

PNP SILICON TRANSISTOR

2SA641

DESCRIPTION The 2SA641 is designed for use in AF amplifier and high-gain amplifier.

FEATURES

- High h_{FE}

h_{FE} ($I_C = -0.5$ mA, $V_{CE} = -3.0$ V) : 450 TYP.

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 -50 V

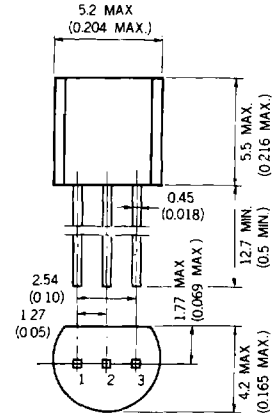
V_{CEO} Collector to Emitter Voltage -50 V

V_{EBO} Emitter to Base Voltage -5.0 V

I_C Collector Current -50 mA

I_B Base Current -10 mA

PACKAGE DIMENSIONS
in millimeters (inches)



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



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

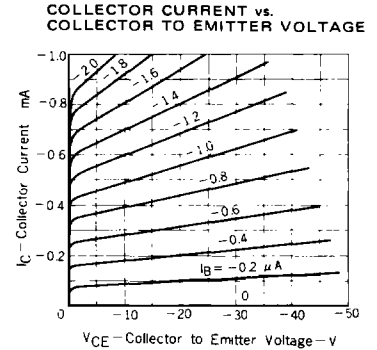
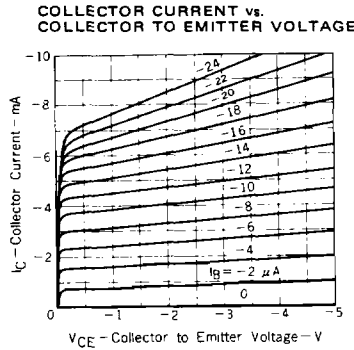
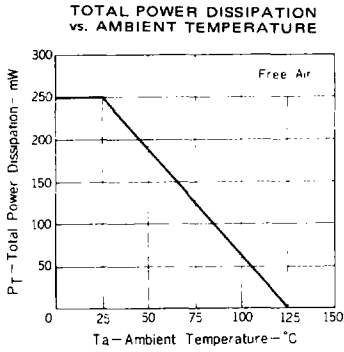
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE1}	DC Current Gain	190	430		-	$V_{CE} = -3.0$ V, $I_C = -0.1$ mA
h_{FE2}	DC Current Gain	225	450	1000	-	$V_{CE} = -3.0$ V, $I_C = -0.5$ mA
NF	Noise Figure			20	dB	$V_{CE} = -6.0$ V, $I_C = -0.3$ mA, $R_G = 10$ k Ω , $f = 100$ Hz
I_{CBO}	Collector Cutoff Current			-50	nA	$V_{CB} = -50$ V, $I_E = 0$
I_{CEO}	Collector Cutoff Current			-1.0	μ A	$V_{CE} = -40$ V, $I_B = 0$
I_{EBO}	Emitter Cutoff Current			-50	nA	$V_{EB} = -5.0$ V, $I_C = 0$
V_{BE}	Base to Emitter Voltage	-0.55	-0.59	-0.65	V	$V_{CE} = -3.0$ V, $I_C = -0.5$ mA
$V_{CE(sat)}$	Collector Saturation Voltage		-0.3	-0.5	V	$I_C = -30$ mA, $I_B = -3.0$ mA
$V_{BE(sat)}$	Base Saturation Voltage		-0.82	-1.0	V	$I_C = -30$ mA, $I_B = -3.0$ mA
f_T	Gain Bandwidth Product	50	100		MHz	$V_{CE} = -6.0$ V, $I_E = 1.0$ mA
C_{ob}	Collector to Base Capacitance		6.5	10	pF	$V_{CB} = -10$ V, $I_E = 0$, $f = 1.0$ MHz

Classification of h_{FE2}

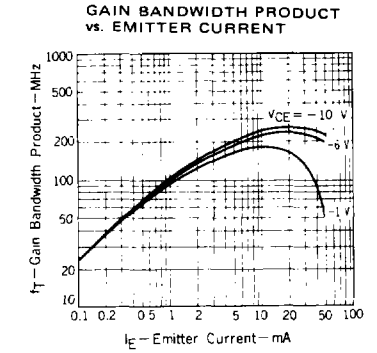
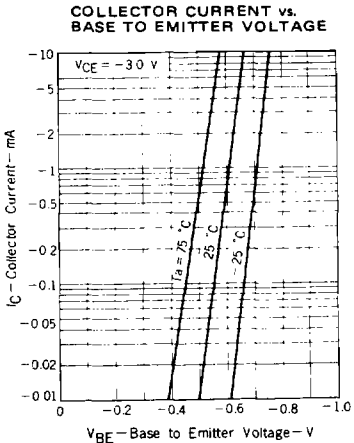
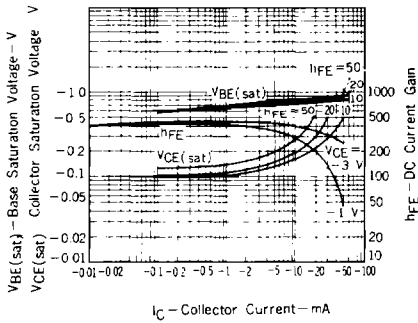
Rank	F	E	U
Range	225 - 450	350 - 700	500 - 1000

h_{FE} Test Conditions : $V_{CE} = -3.0$ V, $I_C = -0.5$ mA

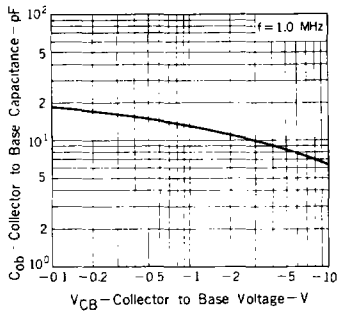
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)



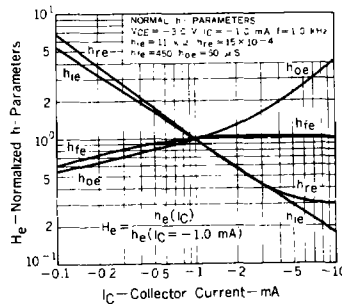
DC CURRENT GAIN, BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR TO BASE CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



NORMALIZED h-PARAMETERS vs. COLLECTOR CURRENT



NORMALIZED h-PARAMETERS vs. COLLECTOR TO EMITTER VOLTAGE

