

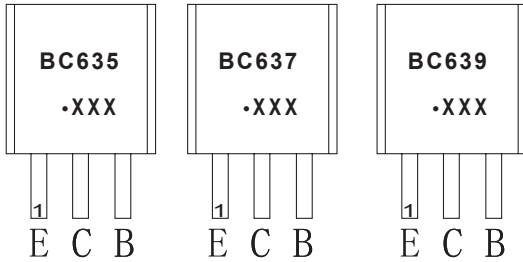
## TO-92 Plastic-Encapsulate Transistors

### BC635 / BC637 / BC639 TRANSISTOR (NPN)

#### FEATURES

- High current transistors

#### MARKING



BC635,BC637,BC639=Device code

Solid dot=Green molding compound device,  
if none,the normal device

XXX=Code

#### ORDERING INFORMATION

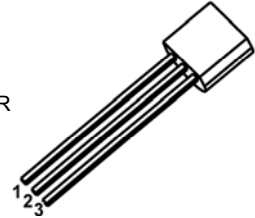
Part Number	Package	Packing Method	Pack Quantity
BC635	TO-92	Bulk	1000pcs/Bag
BC635-TA	TO-92	Tape	2000pcs/Box
BC637	TO-92	Bulk	1000pcs/Bag
BC637-TA	TO-92	Tape	2000pcs/Box
BC639	TO-92	Bulk	1000pcs/Bag
BC639-TA	TO-92	Tape	2000pcs/Box

#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

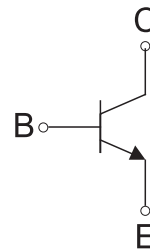
Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Emitter Voltage	BC635	45
		BC637	60
		BC639	100
V <sub>CEO</sub>	Collector-Emitter Voltage	BC635	45
		BC637	60
		BC639	80
V <sub>EB0</sub>	Emitter-Base Voltage	5	V
I <sub>c</sub>	Collector Current -Continuous	1	A
P <sub>c</sub>	Collector Power Dissipation	0.83	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-65-150	°C

#### TO-92

1. EMITTER
2. COLLECTOR
3. BASE



#### Equivalent Circuit

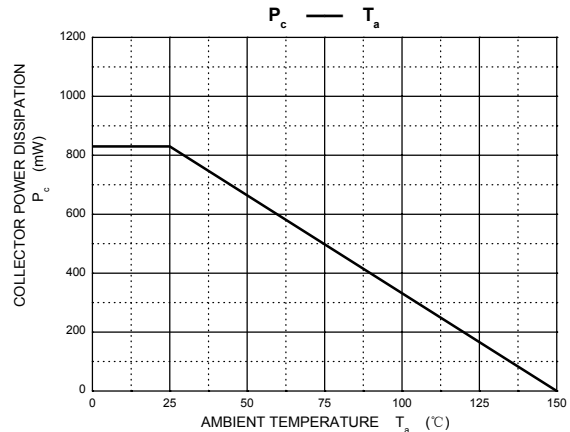
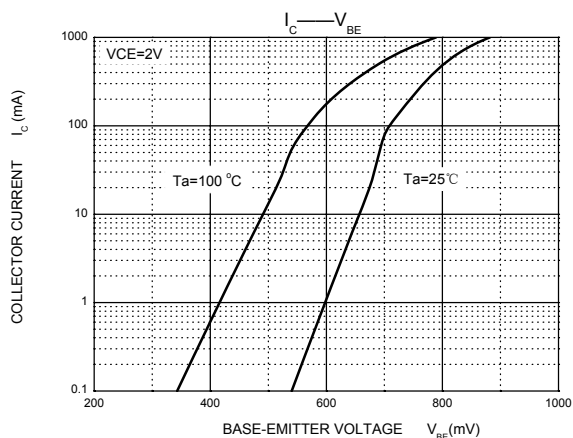
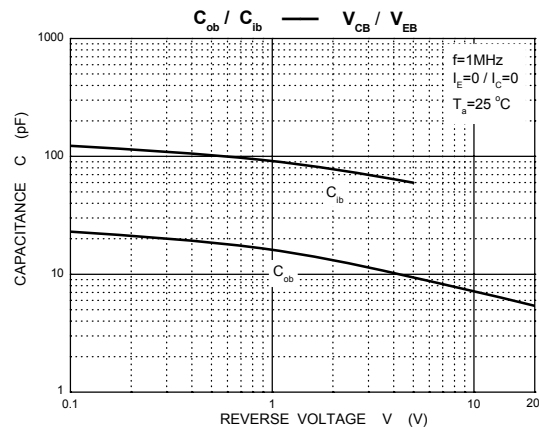
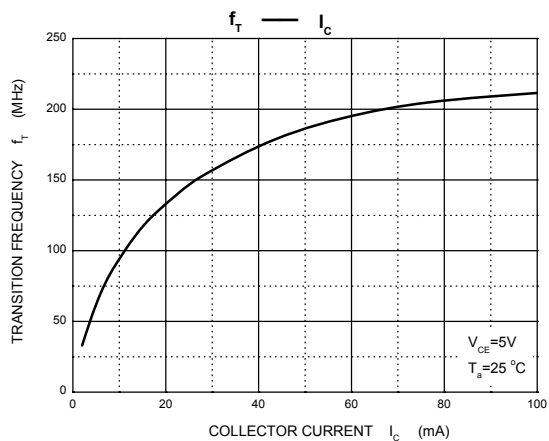
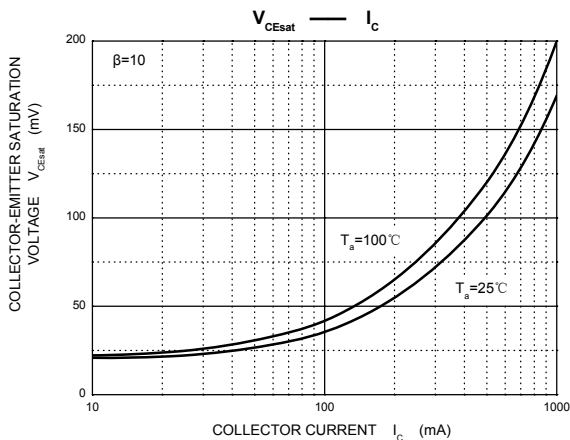
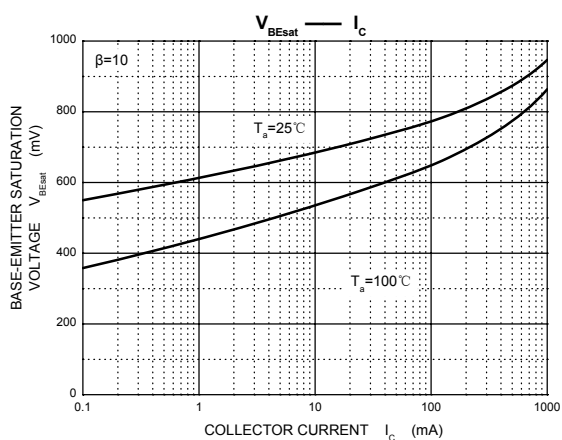
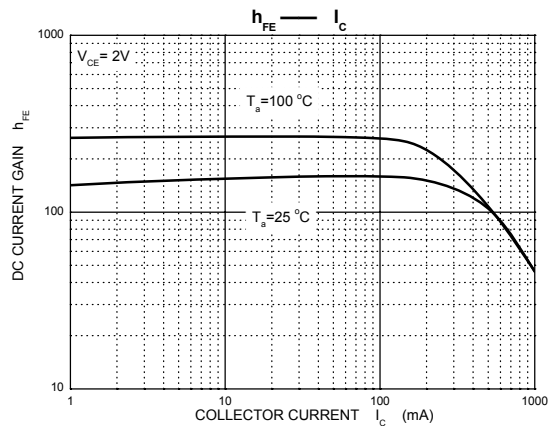
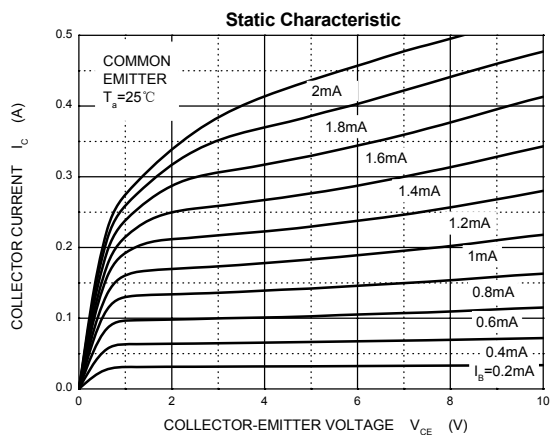


## ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$ BC635	45			V
		BC637	60			V
		BC639	80			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=30\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_B=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	25			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$ BC635	40		250	
		BC637-10/BC639-10	63		160	
		BC637-16/BC639-16	100		250	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$			1	V
Transition frequency	$f_T$	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=50\text{MHz}$		100		MHz

# Typical Characteristics



## TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92 Suggested Pad Layout



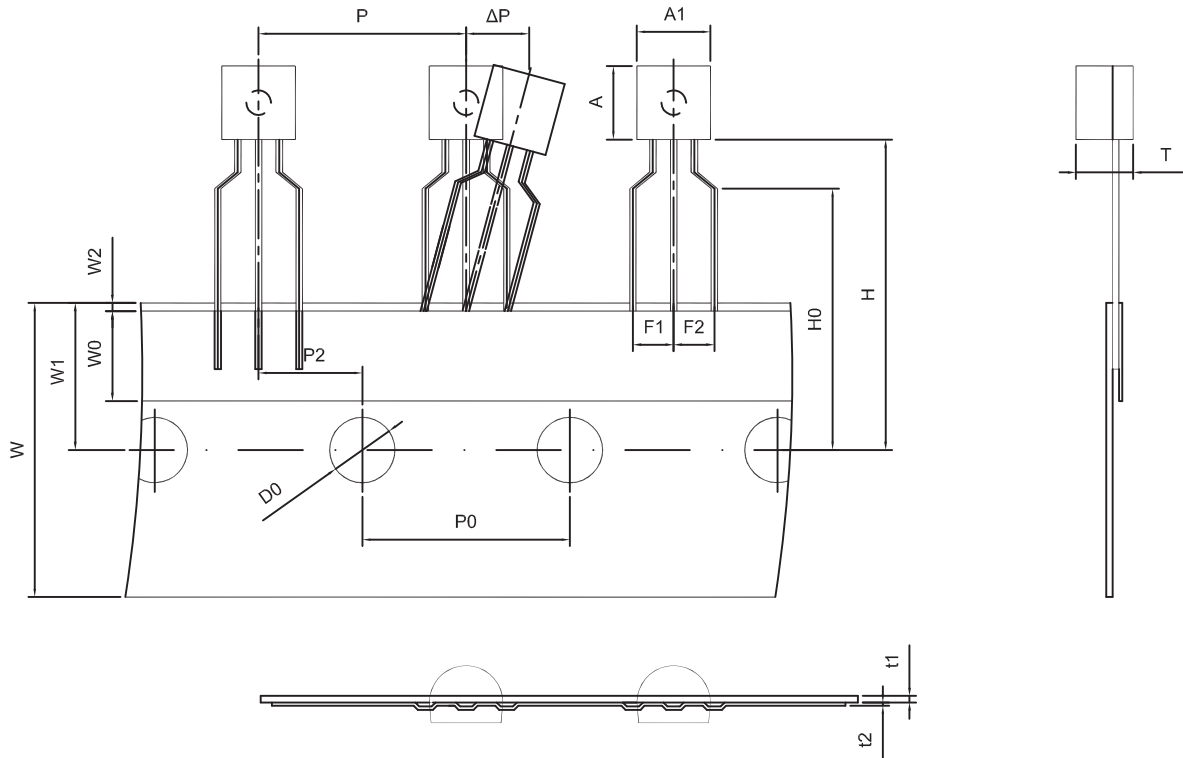
### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

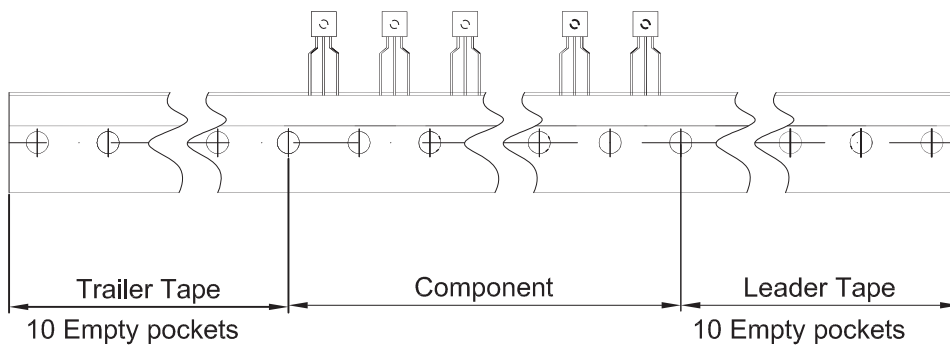
### NOTICE

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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250