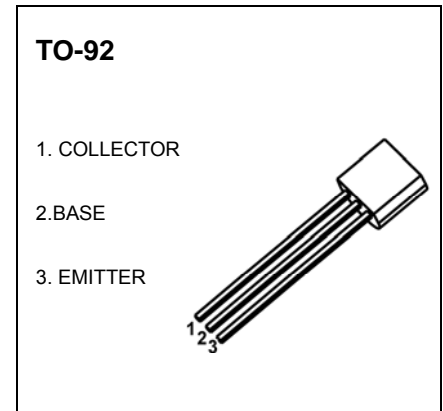


## TO-92 Plastic-Encapsulate Transistors

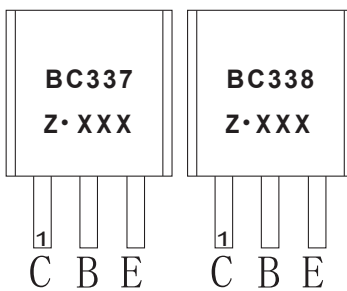
### BC337/BC338 TRANSISTOR (NPN)

#### FEATURES

Power dissipation



#### MARKING



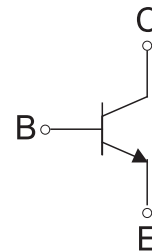
BC337,BC338=Device code

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

Z=Rank of  $h_{FE}$

XXX=Code

#### Equivalent Circuit



#### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BC337	TO-92	Bulk	1000pcs/Bag
BC337-TA	TO-92	Tape	2000pcs/Box
BC338	TO-92	Bulk	1000pcs/Bag
BC338-TA	TO-92	Tape	2000pcs/Box

#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

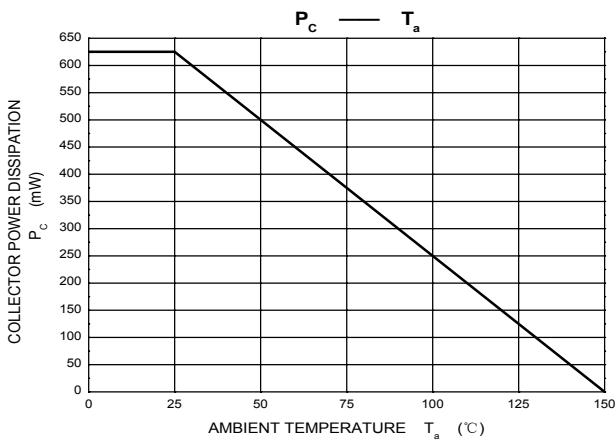
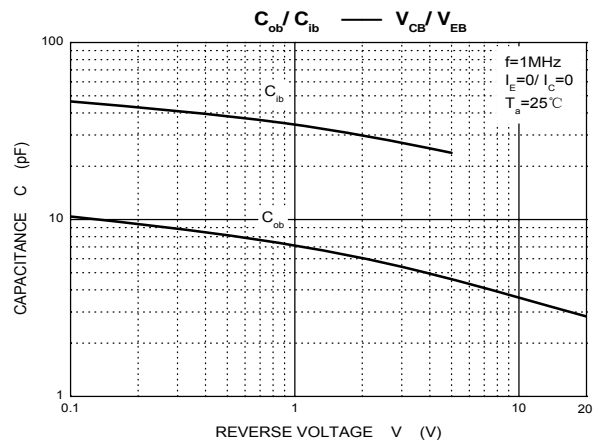
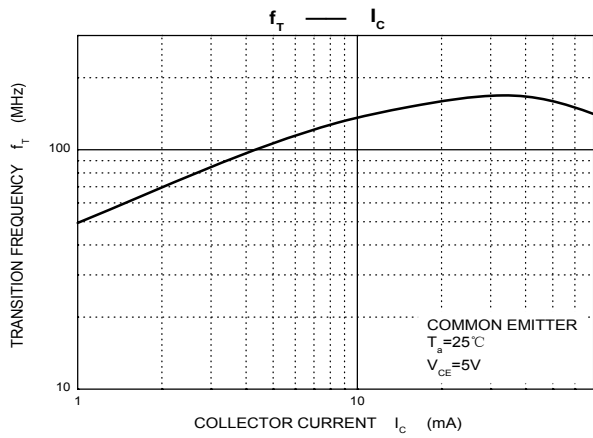
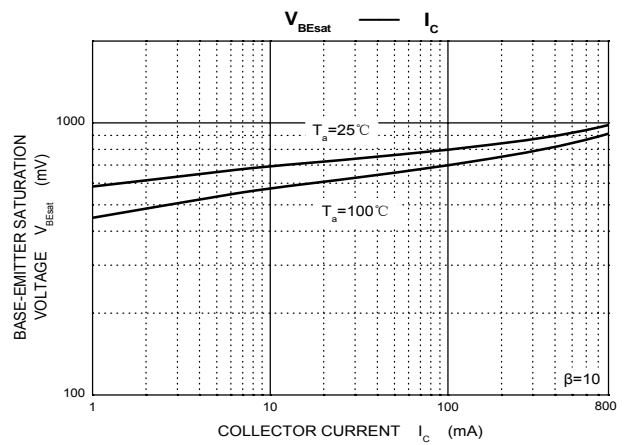
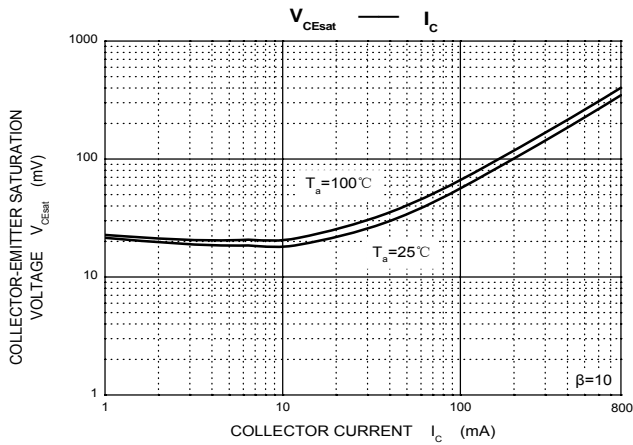
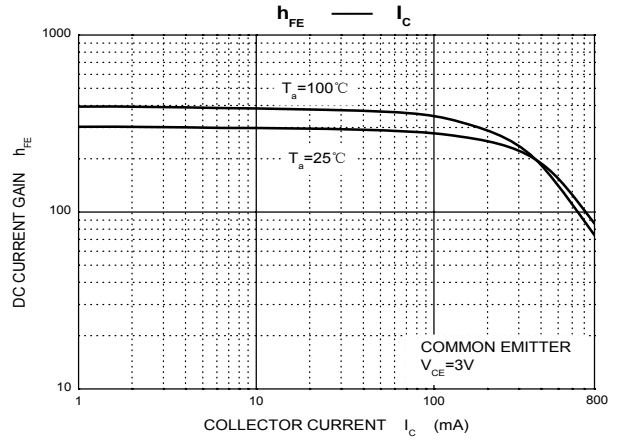
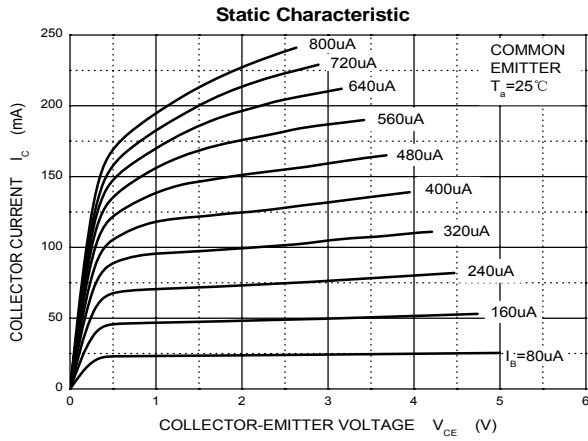
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	<b>BC337</b>	50
		<b>BC338</b>	30
$V_{CEO}$	Collector-Emitter Voltage	<b>BC337</b>	45
		<b>BC338</b>	25
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	800	mA
$P_D$	Total Device Dissipation	625	mW
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^{\circ}\text{C}$

## ELECTRICAL CHARACTERISTICS

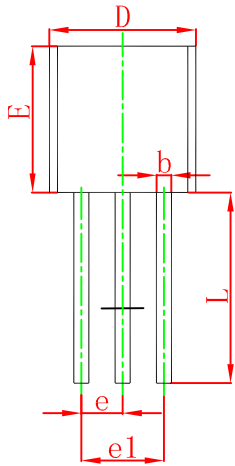
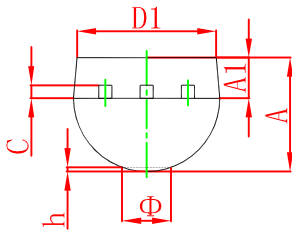
$T_a=25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>Collector-base breakdown voltage</b> BC337 BC338	$V_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	50 30			V V
<b>Collector-emitter breakdown voltage</b> BC337 BC338	$V_{CEO}$	$I_C=10\text{mA}, I_B=0$	45 25			V V
<b>Emitter-base breakdown voltage</b>	$V_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			V
<b>Collector cut-off current</b> BC337 BC338	$I_{CBO}$	$V_{CB}=45\text{V}, I_E=0$ $V_{CB}=25\text{V}, I_E=0$			0.1 0.1	$\mu\text{A}$
<b>Collector cut-off current</b> BC337 BC338	$I_{CEO}$	$V_{CE}=40\text{V}, I_B=0$ $V_{CE}=20\text{V}, I_B=0$			0.2 0.2	$\mu\text{A}$
<b>Emitter cut-off current</b>	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.1	$\mu\text{A}$
<b>BC337/BC338</b> BC337-16/BC338-16 BC337-25/BC338-25 BC337-40/BC338-40	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	100 100 160 250		630 250 400 630	
<b>DC current gain</b>	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=300\text{mA}$	60			
<b>Collector-emitter saturation voltage</b>	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.7	V
<b>Base-emitter saturation voltage</b>	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1.2	V
<b>Base-emitter voltage</b>	$V_{BE}$	$V_{CE}=1\text{V}, I_C=300\text{mA}$			1.2	V
<b>Transition frequency</b>	$f_T$	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	210			MHz
<b>Collector Output Capacitance</b>	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{MHz}$		15		pF

# Typical Characteristics

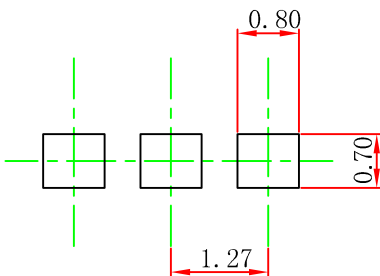


## TO-92 Package Outline Dimensions



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



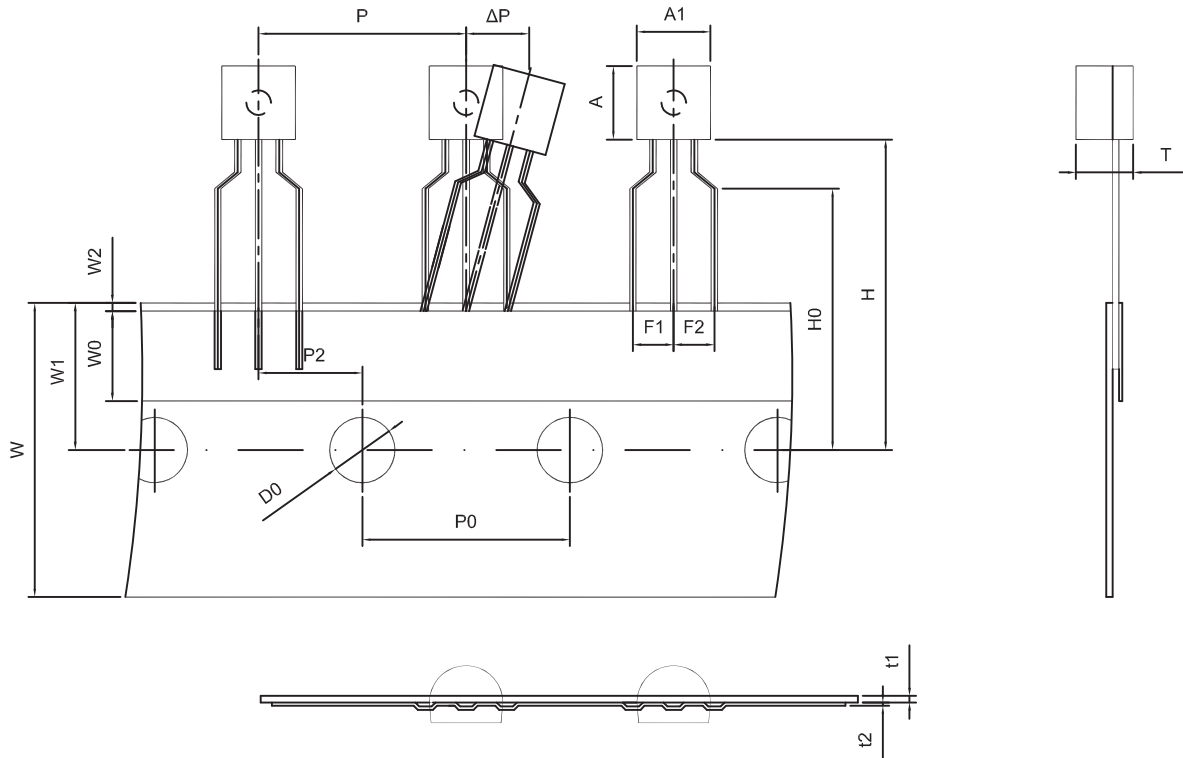
### Note:

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

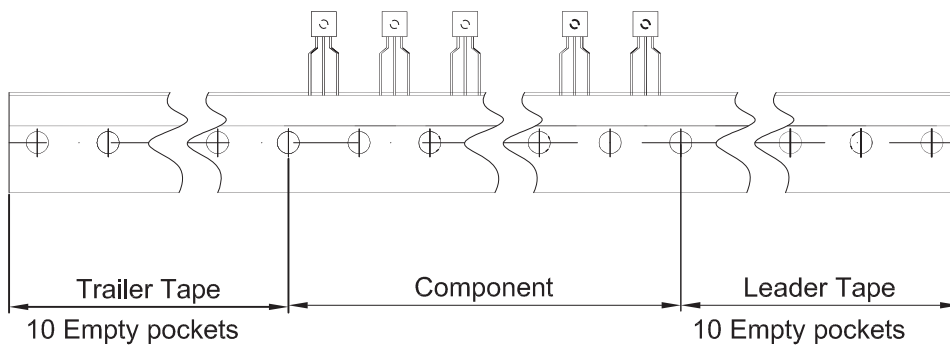
### NOTICE

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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

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