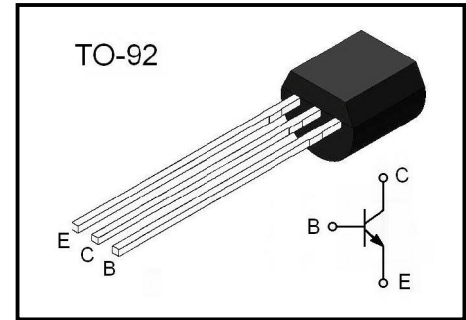


**NPN Plastic-Encapsulate Transistors**

**Audio Frequency Amplifier Applications**

**Low Noise Amplifier Applications**

- High voltage and high current:  $V_{CE0} = 50\text{ V (min)}$ ,  
 $I_C = 150\text{ mA (max)}$
- 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

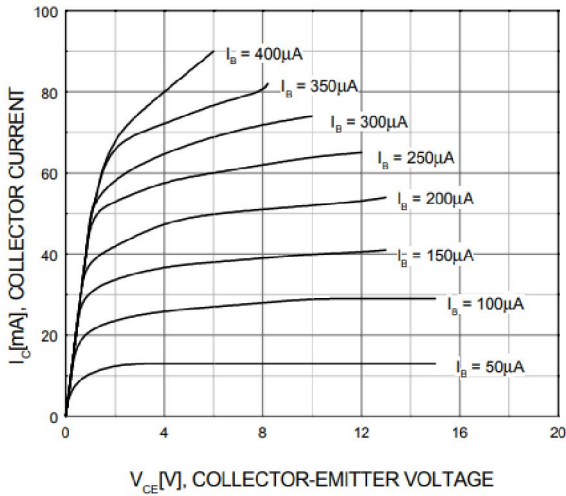
**Electrical Characteristics (Ta=25°C)**

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	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$			0.1	$\mu\text{A}$
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

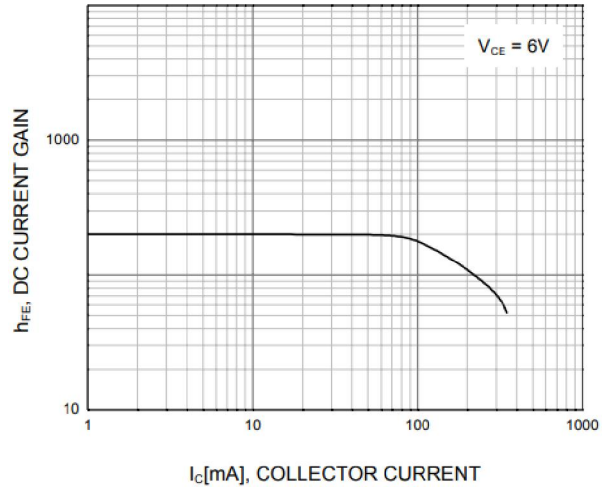
**hFE1 Classification**

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

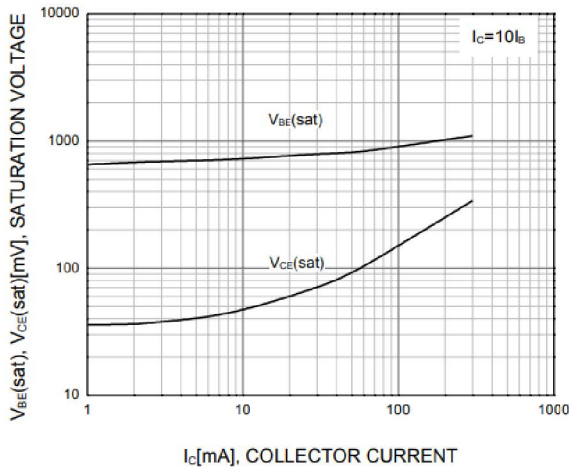
Typical Characteristics



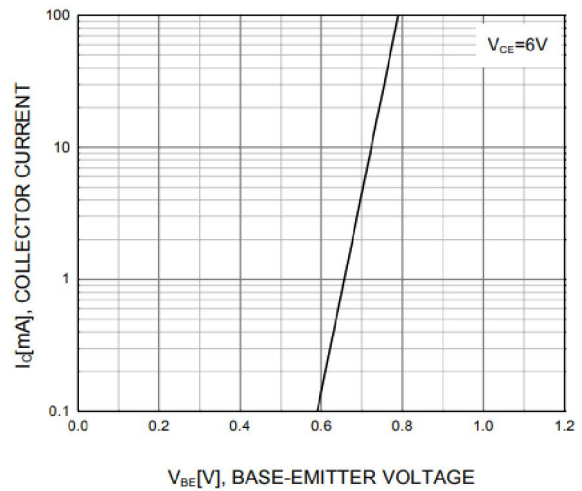
**Fig.1 Static characteristics**



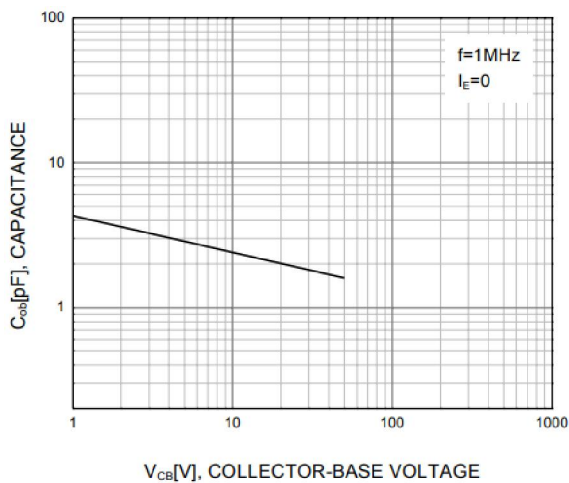
**Fig.2 DC Current Gain**



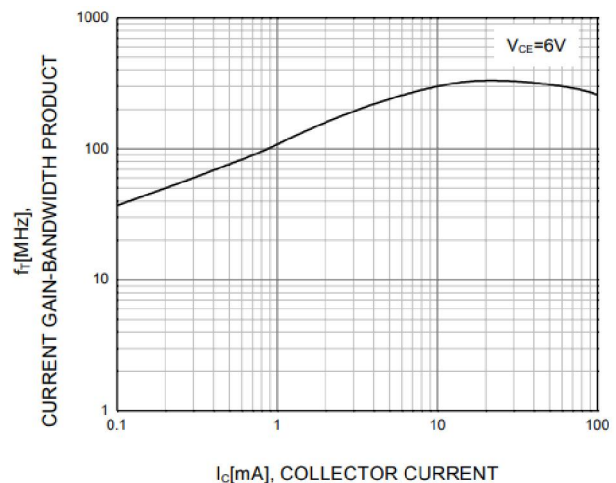
**Fig.3 Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Fig.4 Base-Emitter on voltage**



**Fig.5 Collector Output Capacitance**



**Figure 6. Current Gain Bandwidth Product**

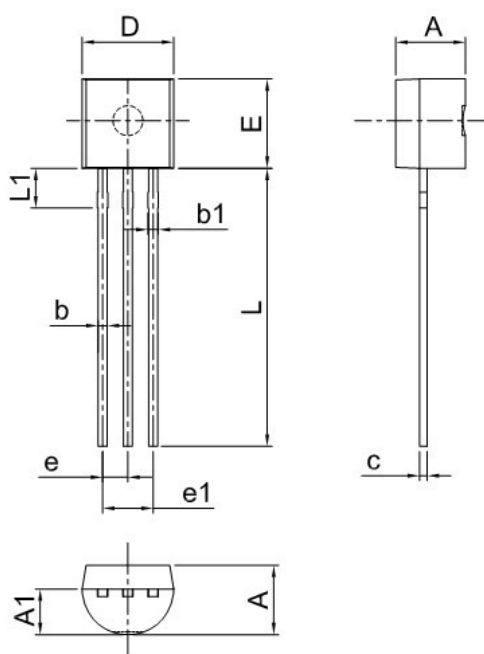
**Ordering information**

Package	Packing Description	Base Quantity
TO-92	Bulk	1000pcs/Bag
	Tape	2000pcs/Box

**Package Dimensions**

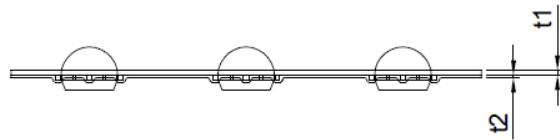
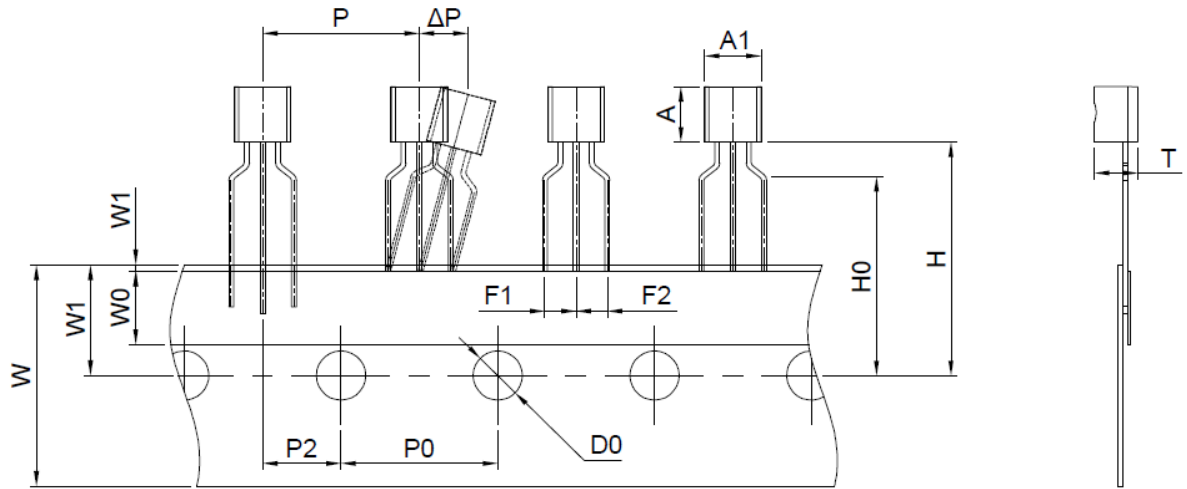
**TO-92**

Dim	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

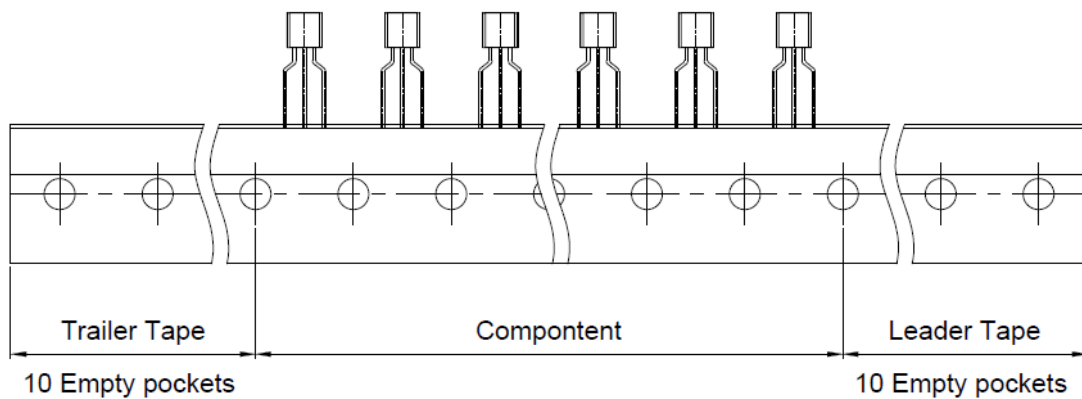


**Taping Dimensions**

**TO-92**



Dimensions are in millimeter								
A	A1	T	P	P0	P2	F1	F2	W
4.6	4.6	3.5	12.7	12.7	6.35	2.54	2.54	18.0
W0	W1	W2	H	H0	D0	t1	T2	ΔP
6.0	9.0	1.0Max	19.0	18.0	4.0	0.4	0.2	0



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