

DESCRIPTION The 2SC1842 is designed for use in an AF amplifier and general purpose.

FEATURES

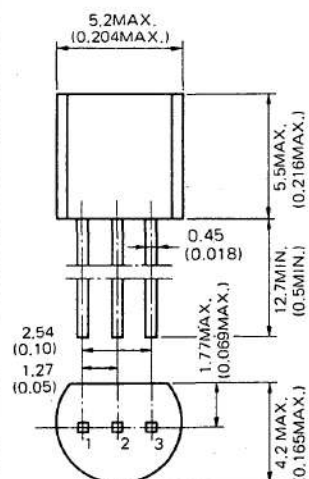
- High h_{FE} . h_{FE} : 600 TYP. ($V_{CE}=6.0$ V, $I_C=1.0$ mA)
- Low Noise Voltage. NV : 30 mV TYP. ($V_{CE}=6.0$ V, $I_C=1.0$ mA, $R_G=100$ k Ω , $G_v=80$ dB, $f=10$ Hz to 1.0 kHz)

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature	-55 to +125 °C
Junction Temperature	+125 °C Maximum
Maximum Power Dissipation ($T_a=25$ °C)	
Total Power Dissipation	250 mW
Maximum Voltages and Currents ($T_a=25$ °C)	
V_{CBO} Collector to Base Voltage	40 V
V_{CEO} Collector to Emitter Voltage	35 V
V_{EBO} Emitter to Base Voltage	5.0 V
I_C Collector Current	100 mA
I_B Base Current	20 mA

PACKAGE DIMENSIONS

in millimeters (inches)



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

ELECTRICAL CHARACTERISTICS ($T_a=25$ °C)

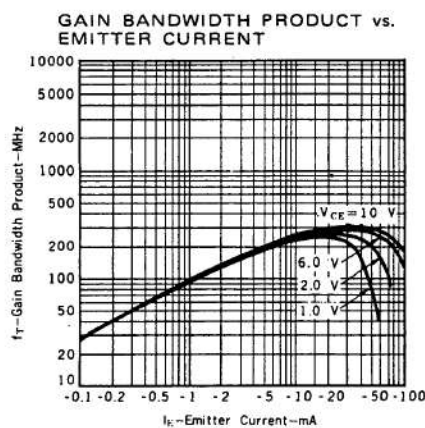
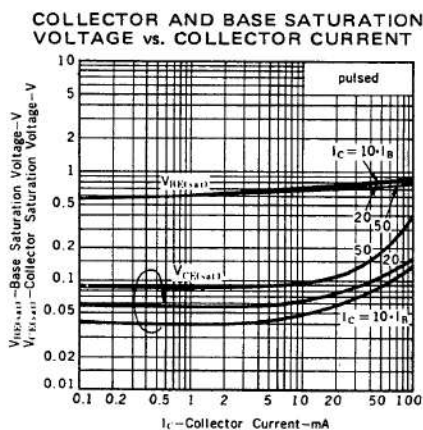
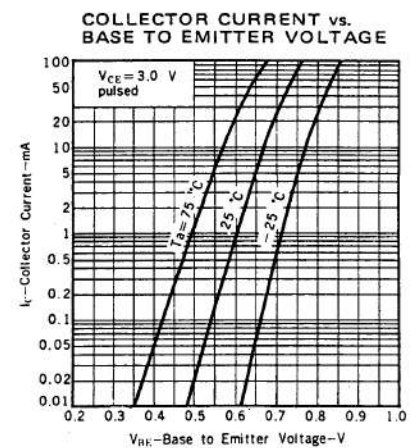
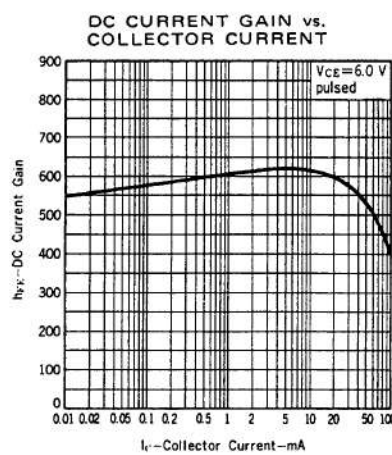
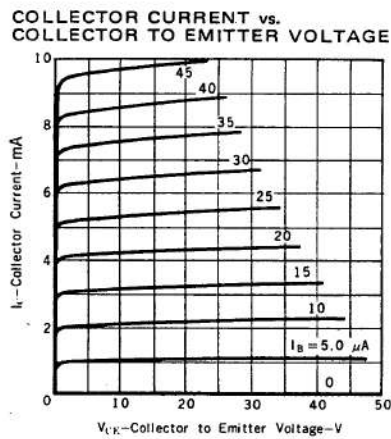
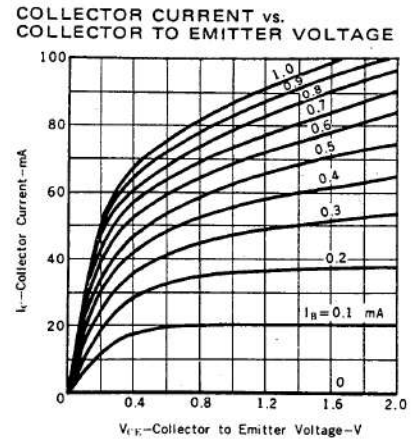
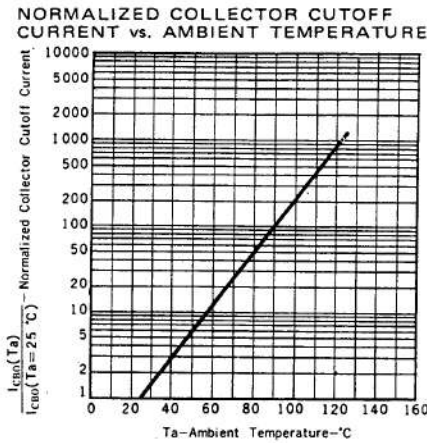
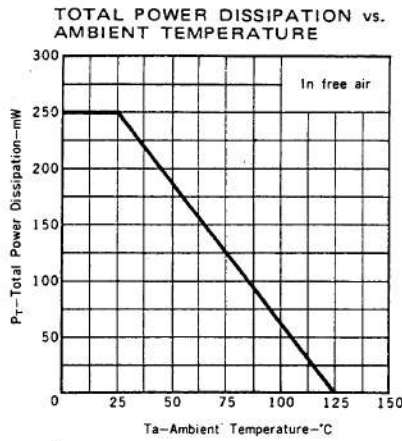
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	150	580	—	—	$V_{CE}=6.0$ V, $I_C=0.1$ mA
h_{FE2}	DC Current Gain	200	600	1200	—	$V_{CE}=6.0$ V, $I_C=1.0$ mA
f_T	Gain Bandwidth Product	150	250	—	MHz	$V_{CE}=6.0$ V, $I_E=-10$ mA
C_{ob}	Output Capacitance	—	3.0	4.0	pF	$V_{CB}=6.0$ V, $I_E=0$, $f=1.0$ MHz
NV	Noise Voltage	—	30	50	mV	$V_{CE}=5.0$ V, $I_C=1.0$ mA, $R_G=100$ k Ω , $G_v=80$ dB, $f=10$ Hz to 1.0 kHz
I_{CBO}	Collector Cutoff Current	—	—	100	nA	$V_{CB}=40$ V, $I_E=0$
I_{EBO}	Emitter Cutoff Current	—	—	100	nA	$V_{EB}=5.0$ V, $I_C=0$
$V_{BE(sat)}$	Base Saturation Voltage	—	0.86	1.0	V	$I_C=100$ mA, $I_B=10$ mA
$V_{CE(sat)}$	Collector Saturation Voltage	—	0.15	0.3	V	$I_C=100$ mA, $I_B=10$ mA
V_{BE}	Base to Emitter Voltage	0.55	0.60	0.65	V	$V_{CE}=6.0$ V, $I_C=1.0$ mA

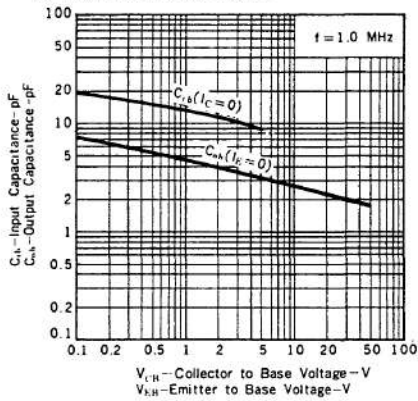
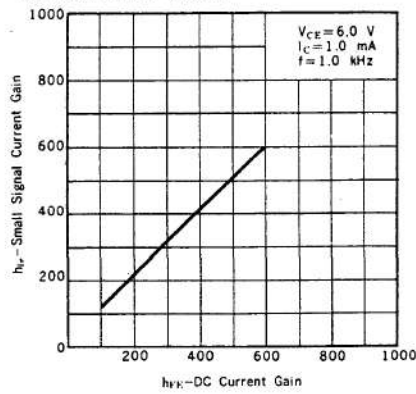
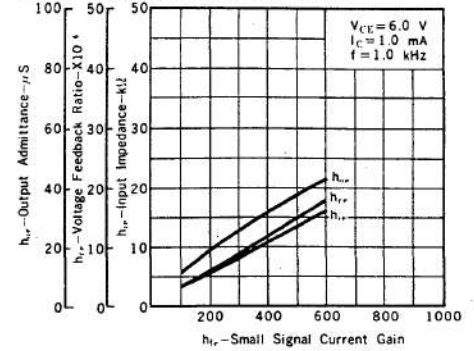
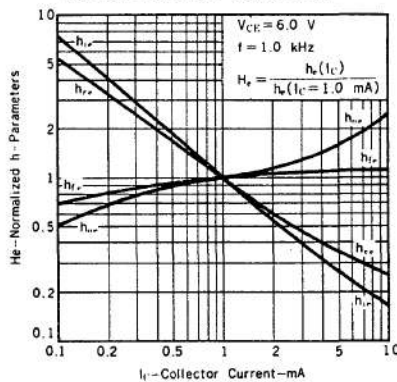
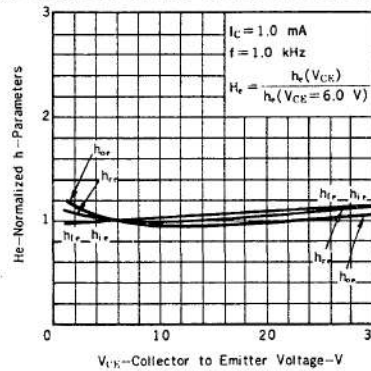
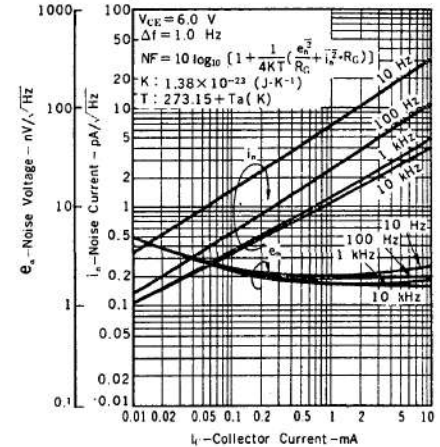
Classification of h_{FE2}

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

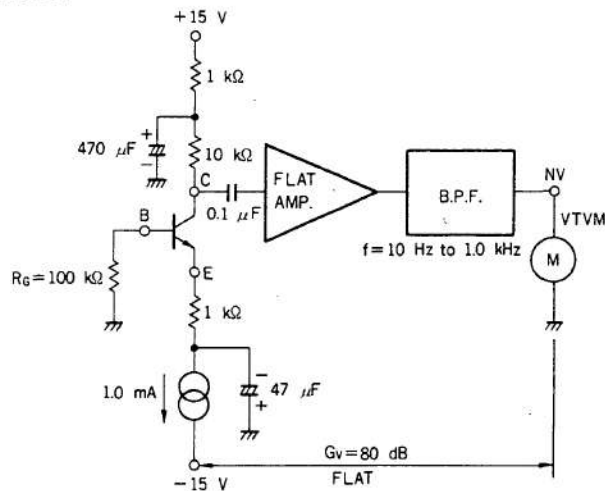
h_{FE} Test Conditions : $V_{CE}=6.0$ V, $I_C=1.0$ mA

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



INPUT AND OUTPUT CAPACITANCE
vs. REVERSE VOLTAGESMALL SIGNAL CURRENT GAIN vs.
DC CURRENT GAININPUT IMPEDANCE, VOLTAGE FEEDBACK
RATIO AND OUTPUT ADMITTANCE vs.
SMALL SIGNAL CURRENT GAINNORMALIZED h-PARAMETERS
vs. COLLECTOR CURRENTNORMALIZED h-PARAMETERS
vs. COLLECTOR TO EMITTER VOLTAGE e_n AND i_n vs. COLLECTOR CURRENT

NOISE VOLTAGE TEST CIRCUIT



$V_{CE} = 5$ V, $I_C = 1.0$ mA, $R_G = 100$ k Ω , $G_v = 80$ dB, FLAT ($f = 10$ Hz to 1.0 kHz)