

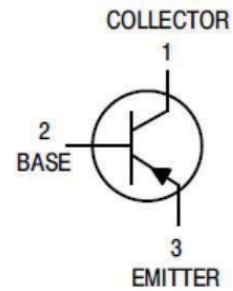
BIPOLAR TRANSISTOR (PNP)
Features

The PNP Bipolar Transistor is designed for use in linear and switching applications. The device is housed in the TO-92 package.

These are PbFree Devices
Complement to:BC548

Maximum Ratings (Ta = 25°)

Parameter	Symbol	Rating	Unit
Collector- base voltage	BV_{CBO}	-30	V
Collector-emitter voltage	BV_{CEO}	-30	V
Emitter-base voltage	BV_{EBO}	-5	V
Collector current	I_{CM}	-100	mA
Collector Power Dissipation	P_C	0.5	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C


Electrical Characteristics (Ta=25°C)

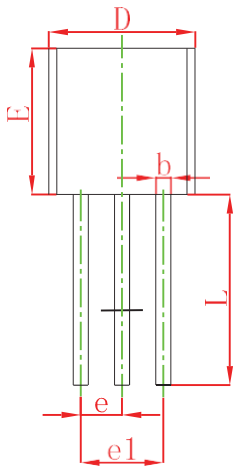
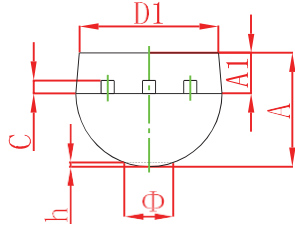
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector- Base Breakdown Voltage	BV_{CBO}	$I_C = -100\mu A, I_E = 0$	-30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -1mA, I_B = 0$	-30			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu A, I_C = 0$	-5			V
Collector- Base cut-off current	I_{CBO}	$V_{CB} = -30V, I_E = 0$			-0.1	μA
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = -30V, I_B = 0$			-0.1	μA
Emitter-Base cut-off current	I_{EBO}	$V_{EB} = -5V, I_C = 0$			-0.1	μA
DC current gain	H_{FE}	$V_{CE} = -5V, I_C = -2mA$	110		800	
Collector-emitter saturation voltage	V_{CESAT}	$I_C = -10mA, I_B = -0.5mA$		-90	-300	mV
		$I_C = -100mA, I_B = -5mA$		-250	-650	mV
Base-Emitter On Voltage	V_{BEON}	$V_{CE} = -5V, I_C = -2mA$	-600	-660	-750	mV
		$V_{CE} = -5V, I_C = -10mA$			-800	mV
Transition frequency	f_T	$V_{CE} = -5V, I_C = -10mA$		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10V, f = 1.0MHz$		3	6	pF
Noise Figure	N_F	$V_{CE} = -5V, I_C = -200\mu A$			10	dB

 H_{FE} Classification

Classification	A	B	C
h_{FE}	110 ~ 220	200 ~ 450	420 ~ 800

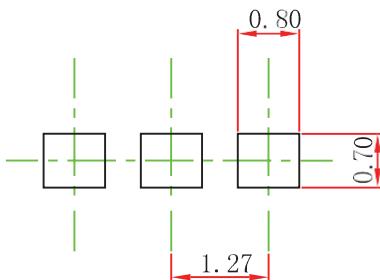
BIPOLAR TRANSISTOR (PNP)

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



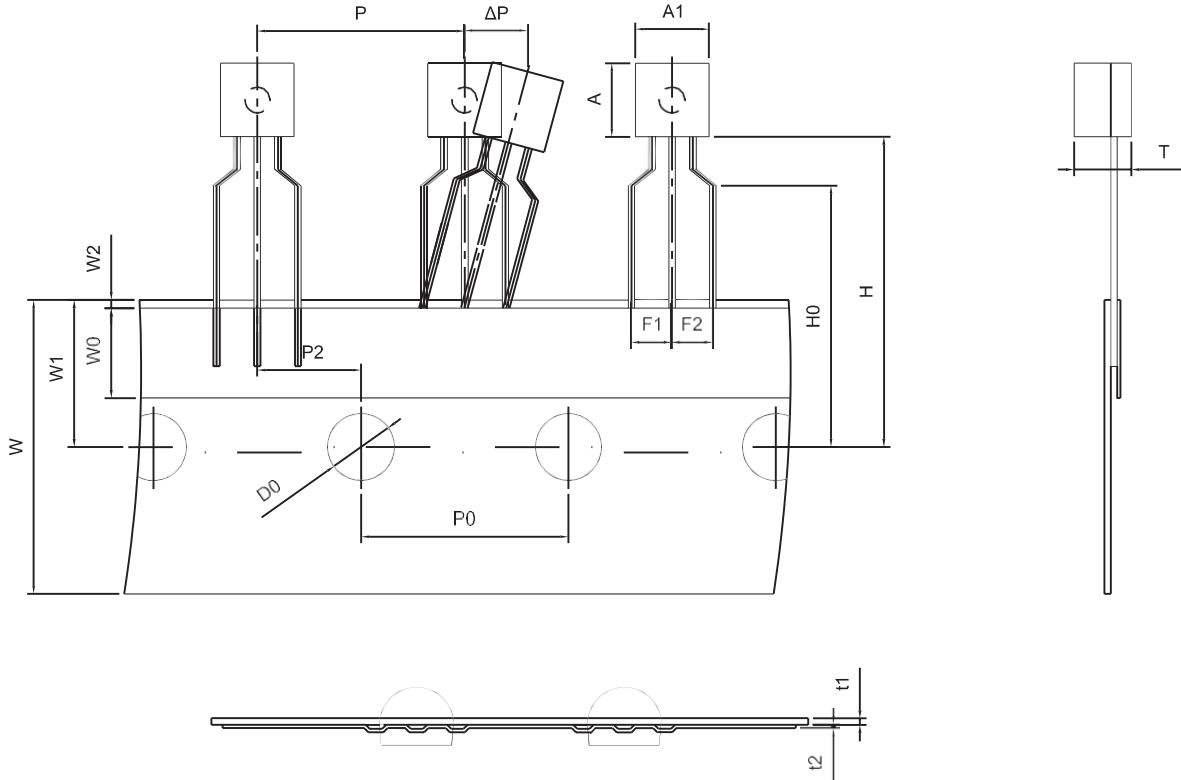
Note:

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

BIPOLAR TRANSISTOR (PNP)

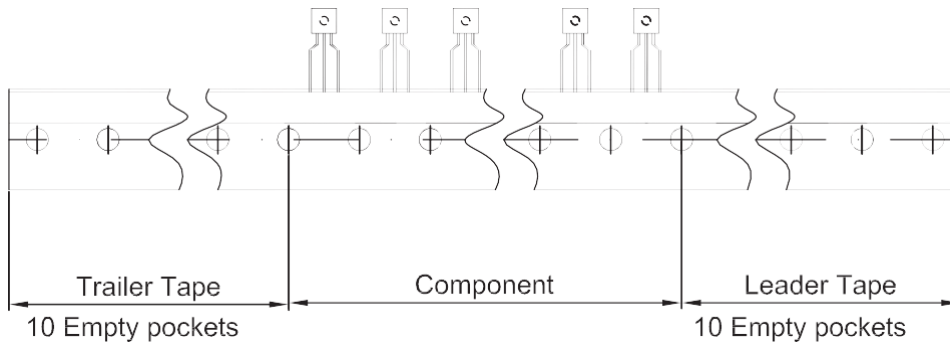
TO-92 7DSH DQG 5HH0

TO-92 PACKAGE TAPEING DIMENSION



Dimensions 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