NEC

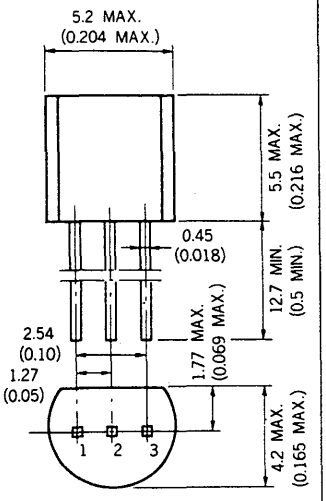
NPN SILICON TRANSISTOR
2SC1841

DESCRIPTION The 2SC1841 is designed for use in AF amplifier, driver and low speed switching.

FEATURES

- High Voltage V_{CEO} : 120 V
- High h_{FE} h_{FE} : 600 TYP. (V_{CE} = 6.0 V, I_C = 1.0 mA)

PACKAGE DIMENSIONS
in millimeters (inches)



1. EMITTER
2. COLLECTOR
3. BASE

EIAJ : SC-43B
JEDEC : TO-92
IEC : PA33

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

- Storage Temperature . . . . . −55 to +125 °C
- Junction Temperature . . . . . +125 °C Maximum

Maximum Power Dissipation (Ta = 25 °C)

- Total Power Dissipation . . . . . 500 mW

Maximum Voltages and Currents (Ta = 25 °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 (Ta = 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	50	110		MHz	V_{CE} = 6.0 V, I_E = −1.0 mA
C_{ob}	Output Capacitance		1.6	2.5	pF	V_{CB} = 30 V, I_E = 0, f = 1.0 MHz
I_{CBO}	Collector Cutoff Current			50	nA	V_{CB} = 120 V, I_E = 0
I_{EBO}	Emitter Cutoff Current			50	nA	V_{EB} = 5.0 V, I_C = 0
V_{BE}	Base to Emitter Voltage	550	590	650	mV	V_{CE} = 6.0 V, I_C = 1.0 mA
$V_{BE(sat)}$	Base Saturation Voltage		0.73	1.0	V	I_C = 10 mA, I_B = 1.0 mA
$V_{CE(sat)}$	Collector Saturation Voltage		70	300	mV	I_C = 10 mA, I_B = 1.0 mA

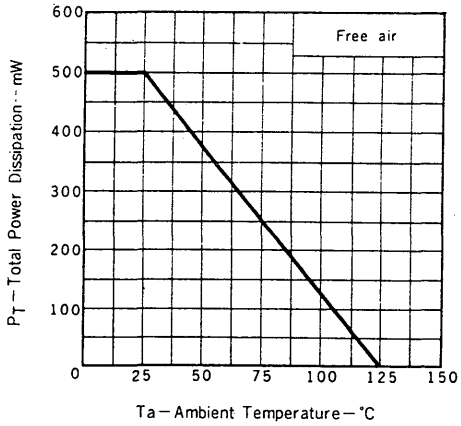
Classification of h_{FE2}

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

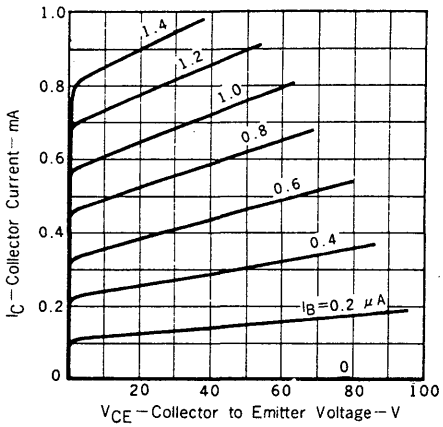
h_{FE} Test Conditions : V_{CE} = 6.0 V, I_C = 1.0 mA

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

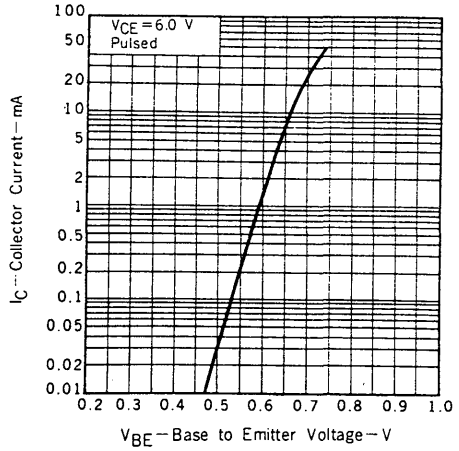
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



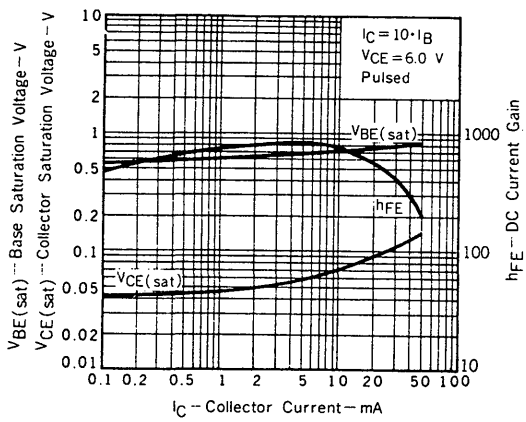
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



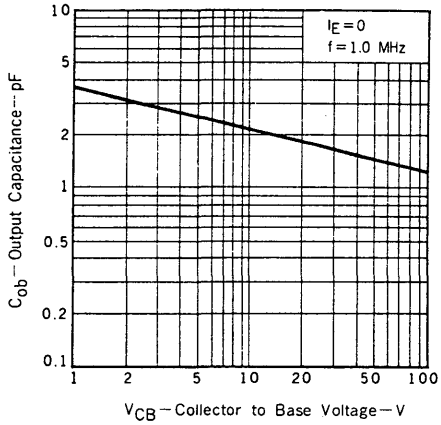
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



DC CURRENT GAIN, COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT