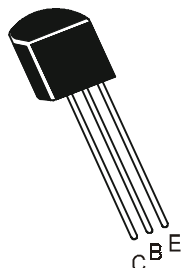


## SILICON PLANAR EPITAXIAL TRANSISTORS

**BC337**  
**BC337A**  
**BC338**

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

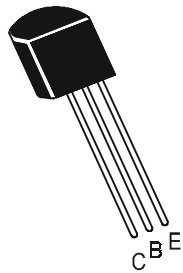


### Complementary Transistors For Use in Driver And Output Stages of Audio Amplifiers

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

DESCRIPTION	SYMBOL	BC327 BC337	BC327A BC337A	BC328 BC338	UNITS
Collector Emitter Voltage	$V_{CEO}$	45	60	25	V
Collector Emitter Voltage	$V_{CES}$	50	60	30	V
Emitter Base Voltage	$V_{EBO}$		5.0		V
Collector Current Continuous	$I_C$		800		mA
Peak	$I_{CM}$		1.0		A
Emitter Current Peak	$I_{EM}$		1.0		A
Base Current Continuous	$I_B$		100		mA
Base Current Peak	$I_{BM}$		200		mA
Power Dissipation @ Ta=25°C	$P_{TA}$		625		mW
Derate Above 25°C			5		mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$		-65 to +150		°C
<b>THERMAL RESISTANCE</b>					
Junction to Ambient in Free Air	$R_{th(j-a)}$		200		°C/W

# SILICON PLANAR EPITAXIAL TRANSISTORS



**BC337**  
**BC337A**  
**BC338**

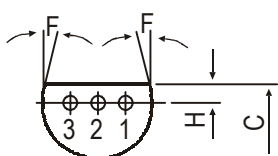
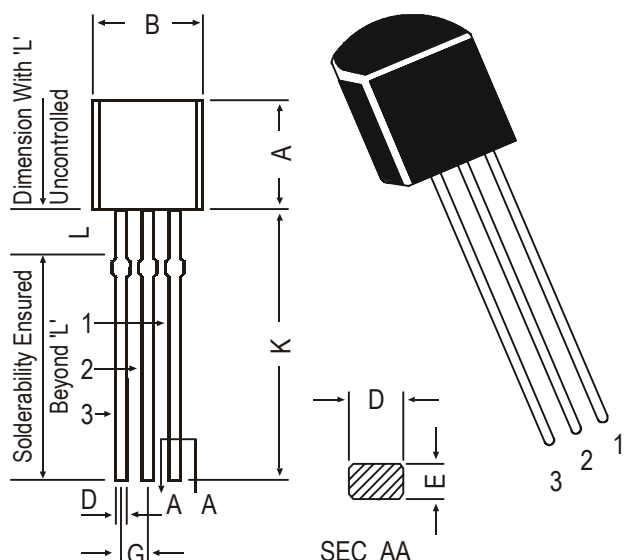
**TO-92**  
**Plastic Package**

## ELECTRICAL CHARACTERISTICS (Ta=25° C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	BC327 BC337	BC327A BC337A	BC328 BC338	UNITS
Collector Emitter Voltage	$V_{CEO}$	$I_C=10mA, I_B=0$	>45	>60	>25	V
	$V_{CES}$	$I_C=100\mu A, I_E=0$	>50	>60	>30	V
Emitter Base Voltage	$V_{EBO}$	$I_E=10\mu A, I_C=0$			>5.0	V
Collector-Cut off Current	$I_{CBO}$	$V_{CB}=20V, I_E=0$ $T_J=150^{\circ}C$			<100	nA
		$V_{CB}=20V, I_E=0$			<5.0	$\mu A$
Emitter cut off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			<10	$\mu A$
DC Current Gain	$h_{FE}^*$	$I_C=500mA, V_{CE}=1V$			>40	
		$I_C=100mA, V_{CE}=1V$	100-600	100-400	100-600	
		<b>Group-10</b>	63-160		63-160	
		<b>Group-16</b>	100-250		100-250	
		<b>Group-25</b>	160-400		160-400	
		<b>Group-40</b>	250-600		250-600	
Collector Emitter Saturation Voltage	$V_{CE(sat)}^*$	$I_C=500mA, I_B=50mA$			<0.70	V
Base Emitter On Voltage	$V_{BE(on)}^*$	$I_C=500mA, V_{CE}=1V$			<1.20	V
<b><u>DYNAMICS CHARACTERISTICS</u></b>						
Transition Frequency	$f_T$	$I_C=10mA, V_{CE}=5V$	<b>NPN</b>		Typ 200	MHz
		$f=35MHz$	<b>PNP</b>		Typ 100	MHz
Out-put Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$	<b>NPN</b>		Typ 5.0	pF
Noise Figure			<b>PNP</b>		Typ 8.0	pF

**\*Pulse Test : Pulse Width = 300us, Duty Cycle =2%.**

## TO-92 Plastic Package

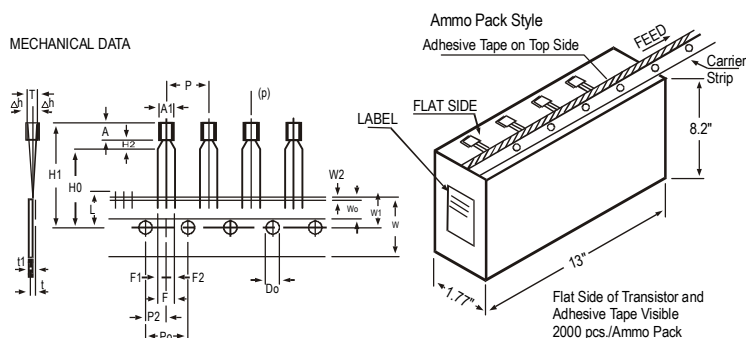


**PIN CONFIGURATION**  
1. EMITTER  
2. BASE  
3. COLLECTOR

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 dimensions in mm.

## 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		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
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	TO BE MEASURED AT BOTTOM OF CLINCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	Δh		0	1		
TAPE WIDTH	W		18		±0.5	AT TOP OF BODY
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	t1 0.3 - 0.6
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 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.

## 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

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