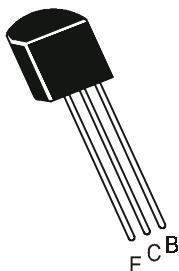


## NPN SILICON PLANAR EPITAXIAL AMPLIFIER TRANSISTORS

**BC184L, BC184LB  
BC184LC**



**TO-92  
Plastic Package**

### General Purpose Amplifier Transistors

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

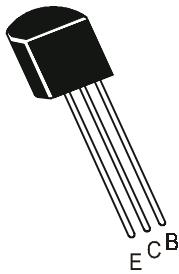
DESCRIPTION	SYMBOL	VALUE	UNITS
Collector -Emitter Voltage	$V_{CEO}$	30	V
Collector -Base Voltage	$V_{CBO}$	45	V
Emitter -Base Voltage	$V_{EBO}$	6.0	V
Collector Current Continuous	$I_C$	100	mA
Power Dissipation @ Ta=25°C	$P_D$	350	mW
Derate Above 25°C		2.8	mW/°C
Power Dissipation @ Tc=25°C	$P_D$	1.0	W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

#### 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			

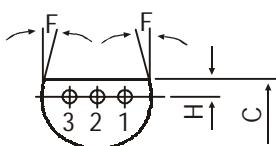
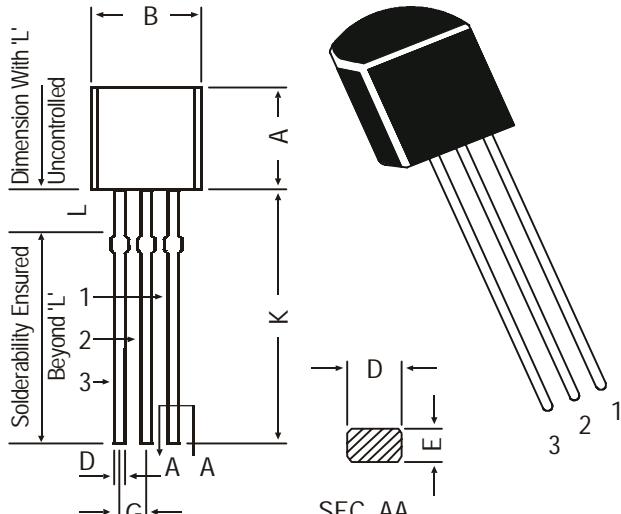
**NPN SILICON PLANAR EPITAXIAL AMPLIFIER TRANSISTORS**
**BC184L, BC184LB  
BC184LC**

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
<b>Collector Emitter Saturation Voltage</b>	$V_{CE(Sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=100\text{mA}, I_B=5.0\text{mA}^*$		0.07 0.2	0.25 0.6	V
<b>Base Emitter Saturation Voltage</b>	$V_{BE(Sat)}$	$I_C=100\text{mA}, I_B=5\text{mA}^*$			1.2	V
<b>Base Emitter On Voltage</b>	$V_{BE(On)}$	$I_C=2.0\text{mA}, V_{CE}=5\text{V}$ $I_C=100\mu\text{A}, V_{CE}=5\text{V}$ $I_C=100\text{mA}, V_{CE}=5\text{V}^*$	0.55	0.62 0.5 0.83	0.7	V
<b>Transistors Frequency</b>	$f_T$	$I_C=0.5\text{mA}, V_{CE}=3\text{V}$ $f=100\text{MHz}$ $I_C=10\text{mA}, V_{CE}=5\text{V}$ $f=100\text{MHz}$		140		MHz
<b>Common Base OutPut Capacitance</b>	$C_{ob}$	$V_{CB}=10\text{V}, I_C=0$ $f=1\text{MHz}$			5.0	pF
<b>Input Capacitance</b>	$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0$ $f=1\text{MHz}$		8.0		pF
<b>Small Signal Current Gain</b>	<b>BC184L</b>	$ h_{fe} $ $I_C=2\text{mA}, V_{CE}=5\text{V}$ $f = 1\text{kHz}$	240		900	
	<b>BC184LB</b>		240		500	
	<b>BC184LC</b>		450		900	
<b>Noise Figure</b>		$I_C=0.2\text{mA}, V_{CE}=5.0\text{V}$ $Rs=2\text{kW}, f=30\text{Hz to}$ $15\text{kHz}$			4	dB
		$I_C=0.2\text{mA}, V_{CE}=5.0\text{V}$ $Rs=2\text{kW}, f=1\text{kHz to}$ $F=200\text{Hz}$			4	dB

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

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

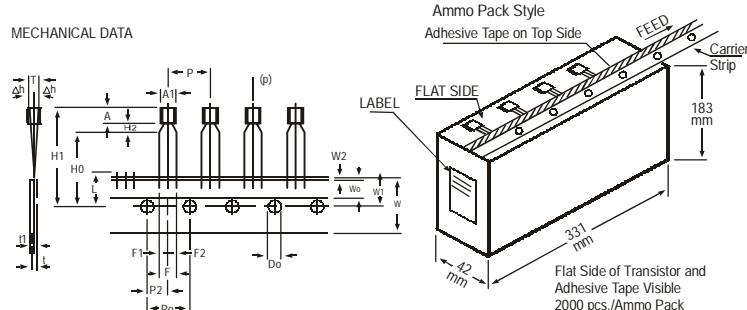


PIN CONFIGURATION

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

All dimensions in mm.



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					
FEED HOLE PITCH	Po		12.7	12.7	$\pm 0.3$	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		$\pm 0.4$	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			$\pm 0.6$	
COMPONENT ALIGNMENT	$\Delta h$	0		1	$-0.2$	
TAPE WIDTH	W	18				AT TOP OF BODY
HOLD-DOWN TAPE WIDTH	Wo	6			$\pm 0.5$	
HOLE POSITION	W1	9			$\pm 0.2$	
HOLD-DOWN TAPE POSITION	W2	0.5			$\pm 0.2$	
LEAD WIRE CLINCH HEIGHT	Ho	16			$\pm 0.5$	
COMPONENT HEIGHT	H1		23.25			
LENGTH OF SNIPPED LEADS	L		11.0			
FEED HOLE DIAMETER	Do	4		1.2	$\pm 0.2$	
TOTAL TAPE THICKNESS	t		2.54		$\pm 0.4$	t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCE F1,	F2				$-0.1$	
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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