

NPN SILICON TRANSISTOR

JE9016

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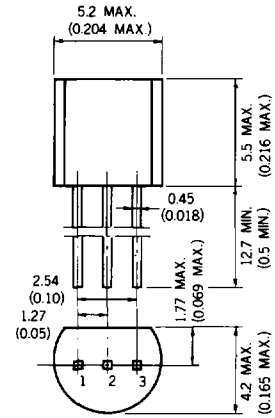
DESCRIPTION The JE9016 is designed for use in AM converter and FM RF amplifier of low noise.

FEATURES • High total power dissipation. (P_T : 400 mW)

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
- Storage Temperature -55 to +150 °C
 - Junction Temperature +150 °C Maximum
- Maximum Power Dissipation ($T_a = 25$ °C)
- Total Power Dissipation 400 mW
- Maximum Voltages and Currents ($T_a = 25$ °C)
- V_{CB0} Collector to Base Voltage 30 V
 - V_{CEO} Collector to Emitter Voltage 20 V
 - V_{EBO} Emitter to Base Voltage 4.0 V
 - I_C Collector Current 25 mA
 - I_B Base Current 5.0 mA

PACKAGE DIMENSIONS
in millimeters (inches)



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

ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE}	DC Current Gain	28	90	198	—	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA
C_{ob}	Collector to Base Capacitance		1.2	1.6	pF	$V_{CB} = 10$ V, $I_E = 0$, $f = 1.0$ MHz
NF	Noise Figure		3.0	5.0	dB	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA, $R_G = 50$ Ω , $f = 100$ MHz
f_T	Gain Bandwidth Product	400	620		MHz	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA
I_{CB0}	Collector Cutoff Current			100	nA	$V_{CB} = 30$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			100	nA	$V_{EB} = 4.0$ V, $I_C = 0$
BV_{CB0}	Collector to Base Breakdown Voltage	30			V	$I_C = 0.1$ mA, $I_E = 0$
BV_{CEO}	Collector to Emitter Breakdown Voltage	20			V	$I_C = 1.0$ mA, $I_B = 0$
BV_{EBO}	Emitter to Base Breakdown Voltage	4.0			V	$I_E = 0.1$ mA, $I_C = 0$
V_{BE}	Base to Emitter Voltage		0.72		V	$V_{CE} = 5.0$ V, $I_C = 1.0$ mA
$V_{CE(sat)}$	Collector Saturation Voltage		0.1	0.3	V	$I_C = 10$ mA, $I_B = 1.0$ mA

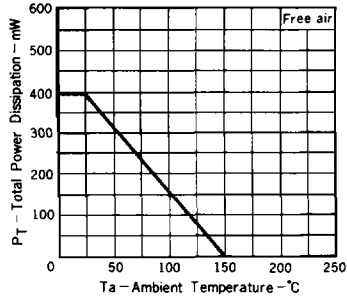
Classification of h_{FE}

Rank	D	E	F	G	H	I
Range	28 – 45	39 – 60	54 – 80	72 – 108	97 – 146	132 – 198

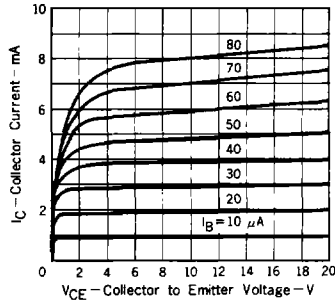
h_{FE} Test Conditions : $V_{CE} = 5.0$ V, $I_C = 1.0$ mA

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

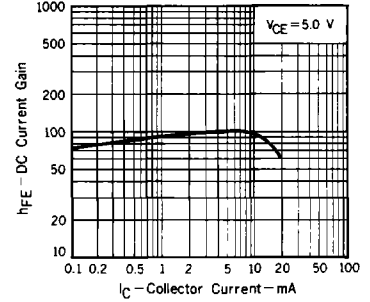
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



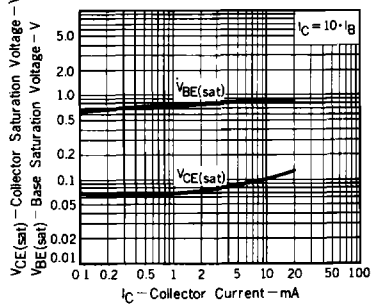
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



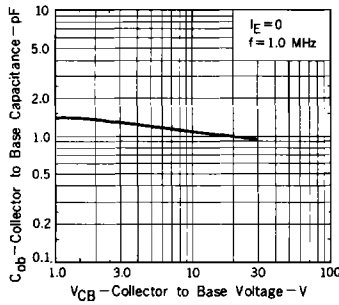
DC CURRENT GAIN vs. COLLECTOR CURRENT



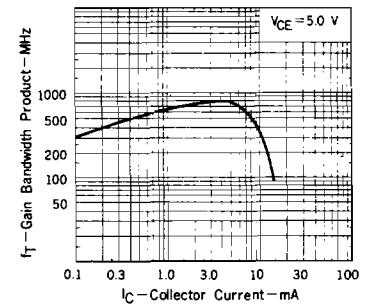
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR TO BASE CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

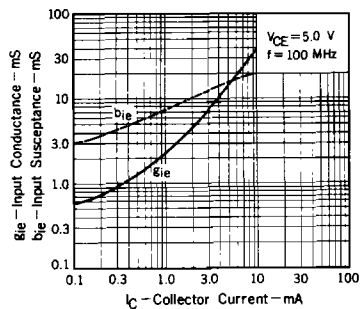


GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT

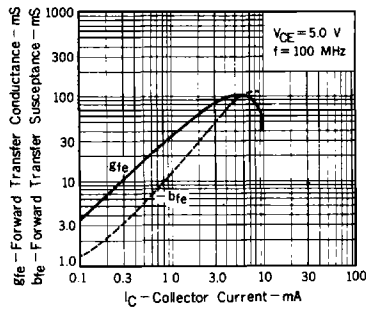


TYPICAL SMALL SIGNAL "y" PARAMETERS COMMON EMITTER

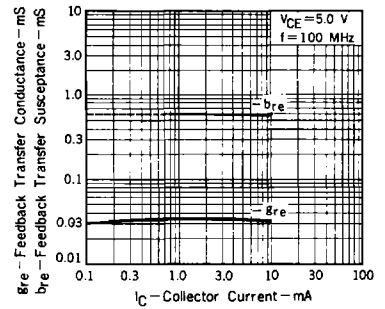
INPUT ADMITTANCE vs. COLLECTOR CURRENT



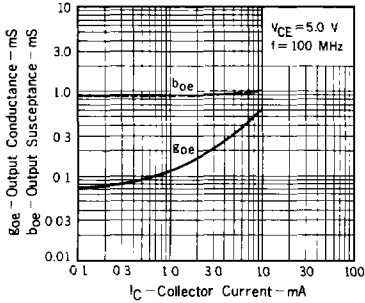
FORWARD TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



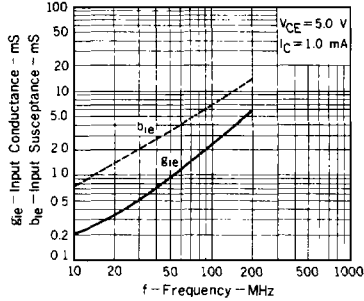
FEEDBACK TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



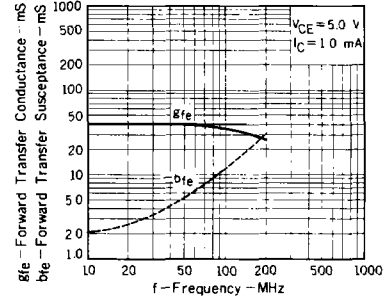
OUTPUT ADMITTANCE vs. COLLECTOR CURRENT



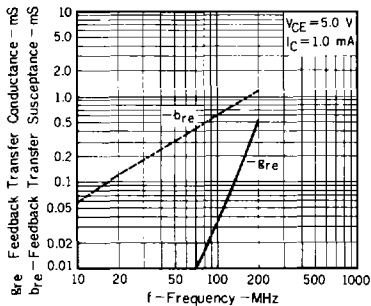
INPUT ADMITTANCE vs. FREQUENCY



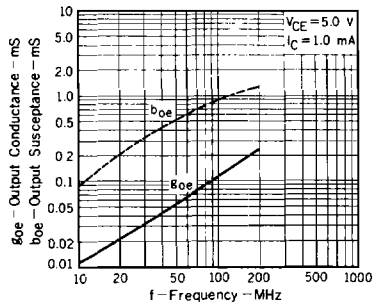
FORWARD TRANSFER ADMITTANCE vs. FREQUENCY



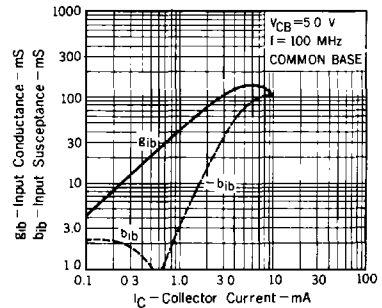
FEEDBACK TRANSFER ADMITTANCE vs. FREQUENCY



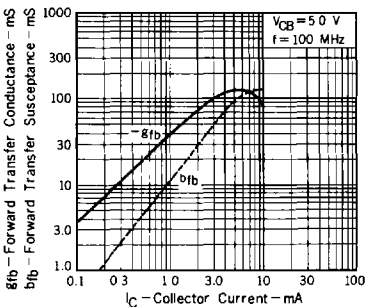
OUTPUT ADMITTANCE vs. FREQUENCY



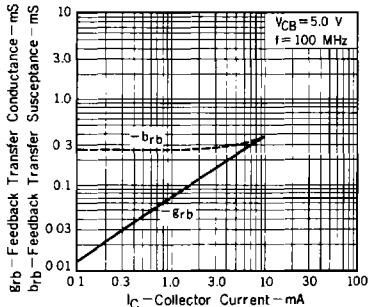
INPUT ADMITTANCE vs. COLLECTOR CURRENT



FORWARD TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



FEEDBACK TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



NOISE FIGURE vs. COLLECTOR CURRENT

