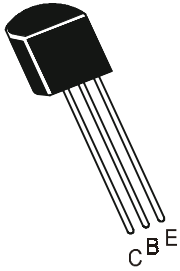


**NPN SILICON PLANAR EPITAXIAL TRANSISTORS**

**BC184  
BC184B  
BC184C**



**TO-92  
Plastic Package**

**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	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	W
Derate Above 25°C		8	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150	°C

**THERMAL RESISTANCE**

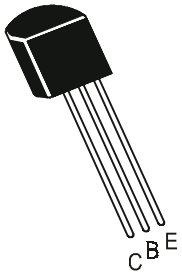
Junction to ambient	$R_{th(j-a)}$	357	°C/W
Junction to case	$R_{th(j-c)}$	125	°C/W

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

DESCRIPTION	SYMBOL	TEST CONDITION	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			
		<b>BC184</b> $I_C=2mA, V_{CE}=5V$	240		800	
		$I_C=100mA^*, V_{CE}=5V$	130			
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	$V_{BE(ON)}$	$I_C=2mA, V_{CE}=5V$	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

# NPN SILICON PLANAR EPITAXIAL TRANSISTORS

**BC184**  
**BC184B**  
**BC184C**



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

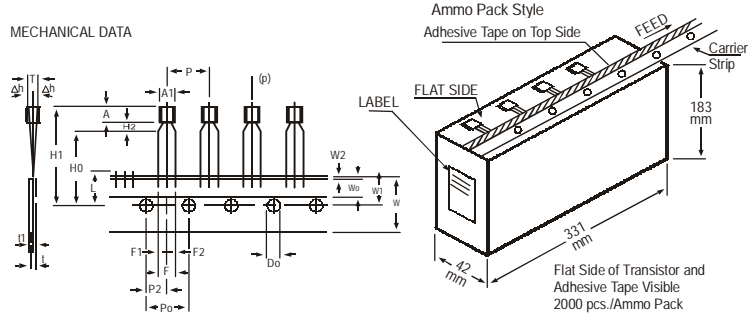
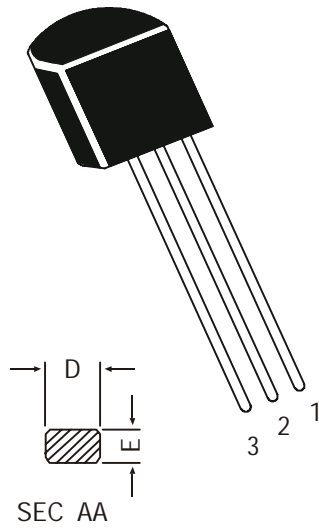
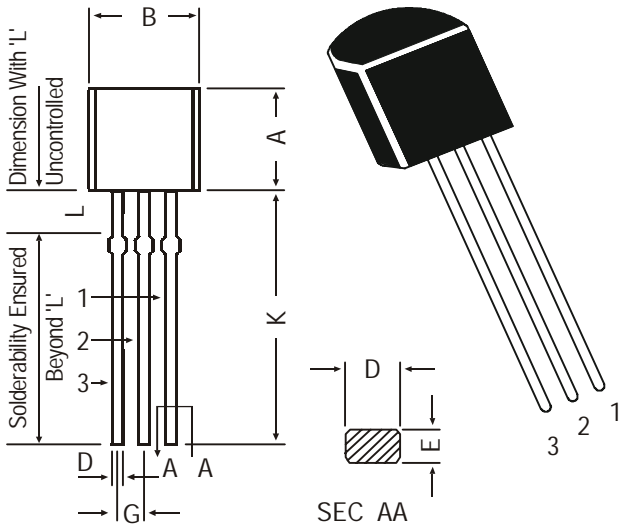
## ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Specified Otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS	
<b>DYNAMIC CHARACTERISTICS</b>							
Transition Frequency	$f_T$	$I_C=0.5\text{mA}, V_{CE}=3\text{V}$ $f=100\text{MHz}$		140		MHz	
		$I_C=10\text{mA}, V_{CE}=5\text{V}$ $f=100\text{MHz}$	150	280		MHz	
Out-Put Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_C=0$ $f=1\text{MHz}$			5	pF	
Input Capacitance	$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0$ $f=1\text{MHz}$		8		pF	
Noise Figure	NF	$I_C=0.2\text{mA}, V_{CE}=5\text{V}$ $R_s=2\text{k}\Omega, f=130\text{Hz to } 15\text{kHz}$		2	4	dB	
		$I_C=0.2\text{mA}, V_{CE}=5\text{V}$ $R_s=2\text{k}\Omega, f=1\text{kHz}$ $F=200\text{Hz}$		2	4	dB	
Small Signal Current Gain	BC184	$ h_{fe} $	$I_C=2\text{mA}, V_{CE}=5\text{V}$ $f=1\text{kHz}$			900	
				BC184B	240		500
				BC184C	450		900
Noise Figure	NF	$I_C=0.2\text{mA}, V_{CE}=5\text{V}$ $R_s=2\text{W}, f=1\text{kHz}$		2	4	dB	

\*Pulse Condition:  $\approx 300\mu\text{s}$ , Duty Cycle=2%

**TO-92 Plastic Package**

**TO-92 Transistors on Tape and Ammo Pack**



All dimensions in mm unless specified otherwise

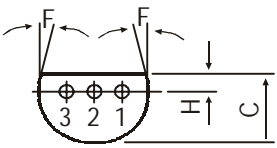
ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	Δh		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		1) 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 dimensions 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

### **Disclaimer**

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