

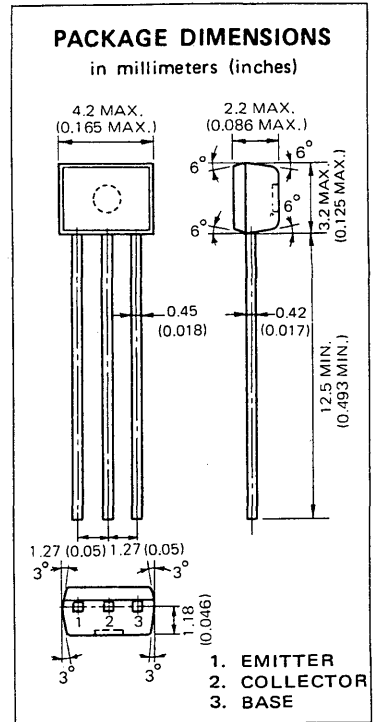
NPN SILICON TRANSISTOR 2SC2784

DESCRIPTION The 2SC2784 is the best for use as the middle range amplifier in Hi-Fi stereo control amplifiers, power amplifiers, and etc.

- FEATURES**
- High voltage. $V_{CEO} : 120\text{ V}$
 - Low output capacitance. $C_{ob} : 1.6\text{ pF TYP. (}V_{CB} = 30\text{ V)}$
 - High h_{FE} $h_{FE} : 600\text{ TYP. (}V_{CE} = 6.0\text{ V, }I_C = 1.0\text{ mA)}$
 - Super low noise. $NV : 25\text{ mV TYP. (See test circuit.)}$
 - Complementary to the NEC 2SA1174 PNP transistor.

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
- Storage Temperature $-55\text{ to }+125\text{ }^\circ\text{C}$
 - Junction Temperature $+125\text{ }^\circ\text{C Maximum}$
- Maximum Power Dissipation ($T_a = 25\text{ }^\circ\text{C}$)
- Total Power Dissipation 300 mW
- Maximum Voltages and Currents ($T_a = 25\text{ }^\circ\text{C}$)
- V_{CBO} Collector to Base Voltage 120 V
 - V_{CEO} Collector to Emitter Voltage 120 V
 - V_{EBO} Emitter to Base Voltage 5.0 V
 - I_C Collector Current 50 mA
 - I_B Base Current 10 mA



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

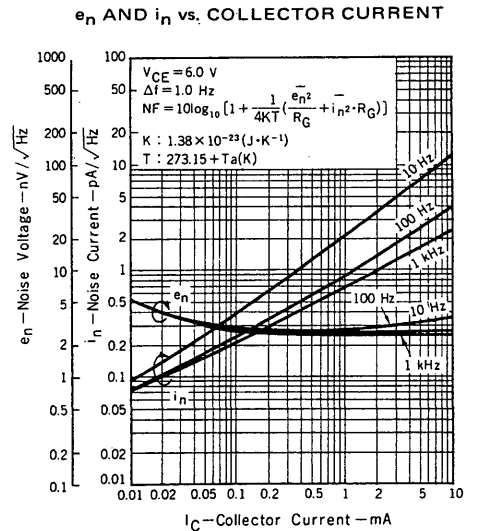
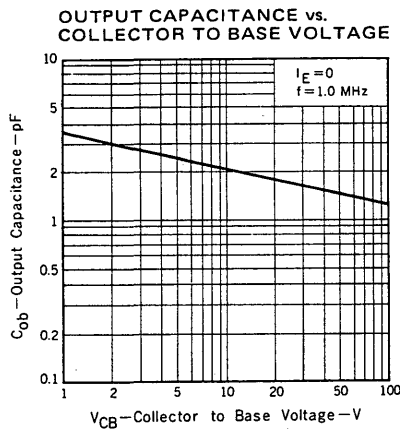
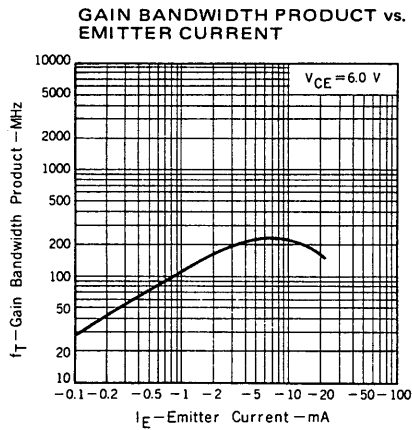
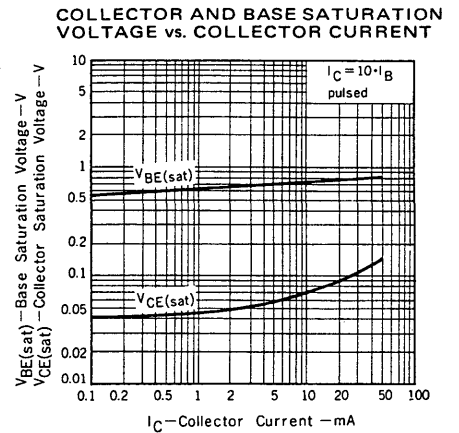
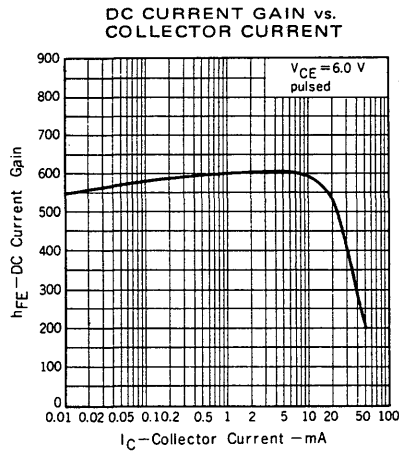
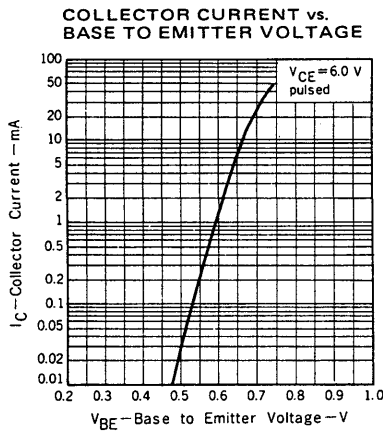
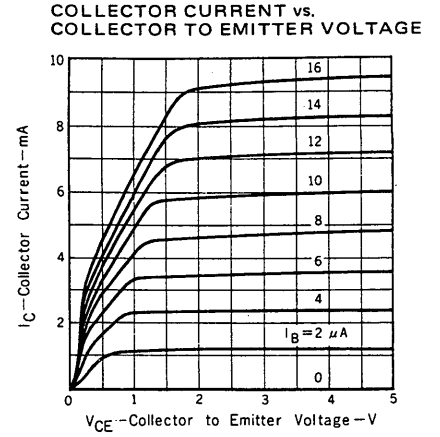
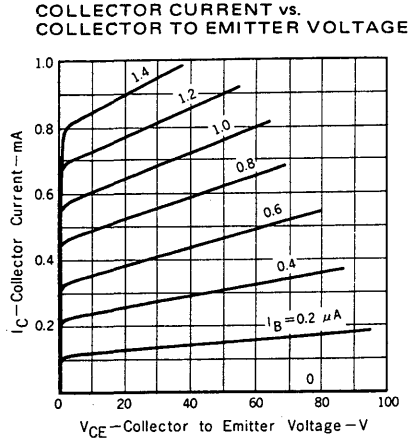
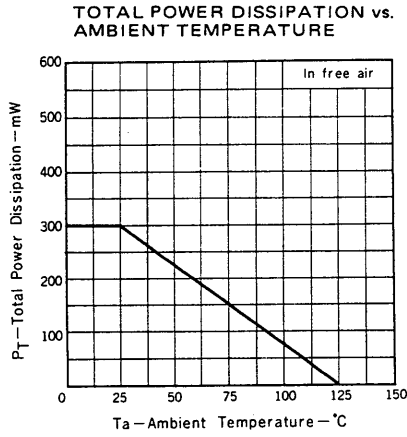
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	150	580		—	$V_{CE}=6.0\text{ V, }I_C=0.1\text{ mA}$
h_{FE2}	DC Current Gain	200	600	1200	—	$V_{CE}=6.0\text{ V, }I_C=1.0\text{ mA}$
f_T	Gain Bandwidth Product	50	110		MHz	$V_{CE}=6.0\text{ V, }I_E=1.0\text{ mA}$
C_{ob}	Output Capacitance		1.6	2.5	pF	$V_{CB}=30\text{ V, }I_E=0, f=1.0\text{ MHz}$
NV	Noise Voltage		25	40	mV	$V_{CE}=5.0\text{ V, }I_C=1.0\text{ mA, }R_G=100\text{ k}\Omega$ $G_V=80\text{ dB, }f=10\text{ Hz to }1.0\text{ kHz}$
I_{CBO}	Collector Cutoff Current			50	nA	$V_{CB}=120\text{ V, }I_E=0$
I_{EBO}	Emitter Cutoff Current			50	nA	$V_{EB}=5.0\text{ V, }I_C=0$
V_{BE}	Base to Emitter Voltage	0.55	0.59	0.65	V	$V_{CE}=6.0\text{ V, }I_C=1.0\text{ mA}$
$V_{CE(sat)}$	Collector Saturation Voltage		0.07	0.30	V	$I_C=10\text{ mA, }I_B=1.0\text{ mA}$

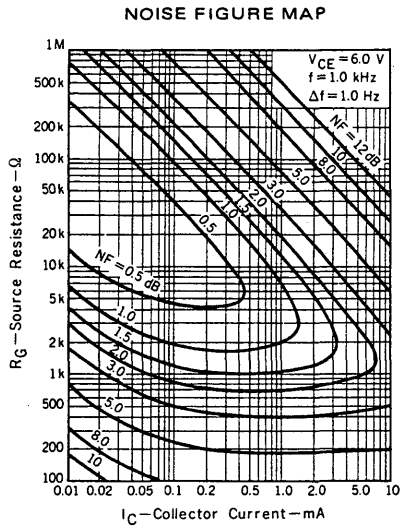
Classification of h_{FE2}

Rank	P	F	E	U
Range	200 – 400	300 – 600	400 – 800	600 – 1200

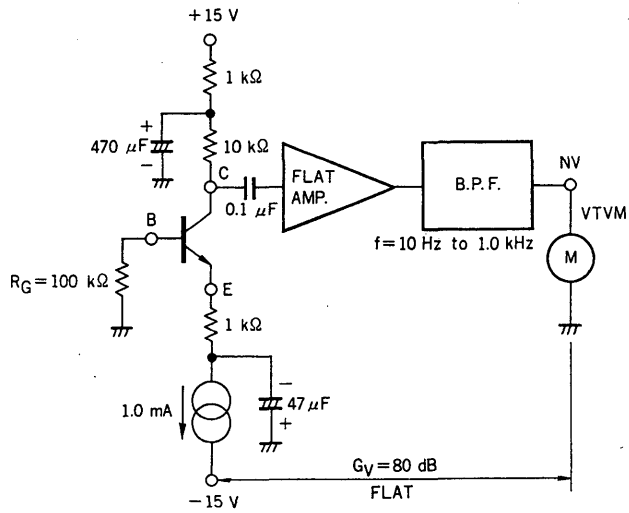
h_{FE2} Test Conditions : $V_{CE}=6.0\text{ V, }I_C=1.0\text{ mA}$

TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)





NOISE VOLTAGE TEST CIRCUIT



$V_{CE} \approx 5 \text{ V}$, $I_C = 1.0 \text{ mA}$, $R_G = 100 \text{ k}\Omega$, $G_V = 80 \text{ dB}$, $\text{FLAT}(f = 10 \text{ Hz to } 1.0 \text{ kHz})$