

# Continental Device India Limited

An IS/ISO 9002 and IECQ Certified Manufacturer



## **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	$V_{\sf CES}$	50	60	30	V
Emitter Base Voltage	$V_{EBO}$		5.0		V
Collector Current Continuous	$I_{C}$		800		mA
Pea	k I <sub>CM</sub>		1.0		Α
<b>Emitter Current Peak</b>	I <sub>E M</sub>		1.0		Α
Base Current Continuous	$I_B$		100		mA
Base Current Peak	I <sub>BM</sub>		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
THERMAL RESISTANCE					
Junction to Ambient in Free Air	$R_{th(j-a)}$		200		°C/W

# SILICON PLANAR EPITAXIAL TRANSISTORS



BC337 BC337A BC338

TO-92

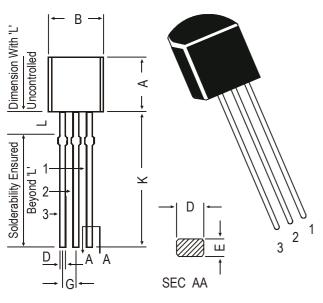
**Plastic Package** 

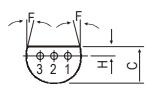
ELECTRICAL CHARACTERISTICS (Ta=25° C unless specified otherwise)

ELECTRICAL CHARACTERISTICS (Table DESCRIPTION	SYMBOL	TEST CONDITION	BC327 BC337	BC327A BC337A	BC328 BC338	UNITS
Collector Emitter Voltage	$V_{CEO}$	$I_C=10$ mA, $I_B=0$	>45	>60	>25	V
	$V_{\sf CES}$	$I_C=100uA,I_E=0$	>50	>60	>30	V
Emitter Base Voltage	$V_{EBO}$	$I_E$ =10uA, $I_C$ =0			>5.0	V
Collector-Cut off Current	I <sub>CBO</sub>	$V_{CB} = 20V, I_{E} = 0$ $T_{J} = 150^{\circ}C$			<100	nA
		V <sub>CB</sub> =20V , I <sub>E</sub> =0			<5.0	μΑ
Emitter cut off Current	$I_{EBO}$	$V_{EB}$ =5V, $I_C$ =0			<10	μΑ
DC Current Gain	h <sub>FE</sub> *	I <sub>C</sub> =500mA,V <sub>CE</sub> =1V			>40	
		$I_C$ =100mA, $V_{CE}$ =1V	100-600	100-400	100-600	
		Group-10	63-160		63-160	
		Group-16	100-250		100-250	
		Group-25	160-400		160-400	
		Group-40	250-600		250-600	
Collector Emitter Saturation Voltage	V <sub>CE</sub> (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
DYNAMICS CHARACTERISTICS						
Transition Frequency	$f_T$	$I_C$ =10mA, $V_{CE}$ =5V	NPN		Typ 200	MHz
		f=35MHz	PNP		Тур 100	MHz
Out-put Capacitance	$C_ob$	V <sub>CB</sub> =10V, f=1MHz	NPN		Typ 5.0	pF
Noise Figure		<del></del> ·	PNP		Typ 8.0	pF
*Pulse Test: Pulse Width = 300us, D	utv Cvcle =	:2%			71	I-

# **TO-92 Plastic Package**

# **TO-92 Plastic Package**





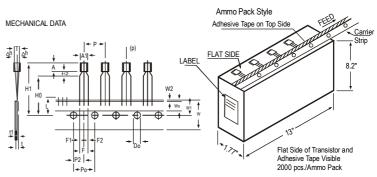
#### PIN CONFIGURATION

- 1. EMITTER
- 2. BASE
- 3. COLLECTOR

DIM	MIN.	MAX.				
Α	4.32	5.33				
В	4.45	5.20				
С	3.18	4.19				
D	0.41	0.55				
Е	0.35	0.50				
F	5 DEG					
G	1.14	1.40				
Н	1.14	1.53				
K	12.70	_				
L	1.982	2.082				

All diminsions in mm.

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



#### All dimensions in mm unless specified otherwise

ITEM		SPECIFICATION					
IIEM	SYMBOL	MIN.	NOM.	MAX.	TOL .	REMARKS	
BODY WIDTH	A1	4.0		4.8			
BODY HEIGHT	Α	4.8		5.2			
BODY THICKNESS	Ţ	3.9	40.7	4.2			
PITCH OF COMPONENT	Р		12.7 12.7		±1	OUNTER DITOU	
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		
COMPONENT CENTRE	P2		0.33		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH	
DISTANCE BETWEEN OUTER					+0.6	DOTTOW OF CLINOT	
LEADS	F		5.08		-0.2		
COMPONENT ALIGNMENT	∆h		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	1 , 1	±0.2		
TOTAL TAPE THICKNESS LEAD - TO - LEAD DISTANCEF1.	t F2		2.54	1.2	+0.4	t1 0.3 - 0.6	
LEAD - 10 - LEAD DISTANCEFT,	FZ		2.04		+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

  1. MAXIMUM ALIGNMENT DEVIATION BETWEEN TAPE FFFD HOLES SHALL NOT EXCE
- MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20
- PITCHES.
  HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO
- EXPOSURE OF ADHESIVE.
  NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
- A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT. 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		

**Notes** 

BC337 **BC337A BC338** 

**TO-92 Plastic Package** 

#### 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 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.



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

BC337\_38 Rev160701