

Transistors

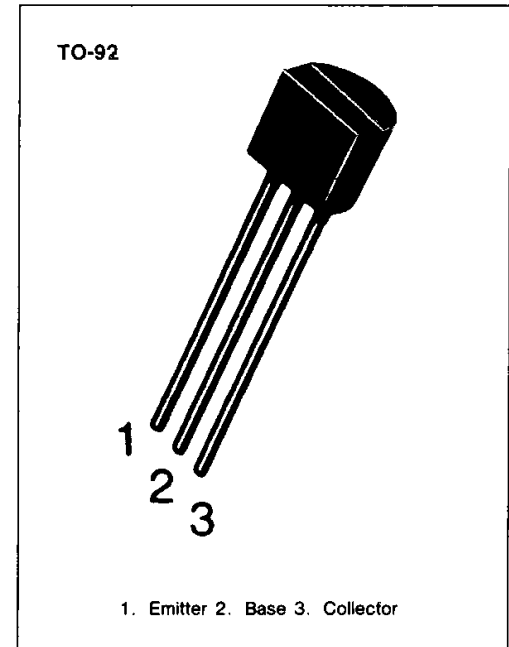
2SC9011



**AM CONVERTER, AM/FM IF AMPLIFIER
GENERAL PURPOSE TRANSISTOR**

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	30	mA
Collector Dissipation	P_C	400	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



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

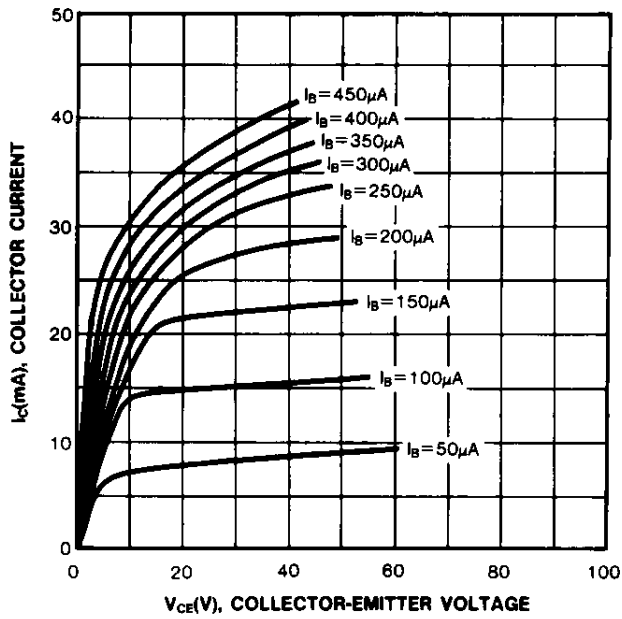
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	50			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1\text{mA}$, $I_B = 0$	30			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = 100\mu\text{A}$, $I_C = 0$	5			V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50\text{V}$, $I_E = 0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}$, $I_C = 0$			100	nA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	28	90	198	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$, $I_B = 1\text{mA}$		0.08	0.3	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	0.65	0.7	0.75	V
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$ $f = 1\text{MHz}$		1.5		pF
Current Gain-Bandwidth Product	f_T	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	150	370		MHz
Noise Figure	NF	$V_{CE} = 5\text{V}$, $I_C = 1.0\text{mA}$ $f = 1\text{MHz}$, $R_s = 500\Omega$		2.0	4.0	dB

h_{FE} CLASSIFICATION

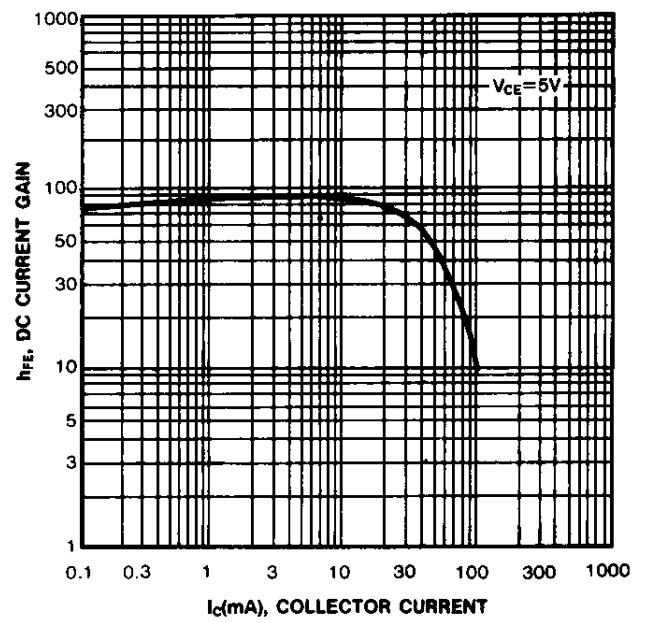
Classification	D	E	F	G	H	I
h_{FE}	28-45	39-60	54-80	72-108	97-146	132-198



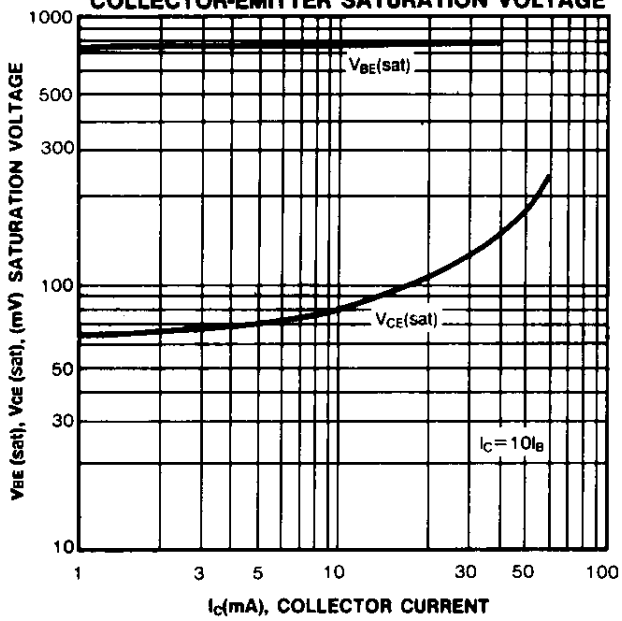
STATIC CHARACTERISTIC



DC CURRENT GAIN



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



CURRENT GAIN-BANDWIDTH PRODUCT

