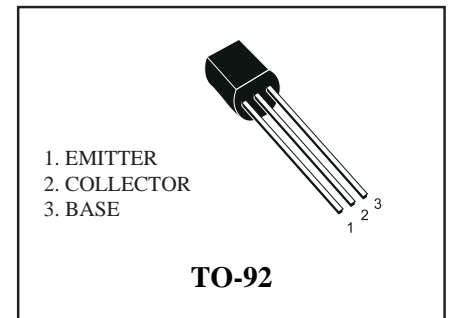


### NPN Plastic-Encapsulate Transistor

**(Pb)** Lead(Pb)-Free

#### FEATURES :

- power switching applications



#### MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V <sub>CB0</sub>	700	V
Collector-Emitter Voltage	V <sub>CEO</sub>	400	V
Emitter-Base Voltage	V <sub>EBO</sub>	9	V
Collector Current -Continuous	I <sub>C</sub>	1.5	A
Collector Power Dissipation	P <sub>C</sub>	0.9	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

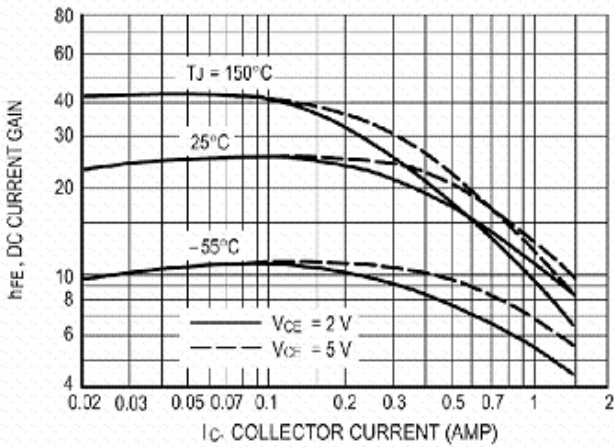
#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	Units
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 1mA, I <sub>E</sub> =0	700			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> =0	400			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 1mA, I <sub>C</sub> =0	9			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 700V, I <sub>E</sub> =0			100	μA
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> = 400V, I <sub>B</sub> =0			50	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 7V, I <sub>C</sub> =0			10	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.4 A	20		40	
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> = 0.5A			3	V
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> = 0.1A			0.8	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =0.5A, I <sub>B</sub> =0.1A			1	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =100mA, f =1MHz	4			MHz
Fall time	t <sub>f</sub>	I <sub>C</sub> =1A			0.7	μs
Storage time	t <sub>s</sub>	I <sub>B1</sub> =-I <sub>B2</sub> =0.2A			4	μs

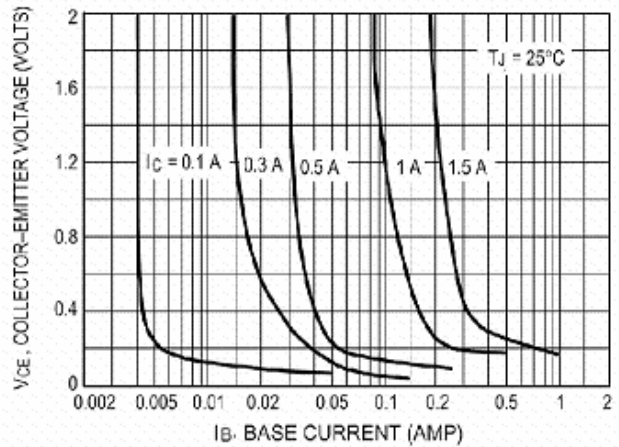
#### CLASSIFICATION OF h<sub>FE</sub>

Rank				
Range	20-25	25-30	30-35	35-40

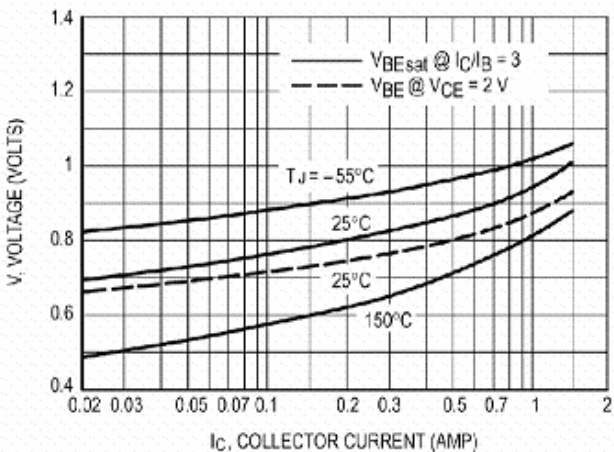
## Typical Characteristics



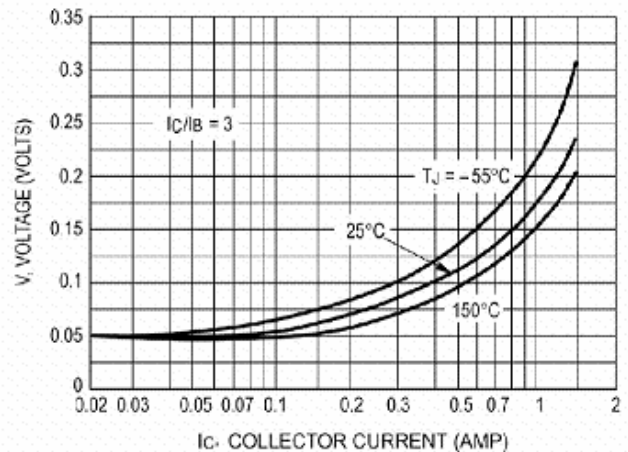
DC Current Gain



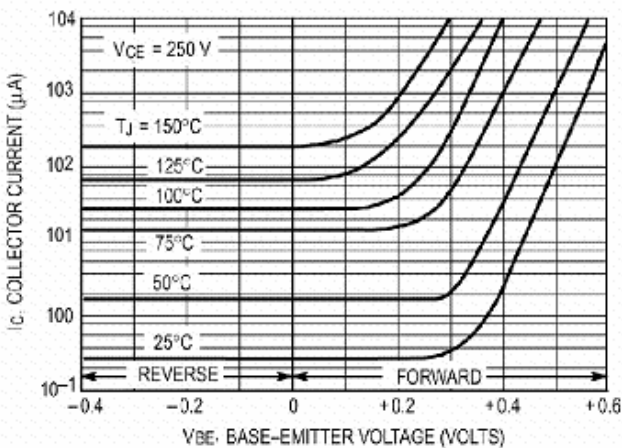
Collector Saturation Region



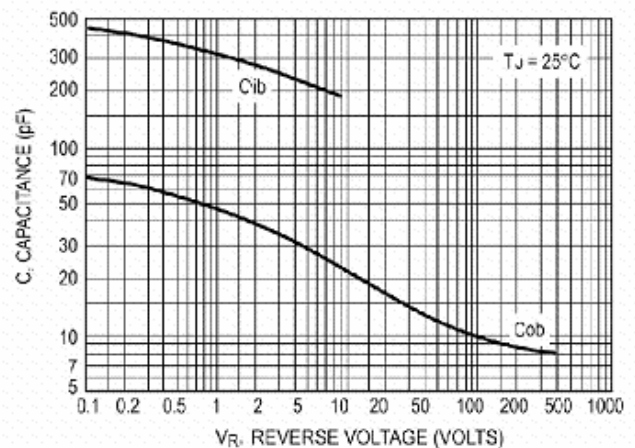
Base-Emitter Voltage



Collector-Emitter Saturation Region



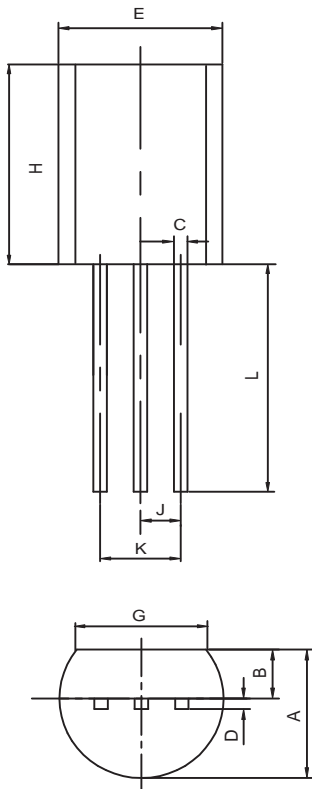
Collector Cutoff Region



Capacitance

**TO-92 Outline Dimensions**

unit:mm



<b>TO-92</b>		
Dim	Min	Max
A	3.30	3.70
B	1.10	1.40
C	0.38	0.55
D	0.36	0.51
E	4.40	4.70
G	3.43	-
H	4.30	4.70
J	1.270TYP	
K	2.44	2.64
L	14.10	14.50