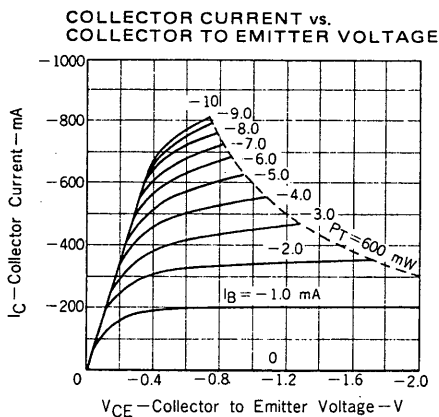
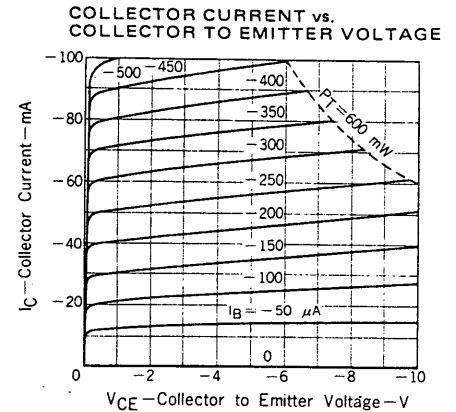
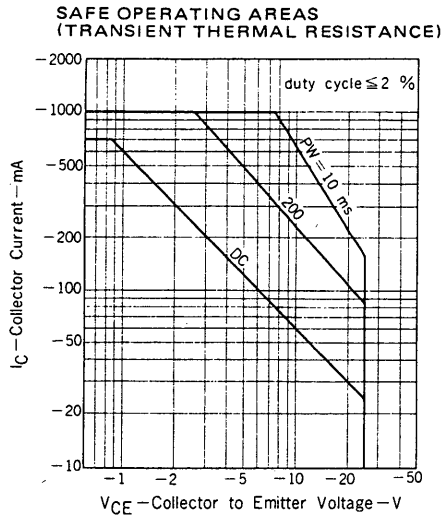
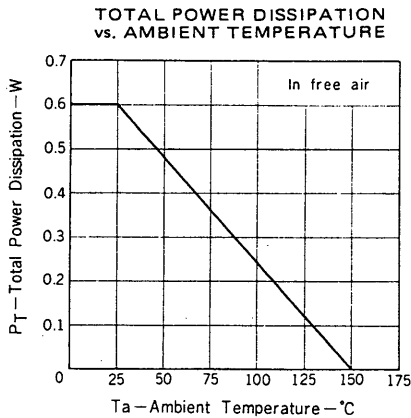
* Pulsed $PW \leq 350 \mu s$, duty cycle $\leq 2.0 \%$

Classification of h_{FE1}

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

h_{FE} Test Conditions : $V_{CE} = -1.0 \text{ V}, I_C = -100 \text{ mA}$

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



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