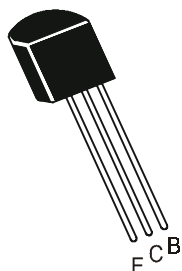


NPN SILICON PLANAR EPITAXIAL AMPLIFIER TRANSISTORS

**BC184L, BC184LB
BC184LC**



**TO-92
Plastic Package**

General Purpose Amplifier Transistors

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

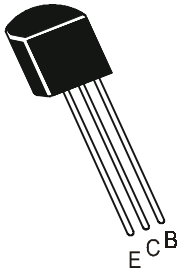
DESCRIPTION	SYMBOL	VALUE	UNITS
Collector -Emitter Voltage	V_{CEO}	30	V
Collector -Base Voltage	V_{CBO}	45	V
Emitter -Base Voltage	V_{EBO}	6.0	V
Collector Current Continuous	I_C	100	mA
Power Dissipation @ Ta=25°C	P_D	350	mW
Derate Above 25°C		2.8	mW/°C
Power Dissipation @ Tc=25°C	P_D	1.0	W
Derate Above 25°C		8.0	mW/°C
Operating And Storage Junction Temperature Range	T_j, T_{stg}	-55 to +150	°C

THERMAL RESISTANCE

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

ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector -Emitter Voltage	V_{CEO}	$I_C=2mA, I_B=0$	30			V
Collector -Base Voltage	V_{CBO}	$I_C=10\mu A, I_E=0$	45			V
Emitter-Base Voltage	V_{EBO}	$I_E=100\mu A, I_C=0$	6			V
Collector-Cut off Current	I_{CBO}	$V_{CB}=30V, I_E=0$		0.2	15	nA
Emitter-Cut off Current	I_{EBO}	$V_{EB}=4V, I_C=0$			15	nA
DC Current Gain	h_{FE}	$I_C=10\mu A, V_{CE}=5V$	100			
BC184L		$I_C=2mA, V_{CE}=5V$	240		800	
		$I_C=100mA, V_{CE}=5V$	130			

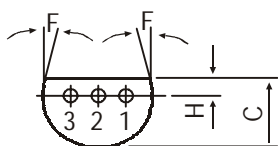
TO-92
Plastic Package**ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$	$I_C=10mA, I_B=0.5mA$		0.07	0.25	V
		$I_C=100mA, I_B=5.0mA^*$		0.2	0.6	V
Base Emitter Saturation Voltage	$V_{BE(Sat)}$	$I_C=100mA, I_B=5mA^*$			1.2	V
Base Emitter On Voltage	$V_{BE(On)}$	$I_C=2.0mA, V_{CE}=5V$	0.55	0.62	0.7	V
		$I_C=100\mu A, V_{CE}=5V$		0.5		V
		$I_C=100mA, V_{CE}=5V^*$		0.83		V
Transistors Frequency	f_T	$I_C=0.5mA, V_{CE}=3V$		140		MHz
		$f=100MHz$				
		$I_C=10mA, V_{CE}=5V$	150	280		MHz
Common Base OutPut Capacitance	C_{ob}	$V_{CB}=10V, I_C=0$			5.0	pF
		$f=1MHz$				
Input Capacitance	C_{ib}	$V_{BE}=0.5V, I_C=0$		8.0		pF
Small Signal Current Gain	BC184L	$ h_{fe} $ $I_C=2mA, V_{CE}=5V$ $f = 1kHz$	240		900	
			240		500	
			450		900	
Noise Figure		$I_C=0.2mA, V_{CE}=5.0V$ $R_s=2kW, f=30Hz$ to 15kHz			4	dB
					4	dB

*Pulse Condition: =300us, Duty Cycle=2%

TO-92
Plastic Package

TO-92 Transistors on Tape and Ammo Pack



1. BASE
2. COLLECTOR
3. EMITTER

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

MECHANICAL DATA

Ammo Pack Style

Adhesive Tape on Top Side

FEED

Carrier Strip

183 mm

331 mm

42 mm

Flat Side of Transistor and Adhesive Tape Visible

2000 pcs./Ammo Pack

FLAT SIDE

LABEL

W2

W0

W1

W

H1

H0

L

F1

F

F2

P2

D0

A11

H2

A

P

(p)

Δb

Δh

h

All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
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	AT TOP OF BODY
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	Δh		0	1		t1 0.3 - 0.6
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	t1 0.3 - 0.6
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		
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.

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

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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290
e-mail sales@cdil.com www.cdil.com