

# Transistors

## 2SC9016

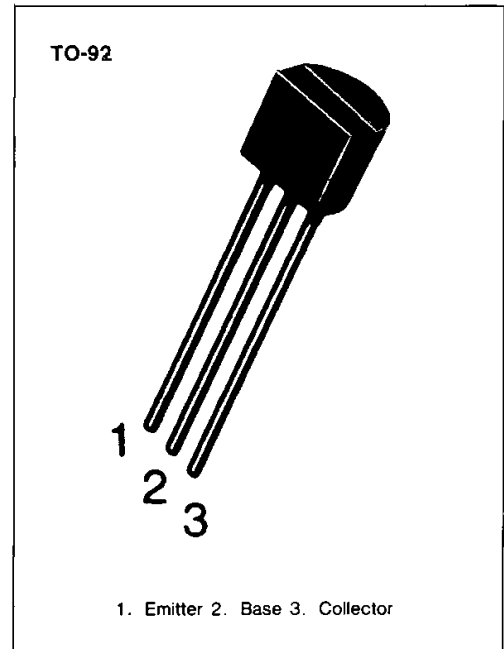


### AM CONVERTER, FM/RF AMPLIFIER OF LOW NOISE.

- High total power dissipation. (PT=400mW)

### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current	$I_C$	25	mA
Collector Dissipation	$P_C$	400	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~150	$^\circ\text{C}$



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

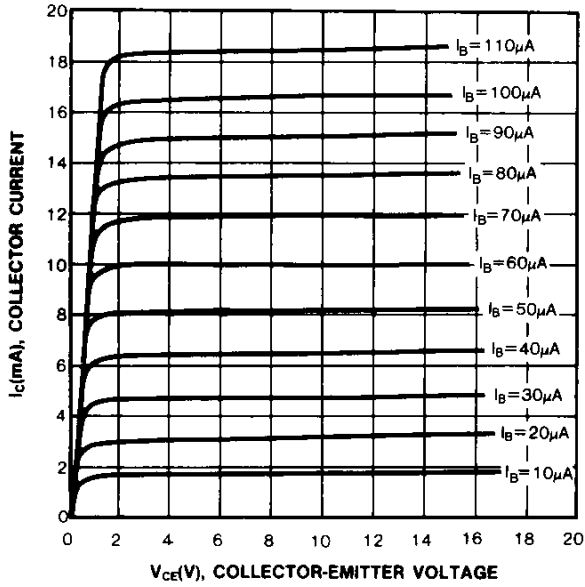
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	30			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	20			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	4			V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 30\text{V}, I_E = 0$			100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 3\text{V}, I_C = 0$			100	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	28	90	198	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.1	0.3	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$		0.72		V
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$		1.2	1.6	pF
Current Gain-Bandwidth Product	$f_T$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	400	620		MHz
Noise Figure	NF	$V_{CE} = 5\text{V}, I_C = 1.0\text{mA}$ $f = 100\text{MHz}, R_s = 50\Omega$		3.0	5.0	dB

### $h_{FE}$ CLASSIFICATION

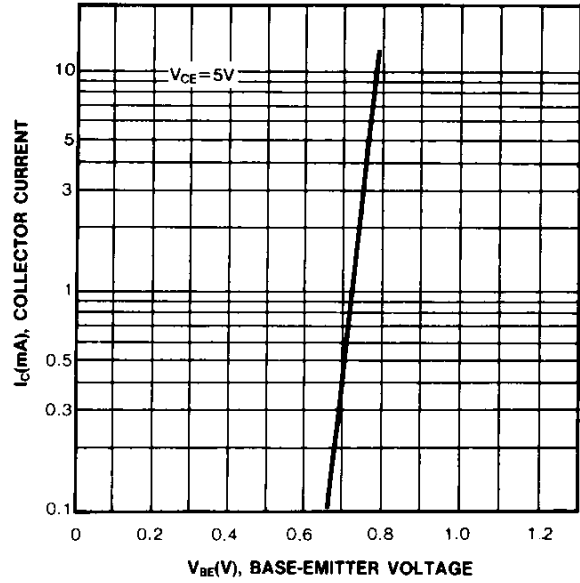
Classification	D	E	F	G	H	I
$h_{FE}$	28-45	39-60	54-80	72-108	97-146	132-198



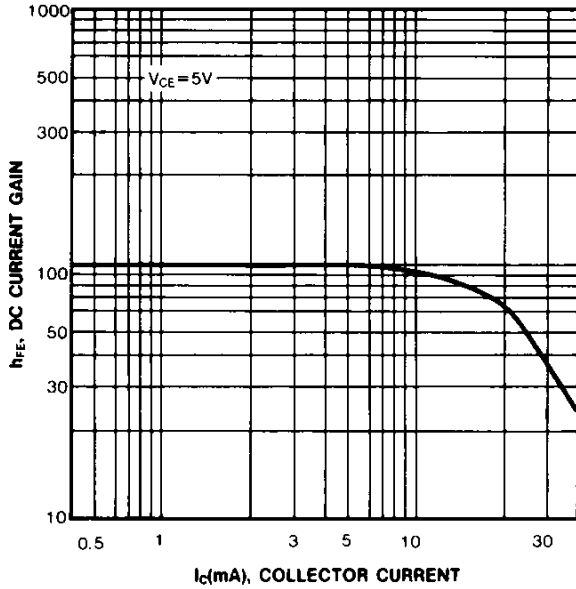
STATIC CHARACTERISTIC



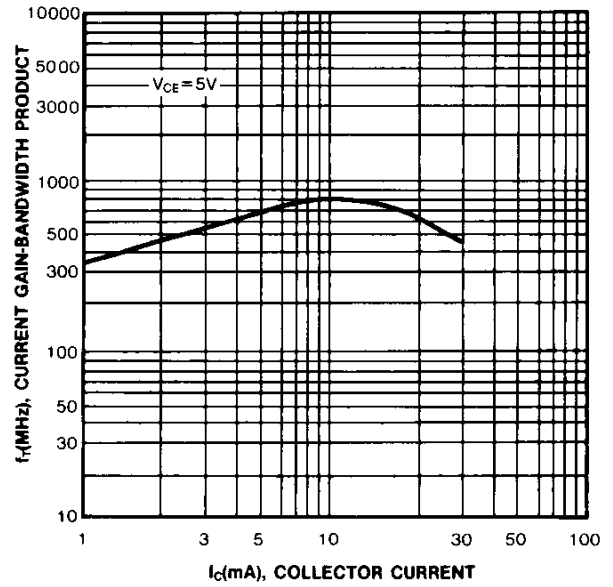
BASE-EMITTER ON VOLTAGE



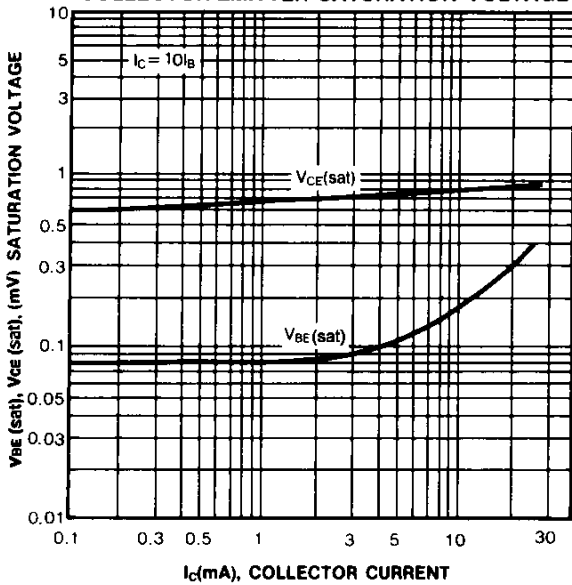
DC CURRENT GAIN



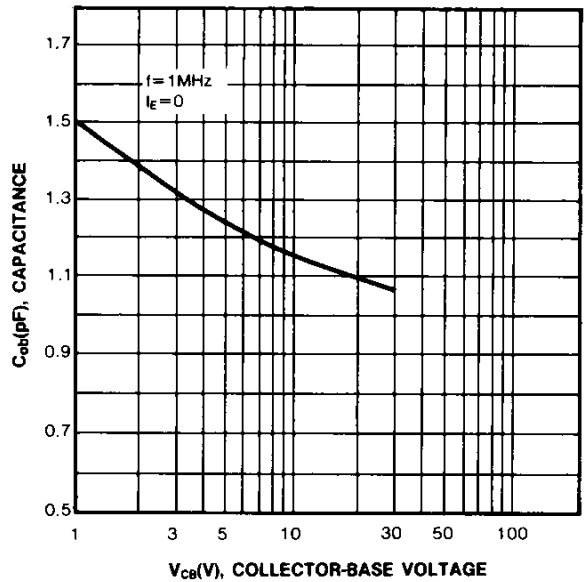
CURRENT GAIN-BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE



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