

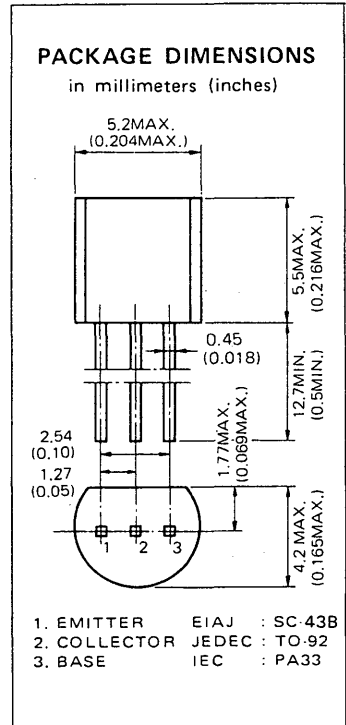
**DESCRIPTION** The 2SC1842 is designed for use in an AF amplifier and general purpose.

**FEATURES**

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

**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 . . . . . 250 mW  
 Maximum Voltages and Currents ( $T_a = 25 \text{ }^\circ\text{C}$ )  
 $V_{CBO}$  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



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

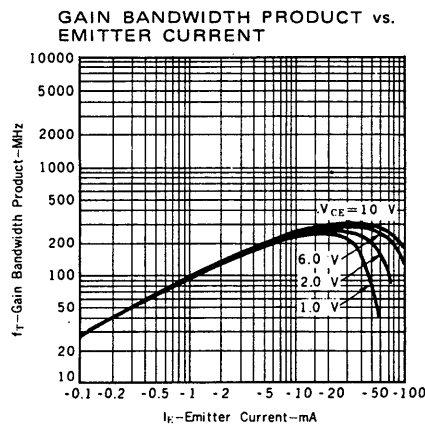
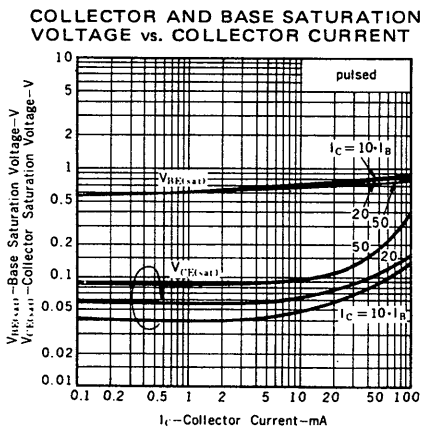
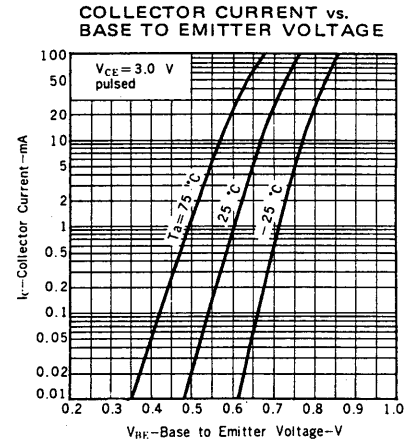
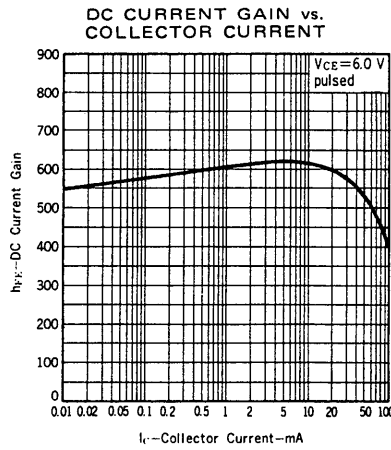
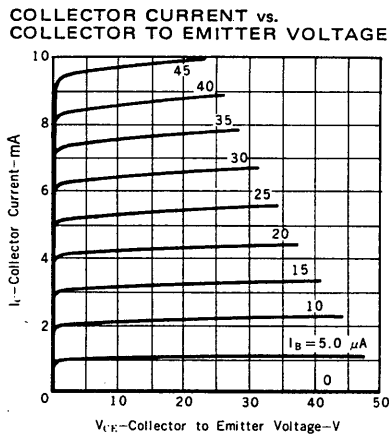
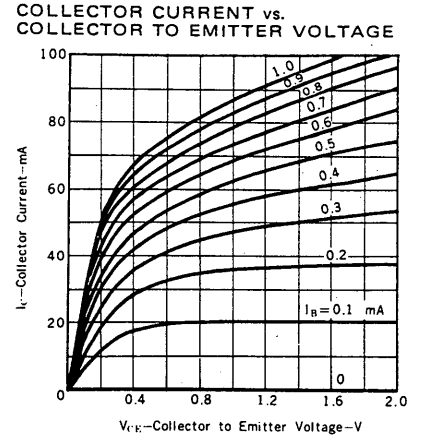
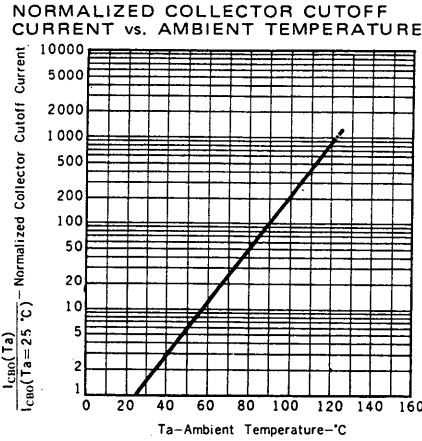
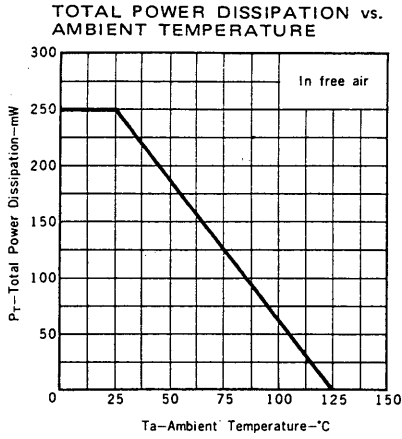
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}$	DC Current Gain	150	580		—	$V_{CE} = 6.0 \text{ V, } I_C = 0.1 \text{ mA}$
$h_{FE2}$	DC Current Gain	200	600	1200	—	$V_{CE} = 6.0 \text{ V, } I_C = 1.0 \text{ mA}$
$f_T$	Gain Bandwidth Product	150	250		MHz	$V_{CE} = 6.0 \text{ V, } I_E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

**Classification of  $h_{FE2}$**

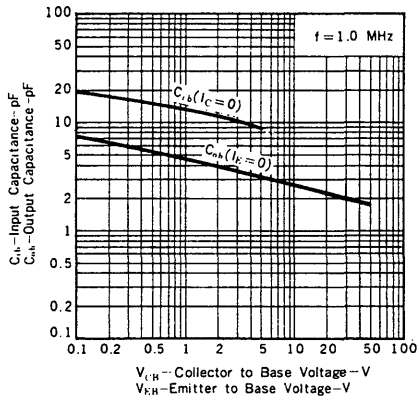
Rank	P	F	E	U
Range	200 - 400	300 - 600	400 - 800	600 - 1200

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

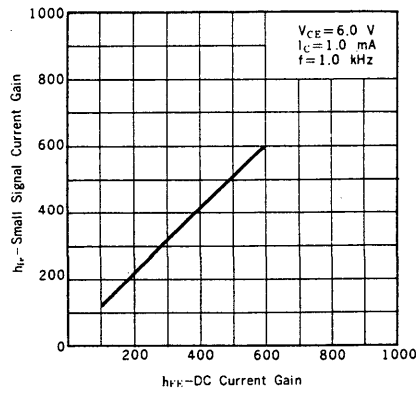
TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)



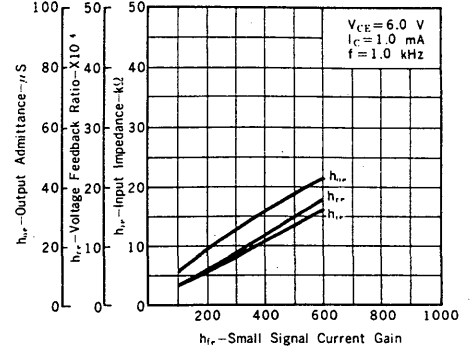
INPUT AND OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



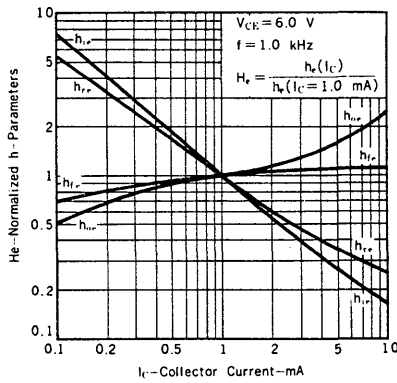
SMALL SIGNAL CURRENT GAIN vs. DC CURRENT GAIN



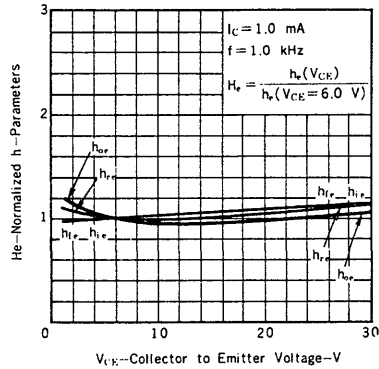
INPUT IMPEDANCE, VOLTAGE FEEDBACK RATIO AND OUTPUT ADMITTANCE vs. SMALL SIGNAL CURRENT GAIN



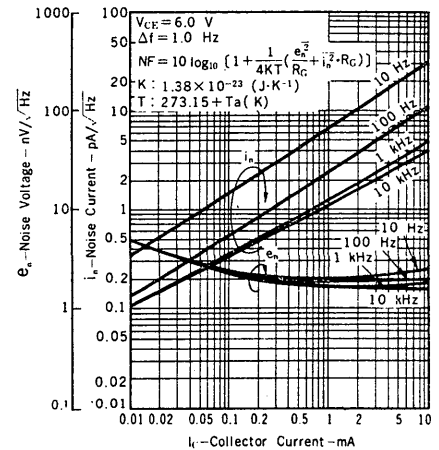
NORMALIZED h-PARAMETERS vs. COLLECTOR CURRENT



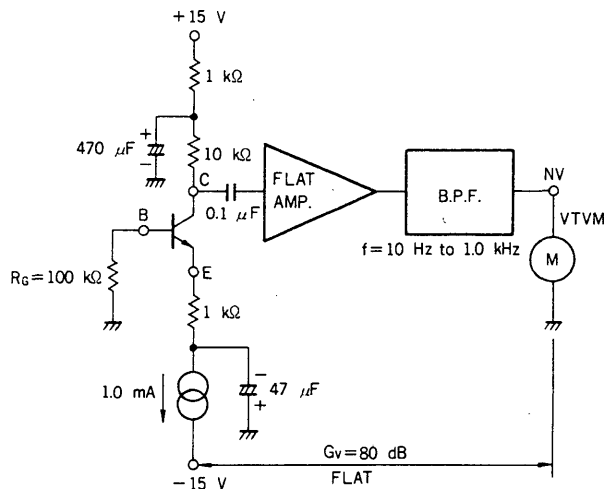
NORMALIZED h-PARAMETERS vs. COLLECTOR TO EMITTER VOLTAGE



e\_n AND i\_n vs. COLLECTOR CURRENT



NOISE VOLTAGE TEST CIRCUIT



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

This datasheet has been downloaded from:

[www.DatasheetCatalog.com](http://www.DatasheetCatalog.com)

Datasheets for electronic components.