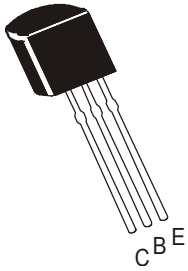


NPN SILICON PLANAR TRANSISTORS



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

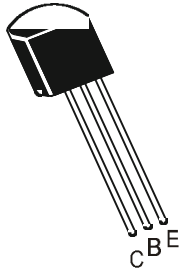
THERMAL RESISTANCE

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}	$I_C=2mA, I_B=0$				
	BC174		65			V
	BC171		45			V
	BC172		25			V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu A, I_C=0$				
	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
		$V_{CE}=30V, V_{BE} = 0,$ $T_a= 125^\circ C$			4	μA

NPN SILICON PLANAR TRANSISTORS



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

TO-92
Plastic Package

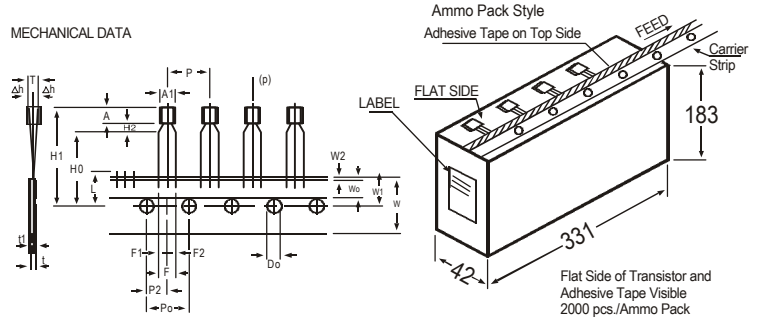
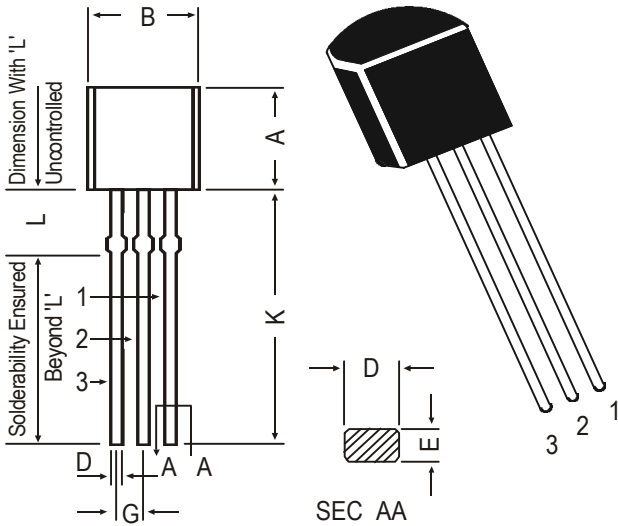
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN	TYP	MAX	
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=10\mu A$				
BC171A, 2A, 4A				90		
BC171B, 2B, 4B				150		
BC172C				270		
		$V_{CE}=5V, I_C=2mA$				
BC174			120		450	
BC171			120		800	
BC172			120		800	
BC171A, 2A, 4A			120		220	
BC171B, 2B, 4B			180		460	
BC172C			380		800	
		$V_{CE}=5V, I_C=100mA$				
BC171A, 2A, 4A				120		
BC171B, 2B, 4B				180		
BC172C				300		
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=0.5mA$		0.7		V
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=0.5mA$			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
<u>DYNAMIC CHARACTERISTICS</u>						
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}	$I_C=0, V_{EB}=0.5V$		10		pF
		$f=1MHz$				
Small Signal Current Gain	$ h_{ie} $	$V_{CE} = 5V, I_C=2mA$				
BC171, 2, 4		$f=1KHz$	125		900	
BC171A, 2A, 4A,			125		260	
BC171B, 2B, 4B			240		500	
BC172C			450		900	
Noise Figure	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	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 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

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