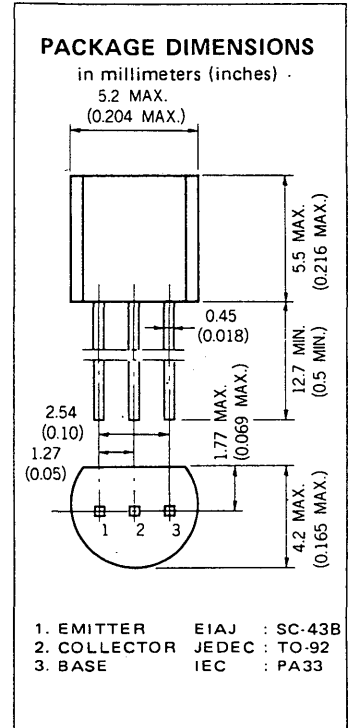


**DESCRIPTION** The 2SC1845 is the best for use as the middle range amplifier in Hi-Fi stereo control amplifiers, power amplifiers, and etc.

- 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.  $NV : 25 \text{ mV TYP. (See test Circuit.)}$

**ABSOLUTE MAXIMUM RATINGS**

- Maximum Temperatures
- Storage Temperature ..... -55 to +125 °C
  - Junction Temperature ..... +125 °C Maximum
- Maximum Power Dissipation ( $T_a = 25 \text{ °C}$ )
- Total Power Dissipation ..... 500 mW
- Maximum Voltages and Currents ( $T_a = 25 \text{ °C}$ )
- $V_{CBO}$  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 ( $T_a = 25 \text{ °C}$ )**

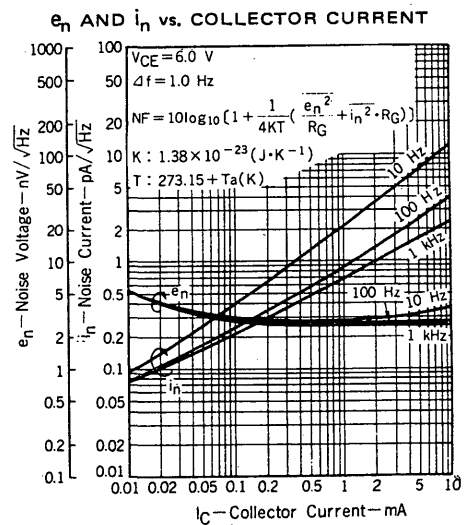
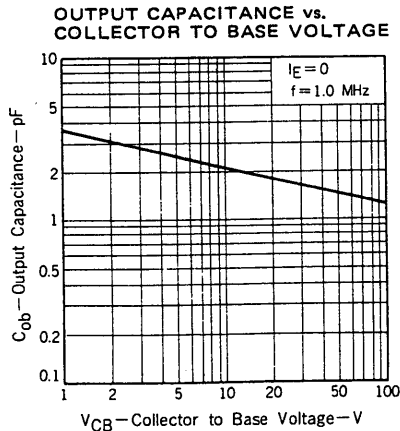
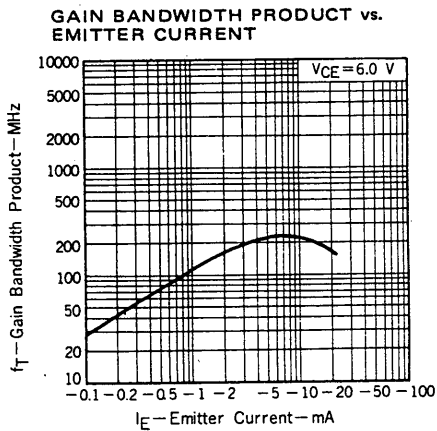
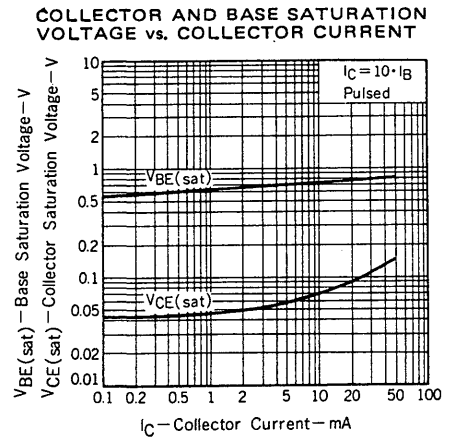
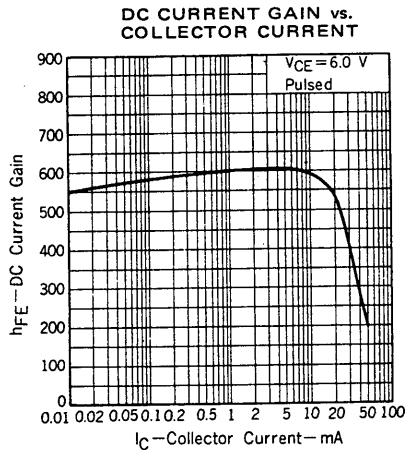
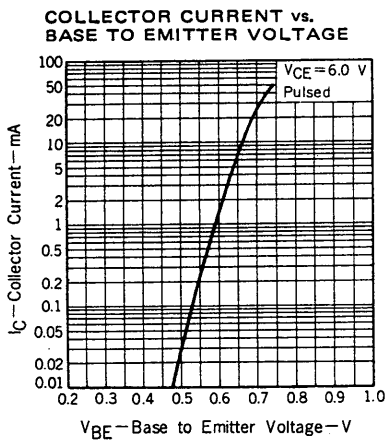
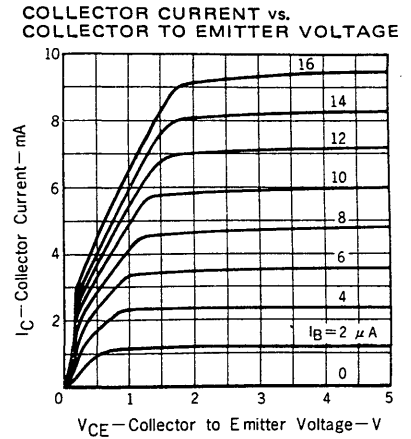
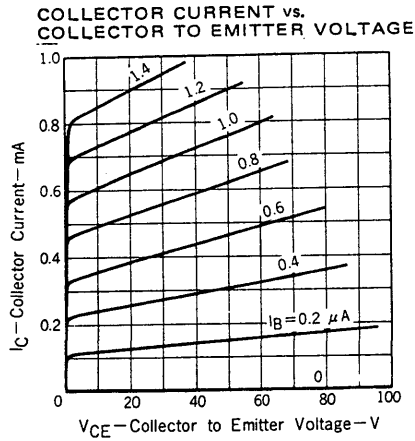
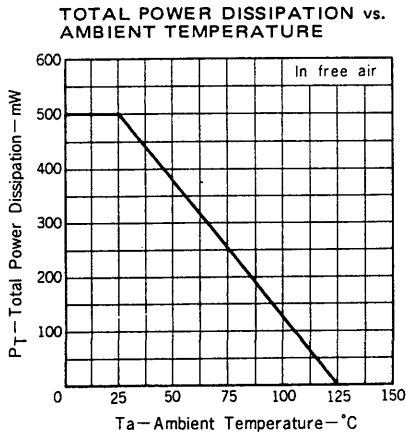
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$h_{FE1}$	DC Current Gain	150	580		—	$V_{CE} = 6.0 \text{ V, } I_C = 0.1 \text{ mA}$
$h_{FE2}$	DC Current Gain	200	600	1200	—	$V_{CE} = 6.0 \text{ V, } I_C = 1.0 \text{ mA}$
$f_T$	Gain Bandwidth Product	50	110		MHz	$V_{CE} = 6.0 \text{ V, } I_E = -1.0 \text{ mA}$
$C_{ob}$	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  $h_{FE2}$**

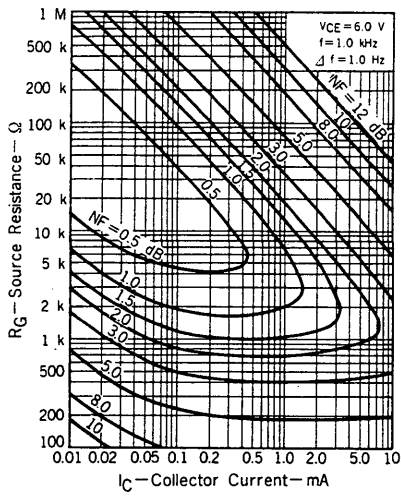
Rank	P	F	E	U
Range	200 - 400	300 - 600	400 - 800	600 - 1200

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

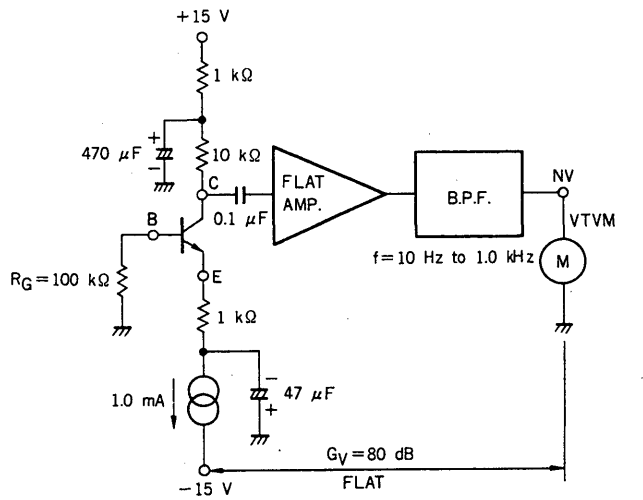
TYPICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)



NOISE FIGURE MAP.



NOISE VOLTAGE TEST CIRCUIT



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