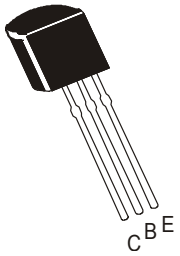
NPN SILICON PLANAR TRANSISTORS

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

TO-92
Plastic Package



Amplifier Transistors

ABSOLUTE MAXIMUM RATINGS (Ta=25ºC 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=25ºC	P_D			350		mW
Derate Above 25ºC				2.8		mW/ºC
Total Device Dissipation @ Tc=25ºC	P_D			1.0		W
Derate Above 25ºC				8.0		mW/ºC
Operating And Storage Junction Temperature Range	T_j, T_{stg}			-55 to +150		ºC

THERMAL RESISTANCE

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

ELECTRICAL CHARACTERISTICS (Ta=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
Collector Emitter Breakdown	BV_{CEO}	I_C=2mA,I_B=0				
Voltage						
BC174			65			V
BC171			45			V
BC172			25			V
Emitter Base Breakdown	BV_{EBO}	I_E=100µA, I_C=0				
Voltage						
ALL			6			V
Collector Cut off Current	I_{CES}					
BC174		V_{CE}=70V, V_{BE} = 0			15	nA
BC171		V_{CE}=50V, V_{BE} = 0			15	nA
BC172		V_{CE}=35V, V_{BE} = 0			15	nA
		V_{CE}=30V, V_{BE} = 0,			4	µA
		Ta= 125ºC				

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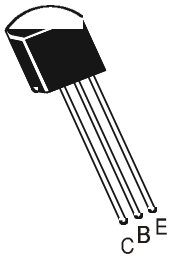
BC171 , A, B
BC172, A, B, C
BC174, A, B

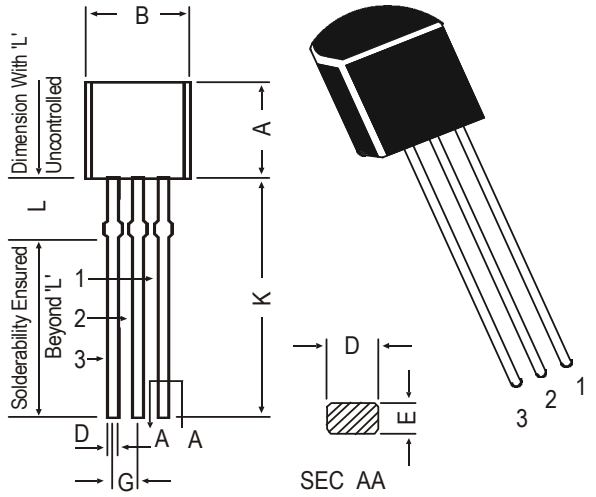


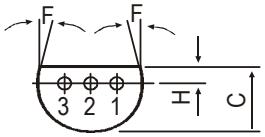
TO-92
Plastic Package

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
DC Current Gain	h_{FE}	V_{CE}=5V,I_C=10μA				
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		
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=10mA,I_B=0.5mA		0.7		V
Collector Emitter Saturation	$V_{CE\ (sat)}$	I_C=10mA,I_B=0.5mA			0.25	V
Voltage		I_C=100mA,I_B=5mA			0.60	V
Base Emitter on Voltage	$V_{BE\ (on)}$	I_C=2mA, V_{CE} = 5V	0.55		0.70	V
DYNAMIC CHARACTERISTICS						
Transition Frequency	f_T	I_C=10mA, V_{CE}=5V				
BC171		f=100MHz	150			MHz
BC172			150			
BC174			150			
Output Capacitance	C_{ob}	I_E=0, V_{CB}=10V			4.50	pF
		f=1MHz				
Input Capacitance	C_{ib}	Ic=0, V_{EB}=0.5V		10		pF
		f=1MHz				
Small Signal Current Gain	$\lvert h_{fe} \rvert$	V_{CE} =5V,I_C=2mA				
BC171, 2, 4		f=1KH_Z	125		900	
BC171A, 2A, 4A,			125		260	
BC171B, 2B, 4B			240		500	
BC172C			450		900	
Noise Figure	NF	V_{CE} =5V,I_C=0.2mA			10	dB
BC171		R_S=2KΩ,f=1KH_Z, f=200Hz			10	
BC172					10	
BC174						

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack



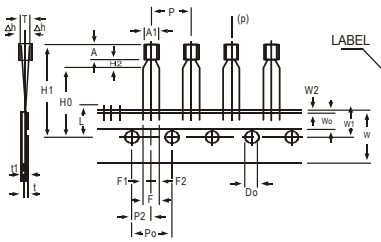


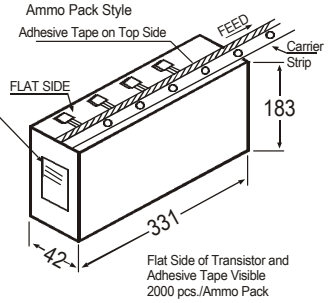
PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

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.

MECHANICAL DATA





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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	△h		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	Wo		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 DISTANCEF1,	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.

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**

Disclaimer

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