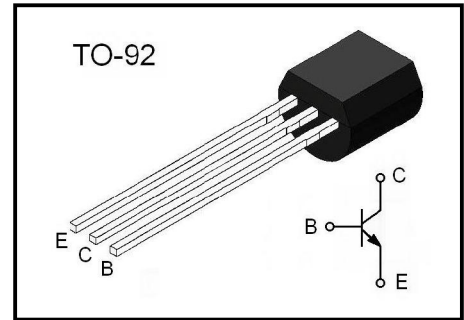


**NPN Plastic-Encapsulate Transistors**

**Switching and Amplifier Applications**

➤ Complement to BC640



**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$BV_{CBO}$	100	V
Collector-Emitter Voltage	$BV_{CEO}$	80	V
Emitter-Base Voltage	$BV_{EBO}$	5	V
Collector Current	$I_C$	1	A
Collector Power Dissipation	$P_C$	1	W
Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	°C

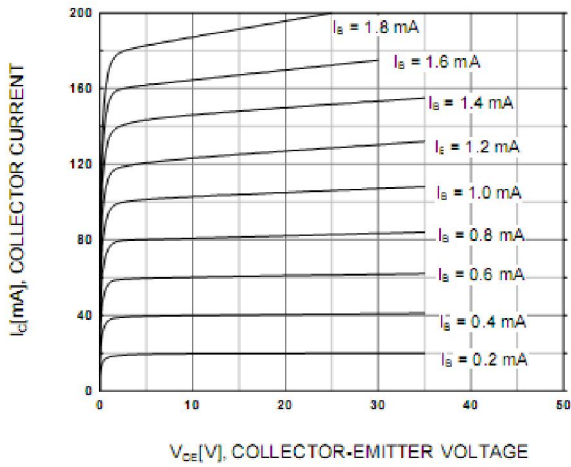
**Electrical Characteristics (Ta=25°C)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$BV_{CBO}$	$I_C = 100\mu A, I_E = 0$	100			V
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = 10mA, I_B = 0$	80			V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E = 100\mu A, I_C = 0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 100V, I_E = 0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = 2V, I_C = 5mA$	25			
		$V_{CE} = 2V, I_C = 150mA$	40		160	
		$V_{CE} = 2V, I_C = 150mA$	100		250	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$			0.5	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = 2V, I_C = 500mA$			1	V
Transition frequency	$f_T$	$V_{CE} = 5V, I_B = 10mA$		100		MHz

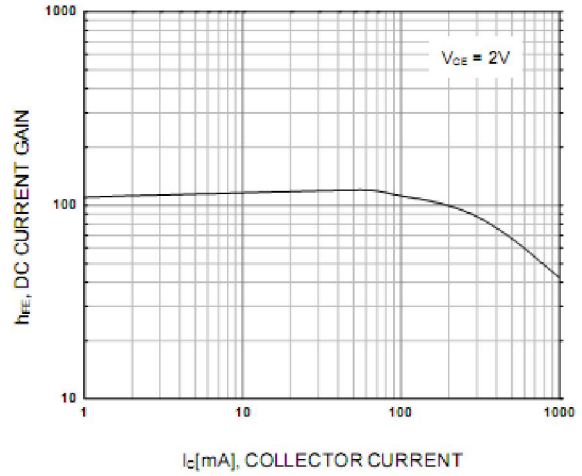
**$h_{FE}$  Classification**

Classification	BC639-10	BC639-16
$h_{FE}$ Range	40~160	100~250

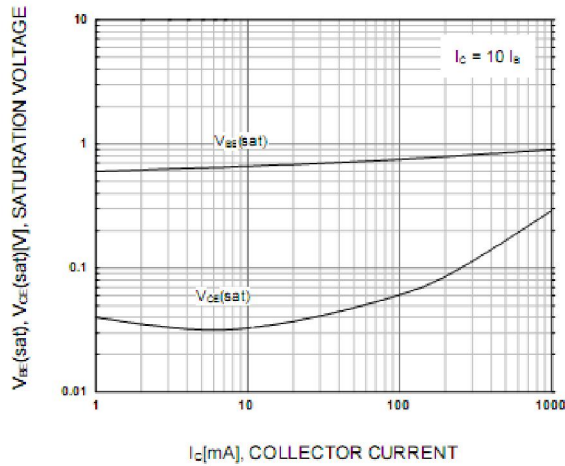
**Typical Characteristics**



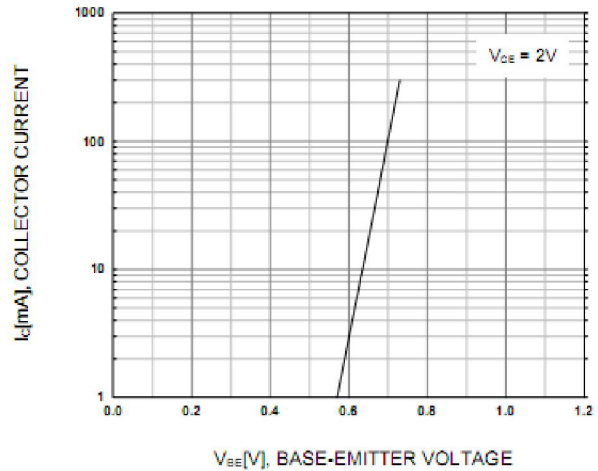
**Figure 1. Static Characteristic**



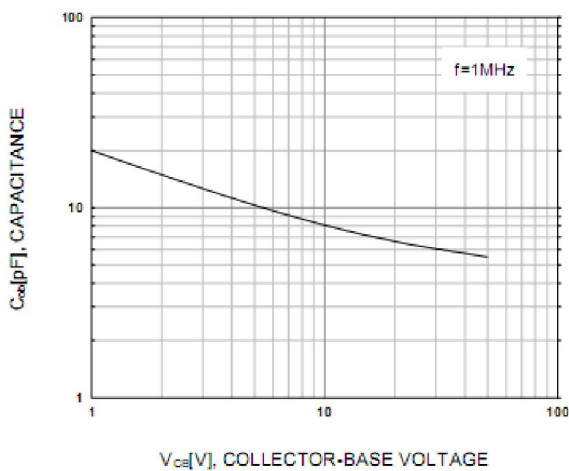
**Figure 2. DC current Gain**



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



**Figure 4. Base-Emitter On Voltage**



**Figure 5. Output Capacitance**

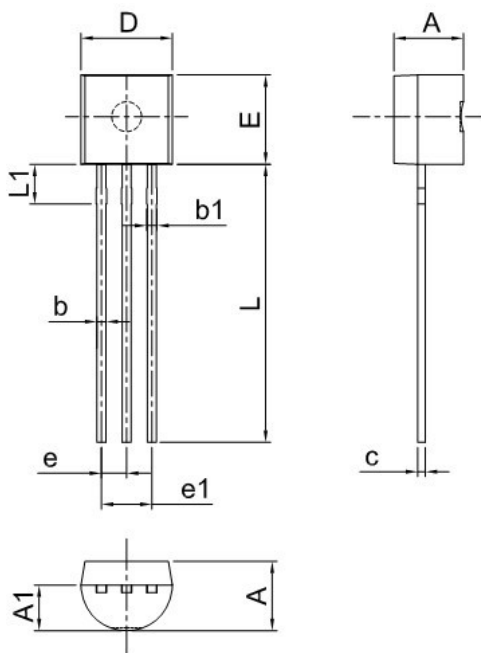
**Ordering information**

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

**Package Dimensions**

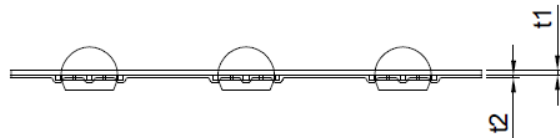
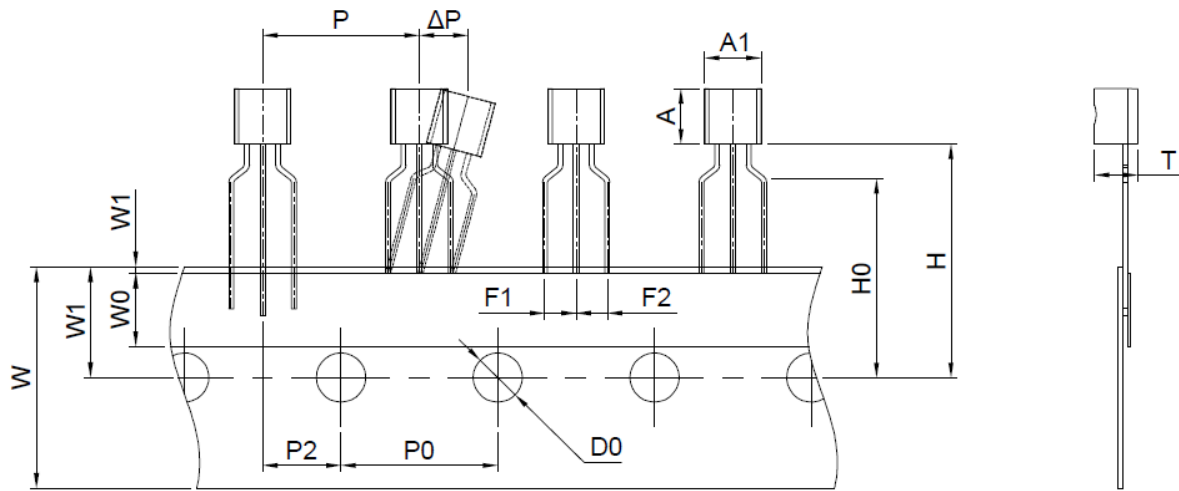
**TO-92**

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

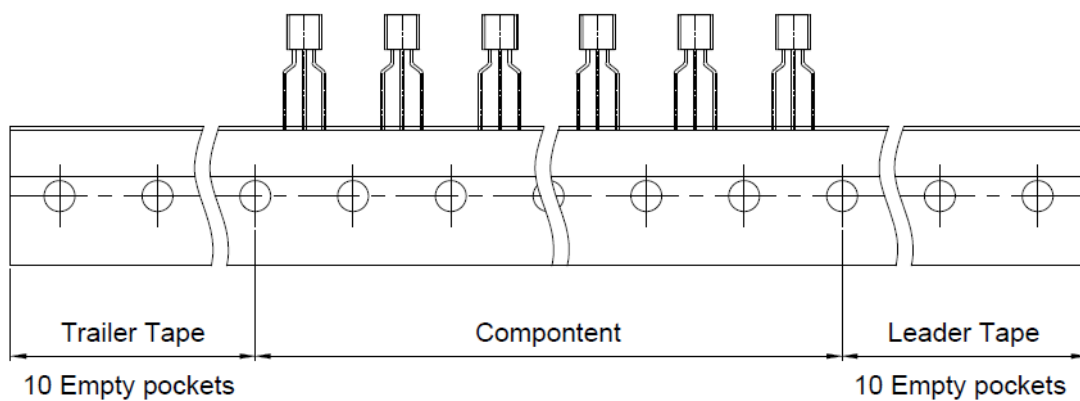


Taping Dimensions

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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