

NPN Plastic-Encapsulate Transistors

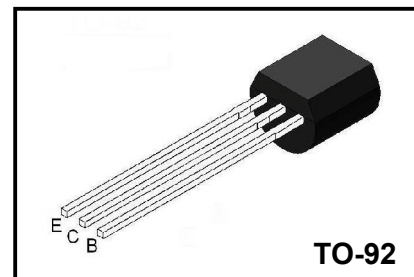
Audio Frequency Amplifier Applications

Low Noise Amplifier Applications

➤High voltage and high current: $V_{CEO} = 50\text{ V (min)}$,

$I_C = 150\text{ mA (max)}$

➤Complementary to 2SA1015.



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	UNIT
Collector-Base Voltage	BV_{CBO}	60	V
Collector-Emitter Voltage	BV_{CEO}	50	V
Emitter-Base Voltage	BV_{EBO}	5	V
Collector Current	I_C	150	mA
Collector Power Dissipation	P_D	400	mW
Junction Temperature Storage Temperature	T_j 、 T_{stg}	-55~+150	°C

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	60			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{mA}$, $I_B = 0$	50			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu\text{A}$, $I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 50\text{V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{V}$, $I_C = 0$			0.1	μA
DC current gain	h_{FE1}	$V_{CE} = 6\text{V}$, $I_C = 2\text{mA}$	70		700	
	h_{FE2}	$V_{CE} = 6\text{V}$, $I_C = 150\text{mA}$	25			
Collector-emitter saturation voltage	V_{CESAT}	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$			0.3	V
base -emitter saturation voltage	V_{BESAT}	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$			1.1	V
Transition frequency	f_T	$V_{CE} = 10\text{V}$, $I_B = 1\text{mA}$	80			MHz

hFE1 Classification

Classification	O	Y	GR	BL
hFE	70-140	120-240	200-400	350-700

Typical Characteristics

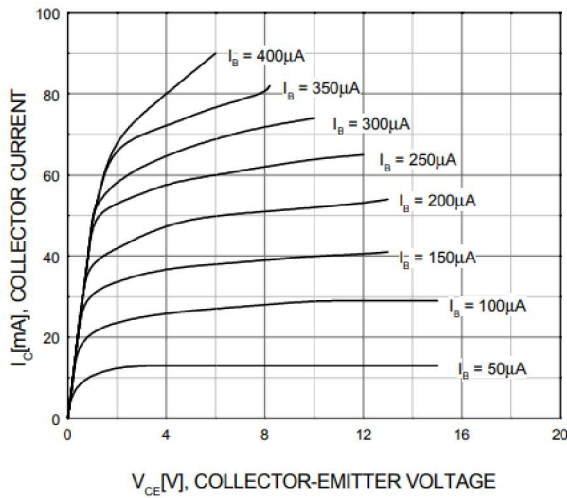


Fig.1 Static characteristics

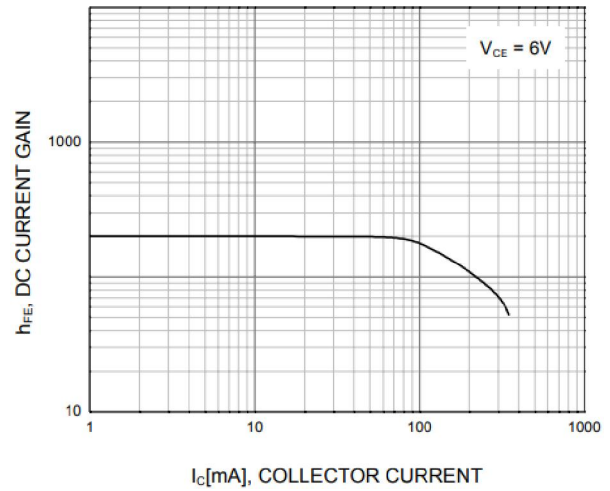


Fig.2 DC Current Gain

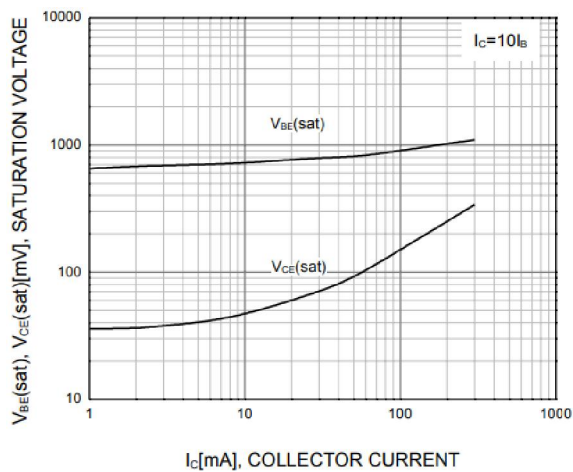


Fig.3 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

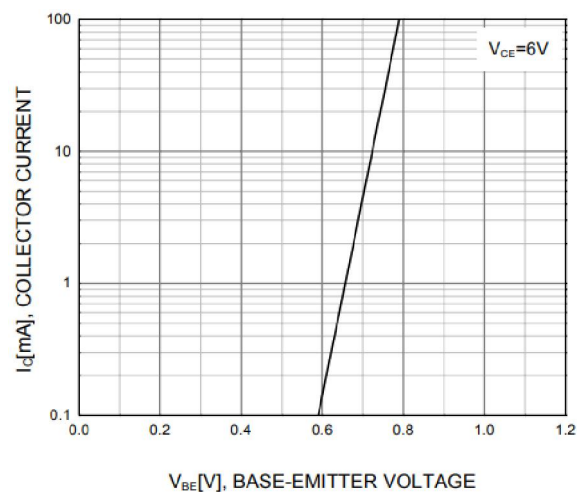


Fig.4 Base-Emitter on voltage

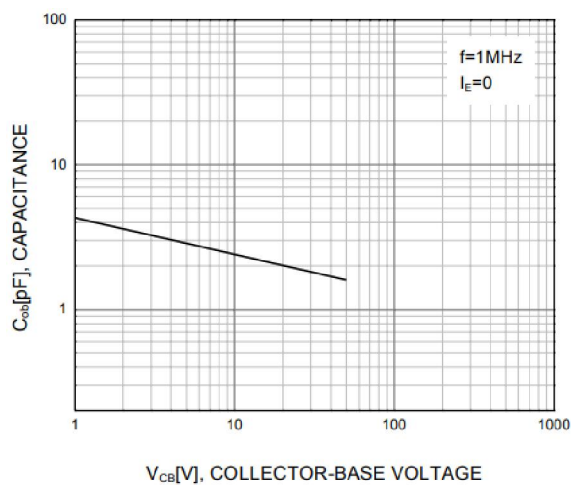


Fig.5 Collector Output Capacitance

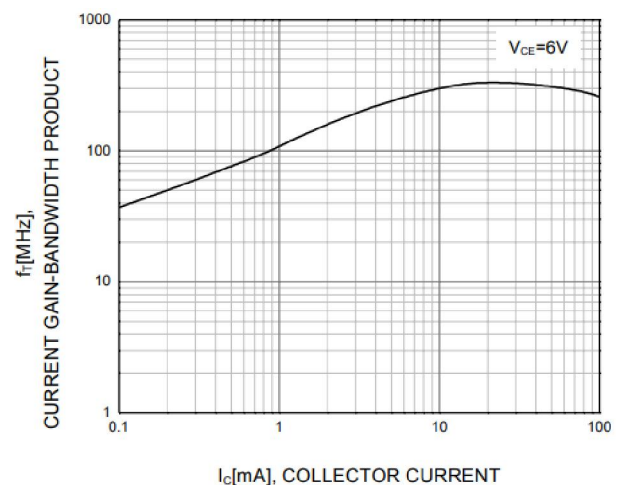
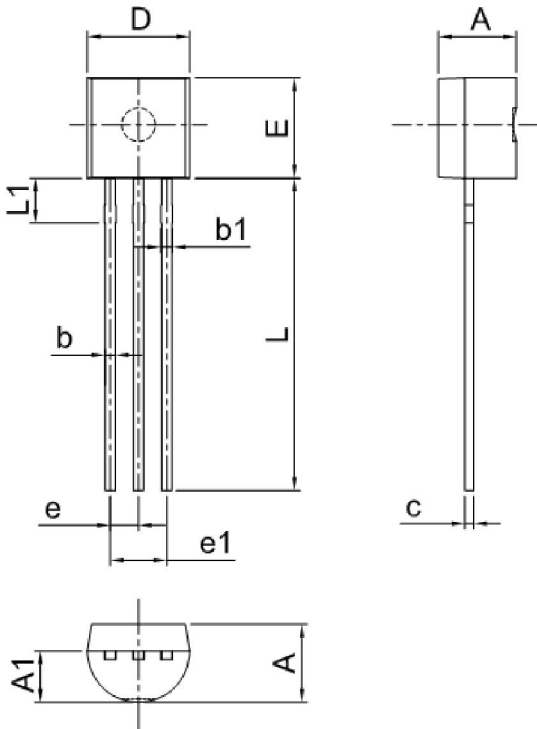


Figure 6. Current Gain Bandwidth Product

PackageDimensions

TO-92

	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.70	0.130	0.146
A1	2.30	2.70	0.091	0.106
b	0.40	0.50	0.016	0.020
b1	0.50	0.70	0.020	0.028
c	0.35	0.45	0.014	0.018
D	4.45	4.70	0.175	0.185
E	4.40	4.65	0.173	0.183
e	1.17	1.37	0.046	0.054
e1	2.34	2.64	0.092	0.104
L	13.50	14.50	0.531	0.571
L1	1.80	2.20	0.071	0.087

Product Specification Classification

Part Number	Package	Marking	Pack
2SC1815	TO-92	2SC1815 XXXXX	2000PCS/box