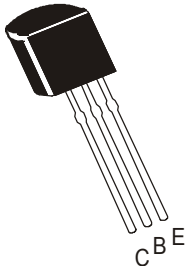


## NPN SILICON PLANAR TRANSISTORS



**BC171 , A, B**  
**BC172, A, B, C**  
**BC174, A, B**

**TO-92**  
**Plastic Package**

### Amplifier Transistors

#### ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	BC174	BC171	BC172	UNIT
Collector Emitter Voltage	$V_{CEO}$	65	45	25	V
Collector Base Voltage	$V_{CBO}$	80	50	30	V
Emitter Base Voltage	$V_{EBO}$	6			V
Collector Current Continuous	$I_C$	100			mA
Total Device Dissipation @ Ta=25°C	$P_D$	350			mW
Derate Above 25°C		2.8			mW/°C
Total Device Dissipation @ Tc=25°C	$P_D$	1.0			W
Derate Above 25°C		8.0			mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150			°C

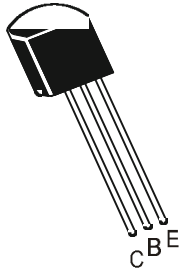
#### THERMAL RESISTANCE

Junction to ambient	$R_{th(j-a)}$	357	°C/W
Junction to case	$R_{th(j-c)}$	125	°C/W

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

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Collector Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=2mA, I_B=0$				
	<b>BC174</b>		65			V
	<b>BC171</b>		45			V
	<b>BC172</b>		25			V
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu A, I_C=0$				
	<b>ALL</b>		6			V
Collector Cut off Current	$I_{CES}$					
	<b>BC174</b>	$V_{CE}=70V, V_{BE} = 0$			15	nA
	<b>BC171</b>	$V_{CE}=50V, V_{BE} = 0$			15	nA
	<b>BC172</b>	$V_{CE}=35V, V_{BE} = 0$			15	nA
		$V_{CE}=30V, V_{BE} = 0,$ $T_a= 125^\circ C$			4	$\mu A$

# NPN SILICON PLANAR TRANSISTORS



BC171 , A, B  
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TO-92  
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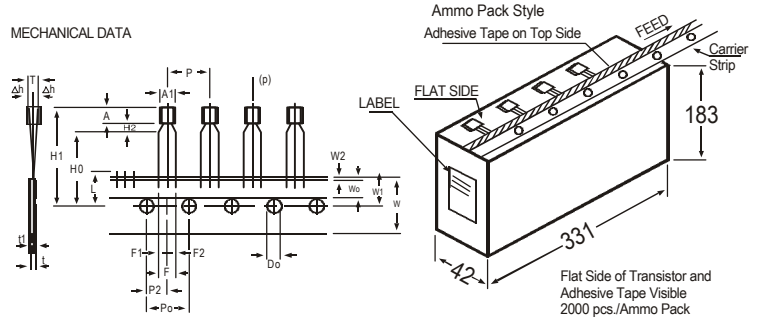
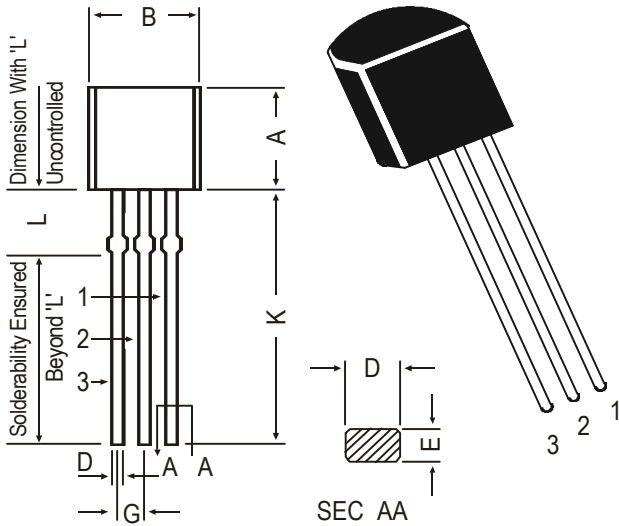
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
<b>DC Current Gain</b>	$h_{FE}$	$V_{CE}=5V, I_C=10\mu A$				
BC171A, 2A, 4A				90		
BC171B, 2B, 4B				150		
BC172C				270		
		$V_{CE}=5V, I_C=2mA$				
BC174			120		450	
BC171			120		800	
BC172			120		800	
BC171A, 2A, 4A			120		220	
BC171B, 2B, 4B			180		460	
BC172C			380		800	
		$V_{CE}=5V, I_C=100mA$				
BC171A, 2A, 4A				120		
BC171B, 2B, 4B				180		
BC172C				300		
<b>Base Emitter Saturation Voltage</b>	$V_{BE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.7		V
<b>Collector Emitter Saturation Voltage</b>	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$			0.25	V
<b>Voltage</b>		$I_C=100mA, I_B=5mA$			0.60	V
<b>Base Emitter on Voltage</b>	$V_{BE(on)}$	$I_C=2mA, V_{CE} = 5V$	0.55		0.70	V
<b><u>DYNAMIC CHARACTERISTICS</u></b>						
<b>Transition Frequency</b>	$f_T$	$I_C=10mA, V_{CE}=5V$				
BC171		$f=100MHz$	150			MHz
BC172			150			
BC174			150			
<b>Output Capacitance</b>	$C_{ob}$	$I_E=0, V_{CB}=10V$			4.50	pF
		$f=1MHz$				
<b>Input Capacitance</b>	$C_{ib}$	$I_C=0, V_{EB}=0.5V$		10		pF
		$f=1MHz$				
<b>Small Signal Current Gain</b>	$ h_{fe} $	$V_{CE} = 5V, I_C=2mA$				
BC171, 2, 4		$f=1KHz$	125		900	
BC171A, 2A, 4A,			125		260	
BC171B, 2B, 4B			240		500	
BC172C			450		900	
<b>Noise Figure</b>	NF	$V_{CE} = 5V, I_C=0.2mA$			10	dB
BC171		$R_S=2K\Omega, f=1KHz, f=200Hz$			10	
BC172					10	
BC174						

BC171 , A, B  
 BC172, A, B, C  
 BC174, A, B

TO-92  
 Plastic Package

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

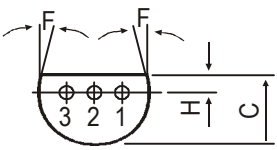
ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	AT TOP OF BODY
COMPONENT ALIGNMENT	Δh		0	1		
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	W0		6		±0.2	
HOLE POSITION	W1		9		+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W2		0.5		±0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F1,	F2		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

NOTES

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—
L	1.982	2.082

All diminsions in mm.



PIN CONFIGURATION

1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

## Notes

**BC171 , A, B  
BC172, A, B, C  
BC174, A, B**

**TO-92  
Plastic Package**

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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