

DESCRIPTION The 2SC945 is designed for use in driver stage of AF amplifier and low speed switching.

FEATURES

- High Voltage LV_{CEO} : 50 V MIN.
- Excellent h_{FE} Linearity h_{FE1} (0.1 mA)/ h_{FE2} (1.0 mA) : 0.92 TYP.

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 250 mW

Maximum Voltages and Currents (Ta = 25 °C)

V_{CBO} Collector to Base Voltage 60 V

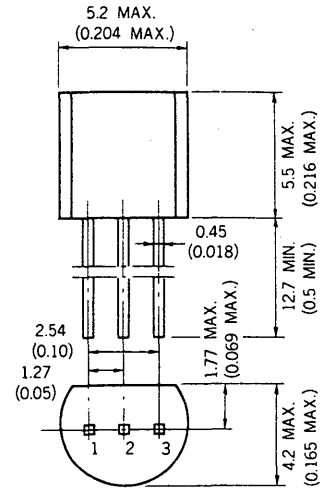
V_{CEO} Collector to Emitter Voltage 50 V

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 (Ta = 25 °C)

| SYMBOL | CHARACTERISTIC | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|----------------------|-------------------------------|------|------|------|------|---|
| h_{FE1} | DC Current Gain | 50 | 185 | | | V _{CE} =6.0 V, I _C =0.1 mA |
| h_{FE2} | DC Current Gain | 90 | 200 | 600 | | V _{CE} =6.0 V, I _C =1.0 mA |
| NF | Noise Figure | | 0.8 | 15 | dB | V _{CE} =6.0 V, I _C =0.1 mA, R _G =2.0 kΩ, f=1.0 kHz |
| f _T | Gain Bandwidth Product | 150 | 250 | 450 | MHz | V _{CE} =6.0 V, I _E =-10 mA |
| C _{ob} | Collector to Base Capacitance | | 3.0 | 4.0 | pF | V _{CB} =6.0 V, I _E =0, f=1.0 MHz |
| I _{CBO} | Collector Cutoff Current | | | 100 | nA | V _{CB} =60 V, I _E =0 |
| I _{EBO} | Emitter Cutoff Current | | | 100 | nA | V _{EB} =5.0 V, I _C =0 |
| V _{BE} | Base to Emitter Voltage | 0.55 | 0.62 | 0.65 | V | V _{CE} =6.0 V, I _C =1.0 mA |
| V _{CE(sat)} | Collector Saturation Voltage | | 0.15 | 0.3 | V | I _C =100 mA, I _B =10 mA |
| V _{BE(sat)} | Base Saturation Voltage | | 0.86 | 1.0 | V | I _C =100 mA, I _B =10 mA |

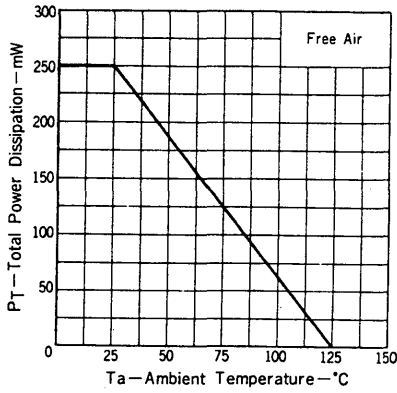
Classification of h_{FE2}

| Rank | R | Q | P | K |
|-------|----------|-----------|-----------|-----------|
| Range | 90 - 180 | 135 - 270 | 200 - 400 | 300 - 600 |

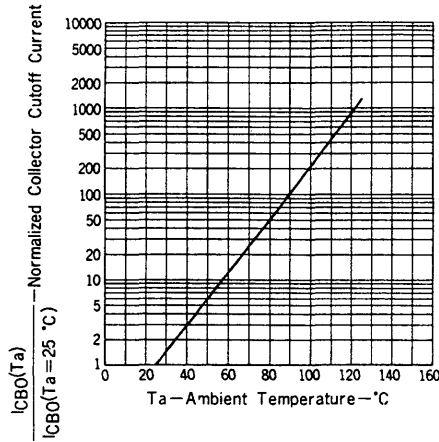
h_{FE2} Test Conditions : V_{CE} = 6.0 V, I_C = 1.0 mA

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

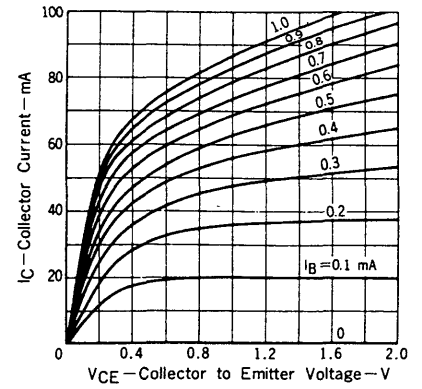
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



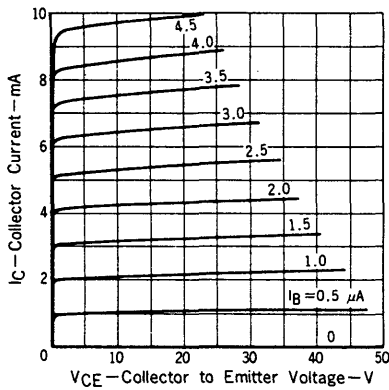
NORMALIZED COLLECTOR CUTOFF CURRENT vs. AMBIENT TEMPERATURE



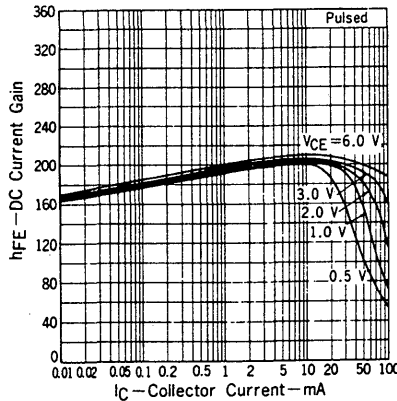
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



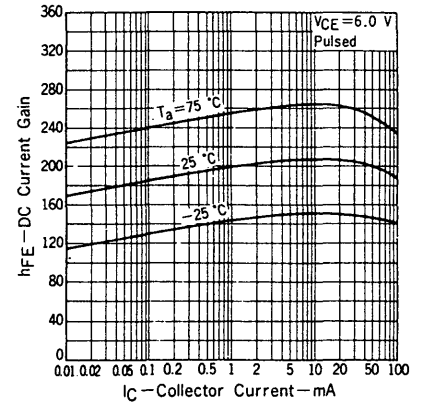
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



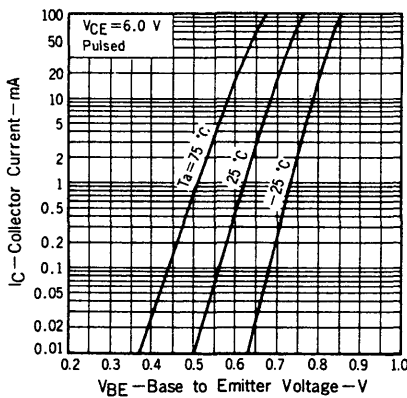
DC CURRENT GAIN vs. COLLECTOR CURRENT



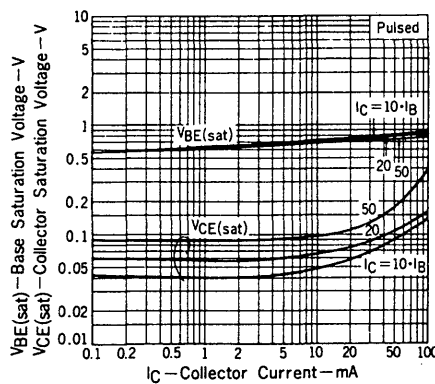
DC CURRENT GAIN vs. COLLECTOR CURRENT



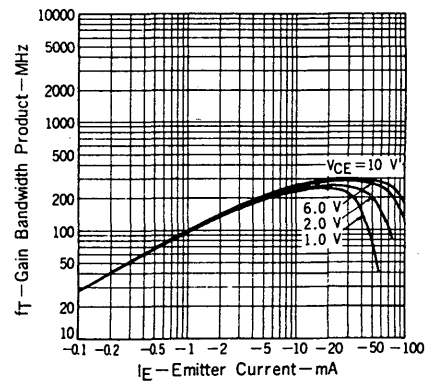
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



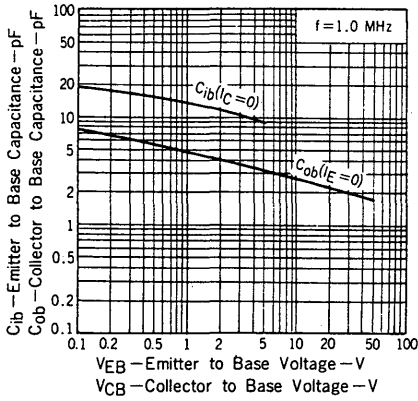
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



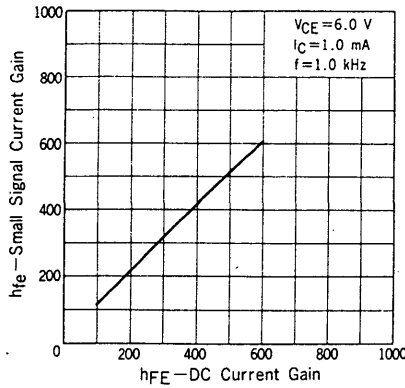
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



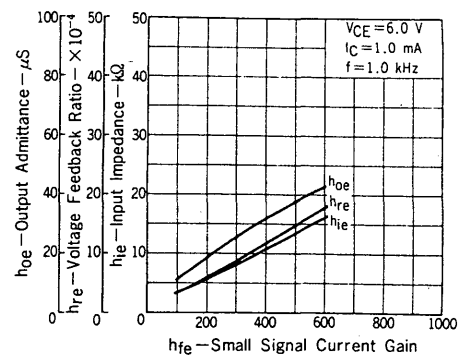
EMITTER TO BASE AND COLLECTOR TO BASE CAPACITANCE vs. REVERSE VOLTAGE



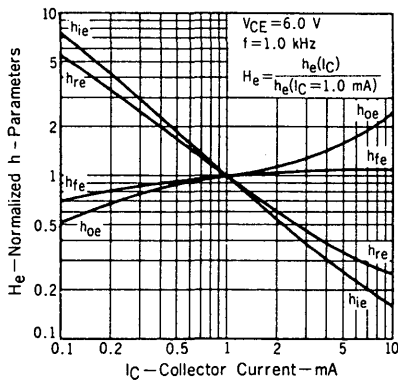
SMALL SIGNAL CURRENT GAIN vs. DC CURRENT GAIN



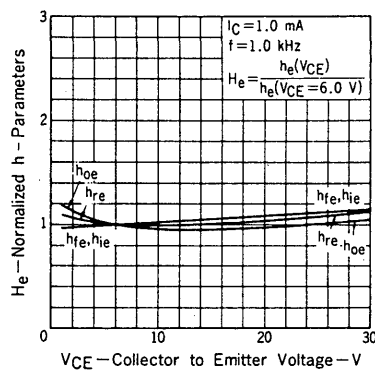
INPUT IMPEDANCE, VOLTAGE FEEDBACK RATIO AND OUTPUT ADMITTANCE vs. SMALL SIGNAL CURRENT GAIN



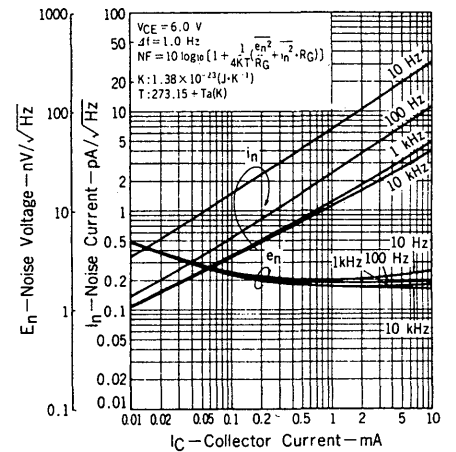
NORMALIZED h-PARAMETERS vs. COLLECTOR CURRENT



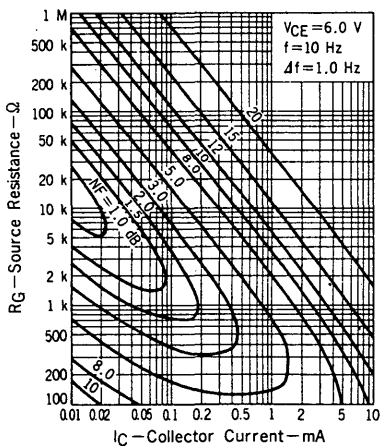
NORMALIZED h-PARAMETERS vs. COLLECTOR TO EMITTER VOLTAGE



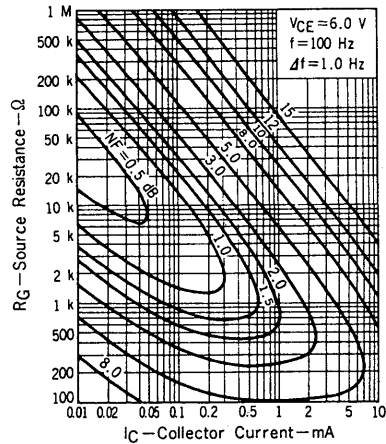
En AND In vs. COLLECTOR CURRENT



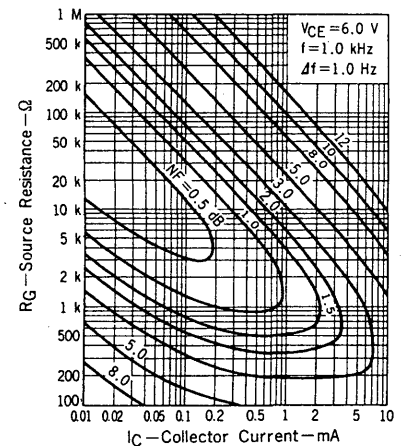
NOISE FIGURE MAP 1



NOISE FIGURE MAP 2



NOISE FIGURE MAP 3



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www.datasheetcatalog.com

Datasheets for electronics components.